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SOUVENIR CUM ABSTRACT BOOK

International Conference

EMERGING TECHNIQUES IN DRUG DISCOVERY AND DRUG DELIVERY: CURRENT CHALLENGES AND FUTURE PROSPECTS

Date: 10-11 Feb, 2020

Organized by:

CHANDIGARH COLLEGE OF PHARMACY

Landran, Mohali, SAS Nagar-140307, Punjab

V.P. Singh Badnore
Governor of Punjab
and
Administrator
Union Territory, Chandigarh

सत्यमेव जयते

Raj Bhavan
Chandigarh

October 17, 2018

MESSAGE

I am happy to learn that an International Conference on the theme 'Emerging Techniques in Drug Discovery and Drug Delivery: Current Challenges and Future Prospects' is being organised by the College of Pharmacy, Chandigarh Group of Colleges (CGC) Landran, Mohali on 10-11th February, 2020.

The Indian Pharmaceutical Industry is bracing up to meet the demands of the most ambitious health insurance scheme "**Ayushman Bharat**" which has potential to turn India in to the largest pharmaceutical manufacturer of the world. Indian healthcare industry has expected to see a threefold leap in value terms to reach $ 372 billion by 2022. The positive growth prospects of pharmaceutical industry are expected to create a huge demand for proficient pharmacists.

This scientific program will provide the platform for national and international experts to share their rich experience and expertise in drug discovery. I hereby express my best wishes to all the participants and resource persons towards successful deliberations.

V P Singh

[V.P. Singh Badnore]

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MESSAGE

It is a matter of great pleasure that International Conference is being organized under the theme 'Emerging Techniques in Drug Dicovery and Drug Delivery: Current Challenges and Future Prospects'on 10-11th February, 2020 at Chandigarh College of Pharmacy, Landran, Mohali.

Traditionally drugs were discovered by recognizing the active ingredients from plants which was tedious and time consuming process. Modern field of drug discovery is growing agilely with the involvement of some newer techniques.

This scientific program will put forward a platform for participants to learn novel techniques exchange ideas, discover novel opportunities, share their rich expertise and broaden their knowledge I hereby express my best wishes to all the participants and resource persons towards the successful accomplishment of this conclave

President
Punjab State Pharmacy Council
President
Punjab State Pharmacy Council

MESSAGE

I am delighted to welcome you to Chandigarh College of Pharmacy, Landran, Mohali for the two days international conference on ***Emerging Techniques in Drug Discovery and Drug Delivery: Current Challenges and Future Prospects.'*** *I strongly feel that the continued initiatives of Chandigarh Group of Colleges for the betterment of mankind through such scientific conferences will be extremely helpful for future research and clinical practices.*

The shift in medicine and healthcare from the management of disease towards promoting wellness is a keystone in addressing the upstream cause of disease, therefore, this conference has been designed to impart comprehensive knowledge and information to the participants through various technical sessions that include Trends and Emerging Techniques in Drug Delivery and development.

I sincerely hope that this convention will deliberate and discuss all the facets of this exciting topic and come up with recommendations that will lead to a better, healthier and merrier world.

Satnam Singh Sandhu

Chairman

Chandigarh Group of Colleges, Landran

MESSAGE

It is indeed my proud privilege to welcome you all to the International Conference on 'Emerging Techniques in drug discovery and drug delivery: current challenges and prospects" at Chandigarh College of Pharmacy, CGC, Landran. This scientific conference aims at providing a novel platform for the students and faculty to interact and learn from experts across the globe for discussing Innovative Drug Discovery methods.

This unique conference will bring together the best minds in drug discovery and medicinal chemistry field at a common platform to discuss and deliberate the breakthrough research and approaches. This two-day event has been put together for the scientists working in the field of drug discovery and medicinal chemistry. We envisage bringing together world-class speakers and capturing their thoughts and experience for you. The scientific program will feature interactive plenary sessions, poster sessions and oral presentation sessions for abstracts and challenging cases. We endeavor to provide a stimulating and thought-provoking scientific program. Since the growth of this industry is imperative for the success of our Pharma professionals, I request every one of us to contribute to the success of this conference and set new benchmarks.

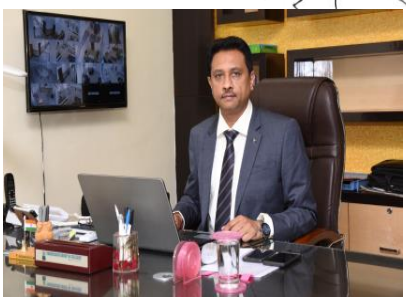
It's time to start something new and fresh to reach great heights for, every great thing comes to shape from a small beginning.

Rashpal Singh Dhaliwal

President

Chandigarh Group of Colleges, Landran

MESSAGE



I would like to congratulate Chandigarh College of Pharmacy, Landran, Mohali for organizing an international conference on 10-11 February, 2020 with the theme '**Emerging Techniques in Drug Discovery and Drug Delivery: Current Challenges and Future Prospects'** which is designed to provide and share the latest information and developments on Drug discovery

The Indian Pharma industry has seen astonishing extension in the last 10 years fuelled by escalating load of disease. In order for the Indian pharmaceutical industry to take advantage of its true potential, innovation and integration are crux of the matter for reaching this amazing growth. This conference will bring together relevant field experts, professors, clinicians, industry representatives and research students from around the world and provide them with opportunity to report, present, share, and discuss scientific questions, achievements, issues and challenges in the field.

I hope the deliberations from various distinguished speakers will benefit the participants to update their knowledge. I also look forward to the unique opportunity to learn and network with professionals in this international gathering to learn about the latest trends and processes in the drug development arena today.

Dr. P.N. Hrisheekesha

Campus Director

CGC Landran

MESSAGE

It is a matter of great pleasure that International Conference is being organized under the theme '**Emerging Techniques in Drug Discovery and Drug Delivery: Current Challenges and Future Prospects**' on 10-11th February, 2020 at Chandigarh College of Pharmacy, Landran, Mohali.

Our Program Committee has put an outstanding scientific program in the area of pharmaceutical sciences with a blend of Nanotechnology, Pharmacological Sciences, Clinical Pharmacy and Biotechnology intended at fetching top international scientists together to present cutting-edge research and new discoveries.

We believe that our diverse and dynamic group of speakers and panelists will provide in depth insight, as well as, actionable and practical tools to brainstorm discover new ideas and a platform to show your capabilities and discoveries to the world.

I am confident that all participants, students, experts and policy makers alike me will immensely benefit from this conference. I am looking forward to a highly interesting and informative meeting and stimulating deliberations.

Dr. M. Arockia Babu
Director-Principal,
Chandigarh College of Pharmacy

INVITED TALKS ABSTRACTS

Targeted cargo delivery in with the assistance of nanoscience

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ABSTRACT

Nanotechnology has contributed significantly in biology, especially in the area of targeted drug delivery. This talk will cover about the novel strategies developed for the drug delivery in cancer therapeutics. In cancer drug delivery we assured the cytotoxic cancer drugs supply without any offsite release by using photothermal nanoparticles which is an optically active functional material. Another interesting strategy for the targeted drug application is through the aid of organic gate molecules, which control was demonstrated in deep tissue with the up-conversion nanoparticles. Recently we expanded this targeted drug delivery to agricultural application*viz.*, fertilizer preservative and pesticide application, which will be touched briefly.

Translational Research in Drug Discovery from Natural Products

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ABSTRACT

Natural products (NP) have been the most productive source of leads for the discovery and development of drugs over the years. Medicinal plants serves as one of important sources of drugs worldwide since they possess interesting biological properties. About 80% of the world's population uses plant/botanical-derived medicines which are called as herbal medicines. A considerable growth has been seen in the herbal medicine market in recent years as an alternative to medicinal products with chemically derived APIs. In drug discovery and development based on natural products of plant origin, there is requirement of potential plant resources as a source of lead molecules. In this aspect, exploring medicinal plant biodiversity provides rational approach to search for new medicines. At the same time in several traditional medicines throughout the world, medicinal plants constitute an important ingredient of medicines. India with its rich medicinal plant biodiversity in terms of three hotspots viz. Eastern Himalaya, Western Himalaya and Western Ghats, provide an excellent opportunity for drug discovery and bioprospecting. Given the fact that there are around 15,000 higher plant species occur in India out of which around 8,000 species are of medicinal importance; there is a great promise to explore Indian medicinal plants for evaluation of various biological activities.

There are several difficulties and challenges associated with the development of herbal drug products. The challenges mainly are related to regulatory guidelines, lack of knowledge of herbal medicines with the drug regulatory authorities, assessment of safety and efficacy, quality control, safety monitoring; for herbal drugs. All these challenges could be addressed effectively by promoting use of herbal drugs through application of modern scientific methodology to herbal drugs/natural products promoting translational research so that the value-added products can be developed. In this presentation translational approaches for product development from herbal extracts/bioactives will be enumerated with case study from ongoing research in our laboratory.

Role of stability and safety studies in establishing quality standards of herbal formulations

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ABSTRACT

Herbal medicines are in great demand in developed as well as developing countries for primary healthcare because of their wide biological activities, higher safety margins and lesser cost. They also offer therapeutics for age related disorders like memory loss, osteoporosis, immune disorder etc. Public academic and government interest in herbal medicines is growing exponentially due to the increased incidence of adverse drug reactions and economic burden of modern system of medicine.

Efficacy, quality, stability and safety of herbal formulations always remained question mark. In last two decades efficacy and quality standard parameters have been established of large number of herbal formulation but the stability and safety studies are still remaining for most of herbal formulations of Ayurvedic and Unani origin. In addition, to this there is need to convert classical outdated dosage forms into modern dosages forms like semisolid dosage form into tablet / capsules and greasy ointment into nano gel forms etc.

Towards the end of 1980, as a result of industrial globalization harmonization of regulatory requirements, the drug stability guidelines are invented because of difference among the international guidelines. At present every country follows its own guidelines for establishing the shelf life/expiry of herbal products/ formulation without much scientific background. Now the time has to come to establish the stability parameters scientifically as per WHO/ICH guidelines 2209, which are as under….

- ✓ Stress testing
- ✓ Accelerated studies
- ✓ Storage conditions
  - ➢ Long term (12 month) -25^{o}C, 2^{o}C/ 60% RH, 5% RH
  - ➢ Intermediate (6 months)- 30^{o}C, 2^{o}C/ 60% RH, 5% RH
  - ➢ Accelerated – 6 months - 40^{o}C, 2^{o}C/75%RH, 5% RH
- ✓ Active pharmaceutical ingredients intended for storage in refrigerator.
- ✓ Active pharmaceutical ingredients intended for storage in freozen at various temperatures.
- ✓ Photo stability testing.

There is great threat of toxicity in herbal drugs/ formulations which may be due to pesticides, heavy metals, microbes or afflatoxins. The well established analytic techniques to establish the toxicity profile.

In addition to this the herbal formulations should also be screened for acute, sub-acute and toxicity pharmacologically. After establishing all the above parameters related to stability, quality standard and safety (toxicity), the formulation should be launched in an international market.

A very short introduction of bioinformatics

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ABSTRACT

Bioinformatics is defined as the use of computer databases and computer algorithms to analyse proteins, genes and the complete collection of DNA that comprises an organism (the genome). A major challenge in biology is to make sense of the enormous quantities of sequence data and structural data that are generated by genome-sequencing projects, proteomics and other large-scale molecular biology efforts.

Comparative genomic analysis is driven by sequencing different genomes, including human, mice, yeast, chimpanzee … Comparing the human genome with those of other organisms allows us to gain new insights in structure and function of human genes. With these new insights new strategies to cure human diseases can be developed. Next to this, comparative genomic analysis is a powerful tool to study evolutionary changes between organisms, resulting in identification of conserved gene regions between species and species specific genes (allowing to have different characteristics per organism).

Functional genomics describes the use of genome-wide assays to study gene and protein function. For humans and other species, it is now possible to characterize an individual's genome, collection of RNA (transcriptome), proteome and even the collections of metabolites and epigenetic changes, and the catalogue of organisms inhabiting the body (the microbiome).

Bioinformatics is an integrative discipline and our focus on individual proteins and genes is part of a larger effort to understand broad issues in biology such as the relationship of structure to function, development and disease.

In 1995 the complete genome of a free-living organism was sequenced for the first time, the bacterium *Haemophilus influenzae*. In the years since then the genomes of thousands of organisms have been completely sequenced, ushering in a new era of biological data acquisition and information accessibility. Publicly available data banks now contain quadrillions of nucleotides of DNA sequence data, soon to be quintillions. The availability of vastly more sequence data (at a relatively low cost per base) has impacted most areas of bioinformatics and genomics. There are new challenges in acquiring, analyzing, storing, and distributing such data. It is no longer unusual for researchers to analyze datasets that are many terabytes in size.

One of the most basic questions about a gene or protein is whether it is related to any other gene or protein. Relatedness of two proteins at the sequence level suggests that they are homologous. Relatedness also suggests that they may have common functions. By analyzing many DNA and protein sequences, it is possible to identify domains or motifs that are shared among a group of molecules. These analyses of the relatedness of proteins and genes are accomplished by aligning sequences. As we complete the sequencing of the genomes of many organisms, the task of

finding out how proteins are related within an organism and between organisms becomes increasingly fundamental to our understanding of life.

When two proteins are aligned, what scores should they be assigned? Margaret Dayhoff provided a model of the rules by which evolutionary change occurs in proteins. This provides the basis of a quantitative scoring system for pairwise alignments between any proteins, whether they are closely or distantly related. The BLOSUM matrices of Steven Henikoff and Jorja G. Henikoff are based on empirical frequencies. Most database searching methods such as BLAST (Basic Local Alignment Search Tool) and HMMER depend in some form upon the evolutionary insights of the Dayhoff model.

When two proteins are aligned, there is an enormous number of possible alignments. There are two main types of alignment:

- A global alignment, such as the method of Needleman and Wunsch, contains the entire sequence of each protein or DNA molecule.
- A local alignment, such as the method of Smith and Waterman, focuses on the regions of greatest similarity between two sequences.

Two popular local alignment algorithms have been developed that provide rapid alternatives to Smith–Waterman: FASTA and BLAST. Each of these algorithms requires less time to perform an alignment. The time saving occurs because FASTA and BLAST restrict the search by scanning a database for likely matches before performing more rigorous alignments. These are heuristic algorithms that sacrifice some sensitivity in exchange for speed; in contrast to Smith–Waterman, they are not guaranteed to find optimal alignments.

The world of molecular biology is evolving rapidly, mainly due to the increasing importance of Next-Generation Sequencing and big data, alongside traditional research methods. The advanced bachelor's degree in Bioinformatics will arm laboratory scientists with the necessary IT and programming skills to tackle the challenges within this rapidly evolving field. In other words, this training will literally make you the laboratory scientist of the future. The Bioinformatics programme aims to teach dry-lab skills to people with a molecular biological background in order to function as a skilled bioinformatician.

Role of Regulatory Affairs Sciences in ensuring effective healthcare throughout the Drug Lifecycle- Discovery to Delivery

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Private consulatncy

ABSTRACT

Between Drug Discovery and Delivery there is a crucial area of Drug Development involving Research , Development, Scale up, Approval of MAAs via different Regulatory procedures globally besides Facility[ies] GxP approvals for cross functional zones via inspections/audits and finally Commercialization.

While the end goal is to ensure unbiased & best healthcare to the end user –there are glaring gaps between emerging & continuously evolving Regulatory /GMP expectations [as our scientific knowledge progresses by leaps & bounds] and the business aspirations of Pharmaceutical Industry . This along with patent expiry & cut throat competition coupled with huge funds involved complicates the entire process – More so due to lack of realization by Academic Institutions , our Government and Industry to have an Full fledged course /Qualification on Regulatory Affairs sciences for Pharmaceuticals.

Regulations- Guidance, Directives and Laws stated by Agencies /Health Ministries worldwide govern and control Drug discovery, development and delivery before reaching the end user by approvals in global markets after submitting Fees for different aspects of Pharmaceutical drugs and devices use. This combined with RnD Expenses – infrastructure, the necessary fees for getting approval/ marketing licences from different statutory bodies ; Regulatory Filing and Maintenance fees ; Facility registration and renewal fees, & skilled manpower to execute and ensure all these is a big challenge as of 2020.

Its time to ensure in- depth Academic Courses and Industrial training regarding multiple arena of Pharmaceutical Sciences for all Professionals with Government bodies involvement Real life Case studies /Practical Training on Regulatory Affairs Sciences is unavoidable as of 2020- Its dynamic and evolves continuously as science progresses & new technical knowledge comes up along with sophisticated/ specific technological tools & software to have more specific & accurate knowledge regarding Pharmaceuticals.

This conference with four streams/tracks of Multi disciplinary Pharmaceutical zones is a one-of-a-kind platform to arrive at solutions to balance these challenges and brighten future prospects by having Cost effective processes, building in Quality by design and following Green chemistry principles.

New Drug Discovery & Development in India

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ABSTRACT

Post independence, Indian researchers developed new technologies for a large number of genrics and helped Indian Pharma in earning the sobriquet of the 'Pharmacy of the World'. This evolution of Indian Pharma Industry, has occurred in broadly three phases. During the first phase upto late seventies, when we didn't even have technology for production of paracetamol, the government institutions alongwith Pharma researchers contributed immensely to shape the contours of this evolving industry. The second phase of development up to 2000 was noticeable for the expansion of R&D by several Pharma players, and for the initiation of Biotechnology ventures in India. The third phase from 2000 onwards marks the Industry coming of age with entry into complex generic, biosimilars, etc. The complex NDDR in India is at a crucial stage. With major Pharma exiting from NDDR and slow incorporation of new biology, the area needs serious thoughts and focused efforts. The talk would elaborate and present my view on these aspects.

Simple Drug Delivery Technologies for Intended Therapeutic Outcomes

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ABSTRACT

Drug delivery is the next generation of drug formulations that works to enhance drug absorption, efficacy, and patient experience. Drug delivery systems control the rate at which a drug is released and the location in the body where it is released. Recently, there is too much technology overshooting in drug delivery research, which simply makes drug delivery systems more complicated without any tangible new advantages or benefits that could be achieved by simple means. Clinically viable formulations need not to be complicated structures. This talk covers different case studies demonstrating design of simple drug delivery technologies that can be successfully utilized in order to achieve intended therapeutic outcomes.

Combined network pharmacology and virtual reverse pharmacology approach for identification of potential Drug targets: a case study for Vascular Dementia

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ABSTRACT

Ancient systems of healthcare (Ayurveda, Siddha, Unani and Sowa-Rigpa) have been used from centuries for the treatment Chronic diseases. This traditional knowledge can be transformed into novel targets through robust interplay of network pharmacology (NetP) with virtual reverse pharmacology (RevP), without ignoring cutting edge biomedical data. This work demonstrates interaction between recent and traditional data, and aimed at selection of most promising targets for guiding wet lab validations. PROTEOME, DisGeNE, DISEASES and DrugBank databases were used for selection of genes associated with pathogenesis and treatment of vascular dementia (VaD). The selection of new potential drug targets was made by methods of NetP (DIAMOnD algorithm, enrichment analysis of KEGG pathways and biological processes of Gene Ontology) and manual expert analysis. The structures of 1976 phytomolecules from the 573 Indian medicinal plants traditionally used for the treatment of dementia and vascular diseases were used for computational estimation of their interactions with new predicted VaD-related drug targets by RevP approach based on PASS (Prediction of Activity Spectra for Substances) software. We found 147 known genes associated with vascular dementia based on the analysis of the databases with gene-disease associations. Six hundred novel targets were selected by NetP methods based on 147 gene associations. The analysis of the predicted interactions between 1976 phytomolecules and 600 NetP predicted targets lead to the selection of 10 potential drug targets for the treatment of VaD. The translational value and Pharmacological lab data of selected targets will be discussed.

Revolutionizing Economic Drug Discovery and Healthcare Delivery: Role of Artificial Intelligence, Biomedical Instrumentation, other techniques

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ABSTRACT

Significant updation of knowledge in machine learning, programming and biomedical instrumentation have revolutionised healthcare discovery and delivery in the past few years. In addition, using existing techniques to understand and predict precipitation of diseases and disorders, several years in advance, is one outcome of scientific and technological discoveries of the decade. A potential drug is discovered and developed for fibrosis (tissue scarring) in about 1.5 months, and a susceptible individual being identified for precipitation of Alzheimer's a decade or two in advance, are few unimaginable examples that signify the changing platforms in drug discovery, development or diagnosis in the foreseeable future. Exploring such novel approaches not only help decrease drug discovery costs in tremendous proportions, besides time, access to healthcare delivery systems could become affordable in the future.

Cyclodextrin based nanosponges: innovative, versatileand safenanocarriers for smart drug delivery

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ABSTRACT

Cylodextrins (CDs) are truncated cone-shaped cyclic ligosaccharides composed of glucopyranose units arranged around a slightly hydrophobic cavity through 1 → 4 □ glucosidic bond. They can accommodate guest molecules inside the cavity thus forming inclusion complexes stable even in solution. Reactive hydroxyl groups oriented towards the exterior side of CDs allow them to act as polyfunctional monomers, able to be cross-linked using a wide variety of bi- or polyfunctional chemicals, including dianhydrides, diisocyanates, active carbonyl compounds, epoxides, carboxylic acids, etc. Consequently resulting with in soluble three-dimensional covalent networks, namely CD-based NSs. These cross-linked polymers have gained prominence in the past decade for a wide range of applications and now appear as superior nanocarriers for smart drug delivery systems. Cross-linking CDs brings significant benefits to CD-NSs compared to the respective native CDs used. In general, CD-NSs are able to for complexes with a wider series of molecules. This is due to the presence of interstitial spaces among CDs, which can host more hydrophilic guests. A further advantage, deriving from the use of NSs, is represented by the polymer network that surrounds the cavities and hampers the diffusion of entrapped guest molecules, thus promoting slower release kinetics. No less important is the fact that NSs are insoluble, hence they can be easily recovered from aqueous media and recycled.CD-NSs can be generally grouped into four consecutive generations, taking into account their chemical composition and properties. This present at ion deals with the synthetic procedures to get CD-NSs, their characterizations and selected examples in drug delivery systems. Finally, future perspectives will be discussed.

Experimental research techniques and Emerging Alternatives to Animals for Neurological Problems

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ABSTRACT

Neurological disorders and their related problems are currently estimated to affect billions of people worldwide. These neurological problems are prevalent among all age groups of diverse geographical regions. Increased life expectancy and reduced fertility have resulted in a demographical transition from predominantly youthful populations to older and ageing ones, causing increases in the neurological problems such as Alzheimer, Parkinson's disease and Huntington, stroke, epilepsy, brain traumatic injury, and other neuropsychiatric diseases etc. As a consequence, many low income countries face significant burden of these diseases. Therefore, neuroscientists/researchers are using various tools and techniques and alternative to animal experimental approaches to study pathogenesis of these neurological problems as challenges and investigating the drugs and their mechanism as a potential opportunity. In the present presentation, efforts will be made to highlights the various neurobehavioral techniques and various emerging alternatives to animal experiment being adopted to study these neurological problems.

Design And Development Of Multi-Target Directed Ligands As Potential Drugs Using Molecular Hybridization Approach

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ABSTRACT

Many diseases like inflammatory conditions, essential hypertension and Alzheimers disease are difficult to manage by mono-drug therapy due to their multi-factorial nature. Polydrug therapy using a combination of drugs in single formulation acting on individual targets has certain obvious problems. For such diseases multi-target directed drugs hitting more than one therapeutic target at a time can be a better choice.

Research work has been performed in our lab in three major areas of medicinal agents to design and develop some novel multi-target directed ligands to counter inflammatory conditions, hypertension and Alzheimers disease. Some currently used NSAIDs were modified into chemical moieties possessing anti-cholinergic activity to counter GIT toxicity. On absorption into the systemic circulation, these chemically modified derivatives would be enzymatically cleaved to release the original NSAIDs to show their normal biological activity. The concept was also utilized to modify the NSAIDs for their target specific chemical delivery in the cartilage tissue.

Alzheimer's disease can also be better managed if a single drug molecule can act on more than one therapeutic target. Some novel multi-target directed moieties were developed showing cholinesterase inhibiting, β-amyloid inhibiting and free-radical scavenging activities. The research work carried out in these three areas of medicinal chemistry would be discussed in the presentation.

Transforming Drug Discovery with Advanced Computational Modeling

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ABSTRACT

Today computational techniques play a critical role in pharma R & D. Thanks to recent advancements in understanding the biology, growth in vast amount of Protein Structures, which led to developments in Structure-based drug design. Computational techniques are widely adopted in understanding the structure function relationship and for screening millions of molecules for lead identification and optimization. In the recent years many techniques has emerged in docking methods, binding energy prediction methods, Understanding the thermodynamics behind protein ligand interaction and in modeling the proteins etc. My talk highlights on these recent developments in computational methods and a case study on how these computational techniques helped in narrowing down to a few hundred molecules from database of millions of compounds. How we selected the leads, how we expanded from few molecules to millions of potential analogs using virtual combinatorial methods. The presentation also covers on lead optimized methods and designing selective molecules towards their target.

Influence of 3-D structures and evolution of proteins in drug repurposing and design

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ABSTRACT

Divergently evolved proteins usually share high structural similarity, gross function and interaction properties. We demonstrate the exploitation of conserved binding properties of homologous proteins in repurposing FDA approved drugs against pathogenic organisms. We consider protein targets of FDA approved drugs and recognize the homologues of these targets in the proteomic database corresponding to the target pathogen. Hits from the pathogen of interest are explored for structural compatibility of binding to the corresponding FDA-approved drug. We prioritise those targets which are known to be involved in essential metabolic processes of the pathogen, involved in host-pathogen interaction and like. This approach has been successfully applied to a number of pathogens including Mycobacterium tuberculosis and Plasmodium falciparum.

The example of sigma-factor binding to RNA polymerase assembly of Mycobacterium tuberculosis will also be discussed to demonstrate a systemic computational structural biology approach in rational design of a peptide that targets the interaction between sigma factor and the RNA polymerase.

To Move the Scientific Research Publishing from Quantity to Quality

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ABSTRACT

The research cycle is not complete without communicating its findings to the scientific fraternity. Publishing research benefits science and helps other researchers to design their own experiments in a better way. Medical writing is the science of communicating biomedical data to appropriate target audiences such as the regulators, health-care professionals or patients, and general public to achieve certain objectives. A researcher may be excellent in his/her work but may not necessarily have the requisite technical writing skills to present their data and findings in the most effective manner. Scientific research publishing is a crucial part of the research which embraces a high-quality paper rather than quantity which rewards high citation rates of research publication. There are many guidelines for good publication practice to high-quality contributions in research. Some organizations are also moving towards impactful publications with easy-to-access bibliometric data, using metrics, enumerate quality in an objective and including notable impactful factors which inspire new approaches to achieve a higher rating outcome. With the increase in easy-to-access bibliometric data, a slew of metrics has been devised to enumerate quality in an objective way, the most notable being the Impact Factor which is an index based on the frequency with which a journal's articles are cited in scientific publications, is a putative marker of journal quality.

Implication of nanotechnology in oral bioavailability enhancement

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ABSTRACT

Oral route is considered as the most natural, convenient and safest route of drug administration involving higher patient compliance, lesser complications and cost-effectiveness as compared to parental drug delivery. Nevertheless, therapeutic efficacy of a large number of perorally administered drugs is often obscured by their poor oral bio-availability (BA) attributed to their extensive first pass metabolic effect by cytochrome P-450 liver microsomal enzyme system as also their efflux by an over expressed plasma membrane transporter P-glycoprotein efflux pump (P-gp). In recent years, the exploitation of nanotechnology for oral application has experienced phenomenal strides. Among the broad spectrum of nanocarriers that has shown promise in oral drug delivery, polymeric and lipidic nanoparticles (NPs),deserve special mention. These nanoparticles, when administered via oral route, are taken up by the M cells in Payer's patches and transported from the gut lumen to intra-epithelial lymphoid cells and thereafter into the blood stream through the lymphatic system. This special transport pathway plays a distinct role in enhancing the BA of NP encapsulated drug while avoiding enzymatic degradation in enterocytes, first pass metabolism in liver and concomitant reduction in dose and drug associated toxicity.

The present talk will focus on the various nanocarriers viz. polymeric nanoparticles, lipidic nanoparticles, liposomes, SEDDS, drug nanocrystals etc. developed by our group for bioavailability enhancement of wide range of bioactives.

Screen-printed Electrodes for Biosensing Applications: Challenges and Opportunities

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ABSTRACT

Human body is a perfect example of sensors and actuators working with brain as central processing unit. We are surrounded by sensors**.** Our mobile phones have a lot of sensors like ambient light, touch, voice, gyroscope, proximity, infra-red, accelerometer, digital compass, GPS, pedometer etc.Sensors areprevalentin daily life. We are developing electrochemical enzymatic biosensors for Glucose, Uric acid and Cholesterol for humans. Fabrication of enzymatic biosensors are comparatively easier in comparison to electrochemical immuno-biosensors e.g. for Breast cancer, cardiac troponins etc. Prerequisite to make a cost-effective biosensor is indigenous electrodes or sensor substrate. Market available electrodes are ranging from Rs/- 250 to Rs/- 550, where the key players are Dropsens, Zensors, Orion etc. With such a huge price of electrode it is never feasible to make a cost-effective test for any analyte detection. In this direction, we have printed our own electrodes. Our printed electrodes have been tested for electrochemical parameters and found satisfactory. Electronic readout for such applications has also been developed in lab. Our next step will be to harvest these electrodes for immunoassay developments.

"Green chemistry: A chemical friendly approach in neurotoxicity management"

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ABSTRACT

Chemistry plays an important role in the core biological science which includes various synthetic and analytical techniques. Initially, synthetic reaction were carried out to obtain useful products and often catalyzed by enzyme and metals. However, organic synthesis reached the heights and was developed into much diversified complex methods. Explosion of the chemicals, for e.g. arsenic, cadmium and acetocyanohydrin etc. were referred as extremely toxic substances and have been allied with major harmful health effects including gastrointestinal, neurological, carcinogenic, respiratory, and endocrine effects. However, interconnection between these toxicants and neurological dysfunction was reported in several incidents, though no cure has been established for several neurotoxic diseases due to lack of curative therapeutic approaches. These life threatening conditions need an effective development in treatment strategies for the repair and regeneration of disrupted neuronal cell. In view of the facts, organic free approaches trigger a new hope in the synthesis of safer biologically active compounds to meet the demands of disease free environment. Green chemistry approaches will provide a valuable understanding on the role of green chemistry in the minimization of neuronal disorders which will bring researchers interest to the next level of innovation for the design and development of new drugs using benign system.

Improving Bioavailability: Role of efficient chemical process development

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ABSTRACT

Bioavailability is one of the most critical parameters in the successful administration of any drug. Today, there is an increasing range of advanced tools and techniques that can enable a process chemist improve the bioavailability of an API. As part of his address, Dr. Rajesh Naik will dwell upon some of the key tools and techniques such as PAT tools, complementing analytical techniques like XRPD, DSC, TGA, electron Microscopy and particle engineering, among others. These techniques backed by robust process development and scale up knowledge can help design a sustainable manufacturing process for consistently delivering the API with improved Bioavailability.

Using SAXS to increase speed of bio-drug design: Story of Tissue Plasminogen Activator

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ABSTRACT

Cardiovascular diseases (CVD) are on rise with increase in the average living age, poor life-style choices and early onset of biochemical issues. Tissue plasminogen activator (tPA) is the main line of defense in cases of cardiac issues, clots and even for stroke (under 3.5 hours from event). Lack of structure of this block buster bio-drug has kept researchers on hold to improve or generate biosimilars. In my talk, I will discuss how limitation of existing techniques did not allow new drug development for three decades. Small angle X-ray scattering (SAXS) allowed to break the barriers, and its structure was solved. Now, this structure is the anvil on which new bio-drugs are being designed and tested. With the expected spike in CVD cases, this talk will be interesting to some inclined to spend time in applying modern techniques to engineer new bio-drugs.

Nosocomial Infections: Current Scenario and Future Challenges

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ABSTRACT

A nosocomial infection or hospital acquired infection (HAIs) is contracted because of an infection or toxin that exists in a certain location, such as a hospital. Hospital-acquired infections are caused by viral, bacterial, and fungal pathogens. Bacteria alone cause about more than 90 percent of these cases. The most common types are bloodstream infection (BSI), pneumonia , ventilator-associated pneumonia VA, urinary tract infection (UTI), and surgical site infection (SSI).One of the most common wards where hospital acquired infections occur is the intensive care unit (ICU). About 1 in 10 of the people admitted to a hospital will contract a hospital acquired infections. They're also associated with significant morbidity, mortality, and hospital costs.

As medical care becomes more complex and antibiotic resistance increases, the cases of hospital acquired infections are on the verge of increase. The patients may develop new symptoms during Some may experience visible symptoms. The people with compromised immune systems during their hospital stay, are more likely to contract an infection. Some of the common bacteria that are responsible for hospital acquired infections are:

The microorganisms spread mainly through person-to-person contact. This includes unclean hands, and medical instruments such as catheters, respiratory machines, and other hospital tools. hospital acquired infections cases also increase when there's excessive and improper use of antibiotics. This can lead to development of resistance in bacteria those may become resistant to multiple antibiotics.

These hospital acquired infections can be prevented in a lot of healthcare situations. Some general measures for infection control include screening the ICU to see if people with HIAs need to be isolated, Identifying the type of isolation needed, which can help to protect others or reduce chances of further infection, observing hand hygiene, which involves washing hands before and after touching people in the hospital, wearing appropriate gear, including gloves, gowns, and face protection, cleaning surfaces properly, with recommended frequency and by making sure rooms are well ventilated.

The responsibility of hospital acquired infections prevention is with the healthcare facility provider. Hospitals and healthcare staff should follow the recommended guidelines for sterilization and disinfection. Taking steps to prevent hospital acquired infections can decrease the risk of contracting them by 70 percent or more. However, due to the nature of healthcare facilities, infrastructure and lack of awareness, it is difficult to eliminate 100 percent of nosocomial infections. Attempts are being made to combat this problem on the basis of latest data of antibiograms.

Mimicking extracellular matrices in bottom-up self-assembly for biomedical applications

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ABSTRACT

Nature is a perfect engineer to design highly precise materials in all possible dimensions from nano to macro. However, it remains a considerable challenge for the scientists to mimic the nature to design materials with such perfect control over dimensions using bottom-up self-assembly. In the realm of bio-inspired material research, we take cue from kinetically controlled amyloid beta sheet assembly and develop short peptide fragments inspiredfrom amyloid nucleating core to perform self-assembly processes out-of-equilibrium to yield materials with well-defined dimensions and properties. The length distribution and history of the peptide fibers play important role in determining the mechanical stiffness of the resulting hydrogels.The length dependent network elasticity is similar to natural bio-filamentous networks in ECM *e.g.* microtubules and collagens and is further explored as a template for bioactive glass mineralization for activate bone cell proliferation.

In the quest of designing nanostructures with intelligent stimuli-response and adaptable to environmental changes single chain polymeric nanoparticles (SCPNs) are interesting class of materials where a polymer chain with controlled attributes can be collapsed into organic nanoparticles with definite size and functionality. Such a precise control for designing SCPNs lead to interesting applications in the field of nanomedicine in the regime below 30 nm, a criteria for crossing blood brain and blood retinal barrier. Recent designs of supramolecular polymeric nanoparticles with controlled size and customized arrangement of stimuli-responsive functional moieties is conferred here.

Pharmacology And Pharmacotherapeutic Potential Of Probiotics And Prebiotics In Git Disorders

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ABSTRACT

Probiotics are microorganisms that are believed to provide health benefits when consumed. The term probiotic is currently used to name ingested microorganisms associated with benefits for humans and animals. Research into the potential health effects of supplemental probiotics has included the molecular biology and genomics of Lactobacillus in -immune function, cancer, and antibiotic-associated diarrhoea, travellers'diarrhoea, paediatricdiarrhoea, inflammatory bowel disease, and irritable bowel syndrome, bacterial and yeast vaginosis, urinary tract infections. The first commercially sold dairy-based probiotic was Yakult, a fermented milk with added Lactobacillus casei in 1935. Since then, many more probiotic foods have come on the market, mostly in the form of dairy products. Recently, non-dairy and unfermented probiotics have been produced, including breakfast cereal and snack bars, whereas other probiotic products include kefir, yogurt, kombucha, kimchi, sauerkraut, and other fermented foods and beverages.

Prebiotics are substances that induce the growth or activity of microorganisms (e.g., bacteria and fungi) that contribute to the well-being of their host. These are mainly composed of carbohydrates ranging from small sugar alcohols and disaccharides to oligosaccharides (Fructooligosaccharides) and large polysaccharides.

In general, the strongest clinical evidence for probiotics is related to their use inimproving gut health and stimulating immune function. probiotic effects on a variety of gastrointestinal and extraintestinal disorders, including inflammatory bowel disease (IBD), irritable bowelsyndrome (IBS), vaginalinfections, and immune enhancement.

Someprobiotic preparations have been used to prevent diarrhoea caused by antibiotics, or as Part of the treatment for antibiotic-related dysbiosis. Studies have documented someprobiotics have been shown to increasesurvival of preterm neonates. Probiotics have also been investigated in relation toatopic eczema and complications of liver cirrhosis. The guidelines for examining the scientific evidence on the functional and safetyaspects of probiotics in food [FAO/WHO 2002], are used as a starting point for governments to devise their own policy with regard to new probioticstrains to be introduced for human use.

Biotechnology From Lab To Society

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ABSTRACT

Imagination is more important than knowledge. For knowledge is limited to all we know and understand. While imagination embraces the entire world and all there ever will be to know and understand. Creativity can be god gifted in some people. However, creativity in science can also be cultivated to do meaningful science. Some of the important footsteps to increase the creative potential in science are to be 'happy but not satisfied', being alert, habit of wider thinking, asking questions, brain storming, feedback from others and most importantly enjoying the work to do. By doing science in a creative way we can take science from classroom to laboratory to society.

In modern cities majority of the sewage water is treated in sewage treatment plants (STP) but even after treatment it is mainly disposed of in natural water recourses. However tertiary treated sewage water (TT Water) can be used for number of alternate purposes such as irrigation, construction, service stations, recreational purposes like replenishment of lakes etc. However there are problems associated with the use of treated water for these purposes such as

- Improper treatment and irregular monitoring of the efficiency of STP'S
- Presence of excess nutrients such as phosphates and nitrates which lead to eutrophication
- Growth of sulphate reducing bacteria (SRB) which lead to foul smell.

By working in collaboration with Department of Environment Chandigarh all these problems were addressed.

For one year STP's of Chandigarh were monitored regularly and it was concluded that it is not the type of technology it is management of the STP's which determines the quality of treated water, with given recommendations quality of treated water was improved.

To explore the possibility of using TT water for the management of Sukhna Lake Chandigarh quality of TT water was compared with water of Sukhna Lake. It was found to be fit in all aspects except excess of nutrients. An inherent technology was standardized using denitrifying and phosphate solubilizing bacteria; which completely removed these nutrients from TT water. **Chandigarh administration has taken a note of the work and exploring the use of sewage water with this process for saving the Sukhna lake Chandigarh**.

TT water is being used for irrigation in Chandigarh but the foul smell in it is the major problem. a process was standardized reduce the growth of SRB's by aeration and addition of acceptable chemicals which led to the complete removal of smell form TT water. **Municipal Corporation has taken up the process and is going to apply it for solving the problem of foul smell**.

Therefore microbial process can be used to convert waste water into asset and solving various problems related to society at large.

PHARMACEUTICS ABSTRACTS

PU-01

3D Printing in Pharmaceutical Sciences: Applications for Developing Personalized Medicines and Medical Devices

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ABSTRACT

Increasing demand for customized pharmaceutics and medical devices makes the impact of additive manufacturing and has amplified rapidly in recent years. The 3D printing has become one of the most revolutionary and powerful tool serving as a technology of precise manufacturing of individually developed dosage forms, tissue engineering and disease modeling. It is an art and science of printing in a new dimension by using bio inks (a substance made of living cells).It uses computer aided drafting technology and programming to produce a 3D object by layering material onto a substrate.It has gained interest in pharmaceutical manufacturing, with FDA's approval of a 3D printed drug in August 2015. It promises a future of personalized and customized medicines printed on demand, to custom doses and the possibility that cost may no longer be a barrier to making medicine. It has also been utilized for the fabrication of medical implants and devices, such as stents and catheters. Its chief potential is to customize medication and being able to deliver, what you want and when you want.

PU-02

An overview of Physics of Tablet Compression

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ABSTRACT

The advantages of high precision dosing, manufacturing efficiency and patient compliance make tablets the most popular dosage forms. Compaction, an essential manufacturing steps in the manufacture of tablets, includes compression (volume reduction and particle rearrangement) and consolidation (interparticulate bond formation). The success of the compaction process depends not only on the physico- technical properties of drugs and excipients, especially their deformation behaviour, but also on the choice of instrument settings with respect to rate and magnitude of force transfer. Specialized tools such as co-processing of API and excipients can be used to improve their functionality. For procurement of data toward elucidation of tablet structure and behavior, tentative methods for determining (a) tablet density, (b) bulk density of the mixed ingredients, (c) porosity and pore size of

tablets, and (d) the compressional force and compressional work necessary for formation of tablets have been developed. Other methods for obtaining additional dynamic and static information related to formation of tablets are also discussed. The relationship of upper and lower punch forces and the ejection force during the process of tablet compression has been studied. When such differences exist, substantial forces are needed to eject tablets from the die.

PU-03

Formulation And Evaluation Of Valsartan Containing Surface Solid Dispersions For The Development Of Orodispersible Tablet

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ABSTRACT

In these postulations we think about Surface Solid Dispersion and Oro dispersible tablet for upgrade of disintegration rate of valsartan. The medications having low solvency, the disintegration of these medications is rate constraining advance in their bioavailability in oral measurements frames. To defeat this number of innovations are accessible. Among them surface solid dispersion and oro dispersible tablets are two promising systems. Surface solid dispersion is a method for scattering at least one fixing on a water solvent transporter of to a great degree high surface territory to accomplish expanded bioavailability and disintegration rates of insoluble medications, and oro dispersible tablets are one of the novel oral medication conveyance framework that break down or scatter rapidly in almost no time after situation in month without water.

We get ready and assess both the definitions. The result of both the details were compared to give a hitter measurement frame in dissolvability and bioavailability worry for valsartan.

PU-04

Challenges And Strategies For Developing Pulmonary Drug Delivery Systems

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ABSTRACT

Pulmonary route of drug delivery gaining importance in pharmaceutical research field as it permits to target the drug delivery directly to lung both for local and systemic treatment. It is relatively multifaceted because the respiratory tract has evolved defence mechanisms to keep inhaled drug particles out of the lungs and to remove or inactivate them once deposited. In

addition to the mechanical, chemical and immunological barriers, pulmonary drug delivery is adversely affected by the behavioural barriers of poor adherence and poor inhaler technique. Strategies to mitigate the effects of these barriers include use of inhaler devices and formulations that deliver drug to the lungs efficiently, appropriate inhaler technique. Overcoming pulmonary challenges, offer great deal of opportunities for designing and developing pulmonary drug delivery systems. Different strategic approaches for effective delivery and hence efficacious treatment of pulmonary diseases/disorders will be outlined systematically.

PU-05

Formulation And Evaluation Of Floating Microspheres Of Nateglinide

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ABSTRACT

Gastroretentive Dosage Forms have Potential for use as Controlled-Release Drug Delivery Systems. Gastroretentive Floating Drug Delivery Systems have a Bulk Density lower than that of Gastric Fuids and thus increase Residence Time of Drug in Stomach and provide Controlled Delivery of many Drugs. The Aim of the Present Study is Formulation and Characterization of Floating Microspheres using Nateglinide as a Model Drug for the management of Type-2 Diabetes Mellitus. Due to Short Biological Half Life of Drug (about 1.5 hours) Frequent Dosing is required to maintain its Therapeutic Effect.

Floating Microspheres were Prepared by Oil-in-Water Emulsion Solvent Evaporation Technique using Ethyl Cellulose and Eudragit S-100 as Release Retarding Polymers. The Floating Microspheres were Evaluated for Percentage yield (%), Particle size, Drug Content, Drug entrapment efficiency, *in-vitro* Floating ability and *in-vitro* Drug Release studies. The Surface Morphology of prepared Microspheres was Characterized by Scanning Electron Microscopy. The Microspheres were found to be Spherical in Shape and Porous in nature. Compatibility studies were performed by Fourier Transform Infrared (FTIR) Technique. The prepared Microspheres showed Prolonged Drug Release of 12 h and remain Buoyant for more than 12 h. *In-vitro* Release Kinetics were Studied in Different Release kinetics models like Zero order, First order, Higuchi and Korsmeyer Peppas model and the best fit model was found to be Higuchi plot with Release exponent n value less than 0.89. It was Concluded that Developed Floating Microspheres of Nateglinide offers a suitable and practical approach for Prolonged Release of Drug over an Extended Period of Time and thus Oral Bioavailability, Efficacy and Patient Compliance is improved.

PU-06

pH Regulated Drug Delivery Systems

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ABSTRACT

Stimuli responsive polymeric drug delivery system has to release drug at various sites and have become a major focus area. Among all stimuli responsive material the pH responsiveness is extensively studied. The polymeric material used for pH responsiveness drug delivery system contain certain chemical functionality in their structure, that can respond to change in the pH of the surrounding environment. The drug is dispersed into the polymer which acts as triggering agent and pH sensitive polymer acts as biosensor. As the pH of surrounding environment changes, the functional groups ionize to acquire positive or negative charge, and causes repulsion between like charges, as a result polymer shape changes. And the drug releases out of the polymer at controlled rate. Various anionic and cationic polymers are used for these types of drug delivery systems. Anionic polymers (polyacids) have acidic groups (carboxylic acid, phosphonic acid, boronic acid, sulfonic acid), become negatively charged at high pH and polymer swells. Cationic polymers (polybases) have basic groups (amine groups), become positively charged at low pH and polymer deswells. Based on pH responsive property of the polymer, different drug delivery systems like tablets, hydrogels, nanoparticles, microparticles etc could be designed for targeting specific site of action like cancers, tumors, colon.

PU-07

Formulation And Evaluation Of Imiquimod Loaded Nanosuspension Gel For Transdermal Delivery

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ABSTRACT

Objective: The main objective of this present study was to formulate and evaluate the nanosuspension gel based topical delivery system of imiquimod or increased solubility, permeability and sustained drug release. **Methods:** Imiquimod nanosuspension was prepared by media milling technique using glass beads as a milling media, poloxamer 407 as a stabilizer. The optimized nanosuspension incorporated into a topical gel using Carbopol 934P as a gelling agent for sustained the drug release. **Results:** The particle size results showed that increases with increase in the surfactant and drug concentration. SEM showed that IMI-NS

were spherical in shape. In vitro permeation studies showed that the amount of IMI permeated through the membrane of IMI nanogel of 1% concentration (80.248±0.162) after 24 h was higher than IMI nanogel to the different concentration (pure drug, 1.5%, 2.0%) of IMI nanogel 24 hrs. Prepared imiquimod loaded nanosuspension gel was clear and showed good homogeneity and pH was found in normal range. The drug release from imiquimod nanosuspension loaded gel was significantly prolonged by using the gelling system due to the addition of the polymer Carbopol 934P and it follows Higuchi matrix. **Conclusion:** Imiquimod nanosuspension loaded topical gel showed increased saturation solubility and sustained drug release.

PU-08

To Formulate And Evaluate Terbinafine Hydrochloride Loaded Solid Lipid Microparticle Gel For Topical Delivery

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ABSTRACT

AIM: The purpose of research work was to formulate the antifungal solid lipid microparticle gel of Terbinafine hydrochloride with the aim to prolonged drug action to evaluate its physicochemical and the pharmacodynamics properties.

METHOD: SLM gel was formulated by using Terbinafine hydrochloride as antifungal drug, steric acid as lipid, Tween 80 as surfactant, ethanol as a organic solvent and water as a solvent. Total sixteen formulations of SLM were prepared. This is prepared by solvent evaporation method. After SLM was soaked in different concentration of Carbopol- 934 for 24 hrs.

RESULT: The formulated SLM gel was evaluated for the different parameters such as physical characterization, pH, solubility, entrapment efficiency, In-vitro drug release, and stability. The formulation F2 out of sixteen formulations was selected as optimized formulation, which showed the highest % entrapment efficiency (92.77±0.49%), prolonged drug release (62.8±0) in 24 hrs. The vesicles formed were in spherical shape identified by optical microscopy. The optimized formulation (F2) was stable for six month of time period. FTIR results showed that there was no interaction between the drug and excipients.

CONCLUSION: SLM gel showed the prolonged, localized action of drugs and sustained drug release.

PU-09

Diclofenac Sodium Loaded Microsphere For Sustained Delivery

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ABSTRACT

Microspheres are free flowing powder which consists of protein or synthetic polymer that are biodegradable in nature ranging in between 1-1000µm in size. The main aim of this work was to prepare microsphere loaded with diclofenac sodium. Diclofenac sodium is a non steroidal anti inflammatory drug used for treat pain and inflammation. O/W emulsion solvent evaporation method was used for the preparation of microsphere by using ethyl cellulose as a polymer dissolved in organic solvent. Diclofenac was added in the polymer solution. The resulting solution was poured in paraffin and surfactant and undergoes stirring for few hours. When the process in completed paraffin is decant off and the microsphere is prepared. All the evaluation parameters was determined that shows a efficient release of drug for few hours.

PU-10

Antifungal nanosponge loaded hydrogel for topical delivery

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ABSTRACT

The main aim is to formulate Clotrimazole and Fluconazole nanosponge for topical delivery. Nanosponges are tiny sponges having a very small size and can be filled with number of drugs. Nanosponge preparation of Fluconazole and Clotrimazole were formulated by emulsion solvent diffusion method using different drug polymer ratio. Commonly ethyl cellulose was taken as a polymer. Poly vinyl alcohol and dichloromethane was taken to prepare aqueous phase. The prepared nanosponge was evaluated for production yield, appearance and drug entrapment efficiency. The prepared nanosponge was formulate to hydrogel using carbopol and evaluated for ph and other evaluation parameters. Overall study shows that nanosponge gives a better release of drug in an efficient way.

PU-11

Formulation and Evaluation of Solid Lipid Microparticles of Aripiprazole

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ABSTRACT

In the present investigation the solid lipid microparticles of aripiprazole were prepared in a view to achieve high permeability of aripiprazole in brain through blood-brain-barrier. The

solid lipid microparticles were prepared by using hot microencapsulation technique. Twelve formulations were prepared by varying concentration of surfactants (span 20, span 80, tween 20 and Tween 80). The preformulation study consisted of different parameters such as melting point, thin layer chromatography, solubility analysis, FTIR and compatibility study. The developed formulations were subjected to various parameters such as the particle size, % entrapment efficiency, production yield, % cumulative drug release, percentage yield, drug loading and SEM. Based upon highest entrapment efficiency, drug release and % cumulative release the F3 formulation was considered as the best formulation. The developed formulation showed spherical and smooth surface as suggested by SEM photograph. The % drug release of F3 formulation was found to be 86.23% after 12 hr.

PU-12

Formulation And Evaluation Of Resiquimod Loaded Nanosuspension Gel For Transdermal Delivery

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ABSTRACT

The main objective of this present study was to formulate and evaluate the nanosuspension gel based topical delivery system of Resiquimod or increased solubility, permeability and sustained drug release. **Methods:** Resiquimod nanosuspension was prepared by media milling technique using glass beads as a milling media, poloxamer 407 as a stabilizer. The optimized nanosuspension incorporated into a topical gel using Carbopol 934P as a gelling agent for sustained the drug release. **Results:** The particle size increases with increase in the surfactant and drug concentration. SEM showed that RESI-NS were spherical in shape. In vitro permeation studies showed that the amount of RESI permeated through the membrane of RESI nanogel of 1% concentration (80.248±0.162) after 24 h was higher than RESI nanogel to the different concentration (pure drug, 1.5%, 2.0%) of RESI nanogel 24 hrs. Prepared resiquimod loaded nanosuspension gel was clear and showed good homogeneity and pH was found in normal range. The drug release from resiquimod nanosuspension loaded gel was significantly prolonged by using the gelling system due to the addition of the polymer Carbopol 934P. **Conclusion:** Resiquimod nanosuspension loaded topical gel showed increased saturation solubility and sustained drug release.

PU-13

To Formulate And Evaluate Terbinafine Hydrochloride Loaded Solid Lipid Microparticle Gel For Topical Delivery

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ABSTRACT

AIM: The purpose of research work was to formulate the antifungal solid lipid microparticle gel of Terbinafine hydrochloride with the aim to prolonged drug action and to evaluate its physicochemical and the pharmacodynamics properties.

METHOD: Solid lipid microparticle gel was formulated by using Terbinafine hydrochloride as antifungal drug, steric acid as lipid, Tween 80 as surfactant, ethanol as an organic solvent and water as a solvent. Total sixteen formulations of SLM were prepared. The formulation is prepared by solvent evaporation method. After that SLM was soaked in different concentration of Carbopol- 934 for 24 hrs.

RESULT: The formulated SLM gel was evaluated for the different parameters such as physical characterization, pH, solubility, entrapment efficiency, In-vitro drug release, and stability. The formulation F2 out of sixteen formulations was selected as optimized formulation, which showed the highest % entrapment efficiency (92.77±0.49%), prolonged drug release (62.8±0) in 24 hrs. The vesicles formed were in spherical shape identified by optical microscopy. The optimized formulation (F2) was stable for six month of time period.

CONCLUSION: SLM gel showed the prolonged, localized action of drugs and sustained drug release.

PU-14

Development And Evaluation of Griseofulvin loaded Nanostructured Lipid Carriers for superficial fungal infections

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ABSTRACT

Superficial infections of the skin are mostly caused by dermatophytes and yeast. Generally these types of infections doesn't caused serious illness but sometimes if not treated properly recurrent can appear.Griseofulvin is frequently used for treatment and available in different conventional dosage form but not so effective due to hydrophobicity and less bioavailability.

Nanostructured lipid carriers (NLCs) are drug delivery systems composed of both solid and liquid lipids as core matrix. It has been shown that NLCs have some advantages for drug therapy over conventional carriers, including increased solubility, ability to enhance storage, stability, improved permeability and bioavailability, reduced adverse effects, prolong half-life and tissue targeted delivery. The objective of the present work was to develop Nanostructured

lipid carriers (NLC) of Griseofulvin, which were formulated by micro emulsification method using 2^3 full factorial design as the optimization technique. Eight batches were formulated according to the design with the amount of solid lipid (Glyceryl monostearate, stearic acid), liquid lipid (Isopropyl myristate) and Pluronic F68 as independent variables. The NLCs were evaluated for particle size, zeta potential, entrapment efficacy and surface morphology. On the basis of evaluation of all the batches, batch B2 was selected as optimized one with a particle size of 220.9 nm, entrapment efficacy of 90.37% and cumulative drug release of 1329.5 microgram/cm^2.

PU-15

Transdermal Patches a successful tool in Transdermal Drug Delivery System: An overview

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ABSTRACT

Transdermal drug delivery (TDD) is a non-invasive route of drug administration, although its applications are limited by low skin permeability. It is an attractive alternative technique over the conventional techniques for administration of systemic approaches. For both local and systemic effects skin is the major site of application. However, to penetrate the drug through skin, stratum corneum is the main barrier. So to evade the stratum corneum and to increase the flux through skin membrane, different approaches of penetration enhancement are used. Several new active rate controlled transdermal drug delivery system (TDDS) technologies have been found, developed and commercialized for the TDD. This review presents mainly the structure of skin, routes of penetration through skin, different approaches to enhance the penetration, transdermal patches to optimize the transdermal delivery system into an effective drug delivery system.

PU-16

Formulation And Evaluation Of Colon Specific Tablet Of 5-Fluorouracil

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ABSTRACT

The colon and rectum are the parts of digestive system of human beings. Cancer affecting either of these organs may be called colorectal cancers. Conventional cancer chemotherapy is not very effective for treatment of colorectal cancer, as the drug molecule does not reach the

target site at therapeutic concentration, on the other side they produces sever systemic toxic effect. Aim of this study was to develop a novel colon targeted compression coated tablet of pectin matrix by using Inulin and Eudragit RS100 for site specific delivery of 5-Fluorouracil to the colon without the drug being released in stomach or small intestine. The *in vitro* drug release study in different physiological environment confirmed insignificant release of 5-FU in physiological condition of stomach and small intestine further fast and major drug release in caecal content. *In vivo* drug absorption of optimized formulation was performed in order to establish its targeting potential in colon. It is concluded from the present study that pectin matrix by using Inulin and Eudragit RS100 can be used as a drug carrier for an effective colon targeted delivery system for drugs effective against the large intestine resident disease condition.

PU-17

Design and evaluation of gastroretentive passage tablet of Theophylline by direct compression

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ABSTRACT

The aim the current study was to design and preparation of gastroretetion floating tablet of theophylline by direct compression. The Biodynamic tablet using direct compressed cores had minimum time to float. Three polymers of district scar mechanism were tested for impact on theophylline directly compressed tablets namely Kollidon SR, Ethylcellrloyse and carraubewax at Distract compression forces. Tablets were evaluated for invertor buoyancy and drug release study was evaluated for shouts USP. Paddle type dissolution apparatus 0.1 N Hydrochloric Acid as dissolution medium, the explanation is that their design can be apprised any appropriate to achieves chronotherapeutic drug delivery system of theophylline for the management of chronic illness such as asthma. The compressed tablets were evaluated for the hardness, uniformity of weight, friability, dry content, and invitro dissolution studies, all the formulations showed compliance with Pharmacopoea standards, the drug release kinetics showed zero order.

Super floating properties and sustained drug release were accomplished. The floating tablets suggest tube promising gastroretantive drug delivery system.

PU-18

Solubility Enhancement Of Valsartan By Solid Dispersion Technology And Formulation Of Mouth Dissolving Tablets

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ABSTRACT

The objective of the current research is to enhance the aqueous solubility and ultimate bioavailability of BCS class II drug, Valsartan. This was accompolished by preparing solid dispersions of drug by kneading method, using various hydrophilic polymers like PEG 4000, PEG 6000 and PVP K30. In this study, physical mixture of drug and polymer were mixed in different ratios of 1:1, 1:2 and 1:4. All the formulations were evaluated for saturation solubility, percentage yield, flow property, drug content as well as in-vitro drug release. The results obtained showed that the aqueous solubility and dissolution rates were enhanced of optimized formulations as compared to pure drug. The increase in dissolution rate may be attributed to reduced particle size of drug particles which eventually enhance the wetting ability of drug. Tablets prepared from solid dispersion by direct compression method were subjected to various tests like weight variation, hardness, friability, swelling index, drug content uniformity, in vitro disintegration test, wetting time etc.

PU-19

Nanoemulsion – A safe approach to improve bioavailability

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ABSTRACT

An advanced mode of drug delivery system has been developed to overcome the major drawbacks associated with conventional drug delivery system .This review gives a detailed idea about a Nanoemulsion system. Nanoemulsion are nano sized emulsions, which are manufactured for improving the delivery of active pharmaceutical stable isotropic system in which two immiscible liquids are mixed to form a single phase by means of an emulsifying agents i.e. surfactant and co-surfactant .The droplet size of Nanoemulsion falls typically in the range of 20-200nm. The main difference between emulsion and Nanoemulsion lies in the size and shape of particles .It improves the Bioavailability of drug and Nanoemulsions are non toxic, non irritant in nature. Components of Nanoemulsion are oil, emulsifying agents and aqueous phase .Formulation of Nanoemulsion Includes active drug, additive and emulsifier. The various methods for preparation of Nanoemulsion include two methods – highly energy emulsification and low energy emulsification. A stable Nanoemulsion is characterized by the absence of creaming, absence of deterioration by microorganism. Nanoemulsion is measured by droplet size analysis, dilution test, dye test .The most important application of Nanoemulsion may protect the drugs which are susceptible to hydrolysis and oxidation. Factor

like surfactant and concentration must be enough during preparation of Nanoemulsion.

PU-20

Development And Optimization Of Vildagliptin floating Microspheres Using Central Composite Design

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ABSTRACT

The aim of the study was the development and characterization of vildagliptin loaded eudragit RL100 floating microspheres using central composite design. The selected independent variables were Chitosan, Eudragit RL100 ratio, and the ratio of dichloromethane/ethanol/acetic acid. The selected dependent variables were yield, mean particle size, buoyancy, encapsulation efficiency, and drug release within 10 h. Further, the prepared floating microspheres were characterized for particle size, morphology, micrometric studies, entrapment efficiency, in vitro drug release, release kinetics, compatibility studies (FTIR), SEM and DSC studies. The vildagliptin microspheres were free-flowing. The mean particle size ranged from 80.08±1.94 to 400.32±1.03μm and the entrapment efficiency ranged from 77.11±3.01 to 97.38±2.34%. SEM revealed a hollow spherical structure of microspheres with a smooth surface morphology and the internal surface was porous due to the evaporation of solvent entrapped within the shell of microspheres. The IR Spectrum obtained from vildagliptin and polymers were identical and there was no change in the functional group absorption of any molecule present in formulated product. Formulation F6 was found to be highest *in-vitro* buoyancy 95.97±1.63. Amongst the formulation, F6 was found to be the best formulation as it release vildagliptin 98.60% in a sustained manner. The results obtained was clearly indicated that prepared floating microspheres of vildagliptin may prove to be potential candidate for safe and effective sustained drug delivery over an extended period of time which can reduce dosing frequency.

PU-21

A Review On: Protien And Peptide Drug Delivery System

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ABSTRACT

Proteins and peptides are widely indicated in many diseased states. Parenteral route is the most commonly employed method of administration for therapeutic proteins and peptides. Proteins are the polymers consisting of amino acids covalently linked by peptide bonds. Peptides are

small protein composed of up to a few dozen amino acidproteins are rapidly degraded by digestive enzymes. For the efficient delivery of peptides and proteins by non-parenteral route, novel concepts are needed to overcome significant enzymatic and diffusion barriers. One of the strategies to improve protein and peptide absorption is delivery through Nano structured delivery carriers. The main aim is to focus on various routes and approaches for delivery of peptide and protein drugs.

PU-22

A Review On: Ethosomes A Recent Vesicle Of Transdermal Drug Delivery

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ABSTRACT

Transdermal drug delivery, self-contained, discrete dosage forms which, when applied to intact skin, deliver the drug through the skin at controlled rate to systemic circulation. Ethosomes, non-invasive delivery carriers thatenable drugs to reach deep into the skin layeror the systemic circulation, made up of phospholipids, high concentration of ethanol & water. Ethosomes are soft, malleable vesicles tailored for enhanced delivery of active agents. Ethosomes have higher penetration rate, through the skin as compared to liposomes hence, those can be used widely in place of liposomes. Permeability of ethosomes widely increased due to its ethanolic content. Ethanol increases the cell membrane lipid fluidity which result in increased skin penetration of ethosomes. Ethosomes provide enhancing patient compliance, improving drug efficacy& comfort and reducing total cost of treatment. Enhanced delivery of bioactive molecules through the skin and cellular membranes by means of an ethosomal transporter opens numerous confronts and prospects for the research and future development of novel improved therapies.

PU-23

Oral Sustained Release Tablets: An Overview With A Special Emphasis On Matrix Tablet

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ABSTRACT

Among the various routes of drug delivery oral route is most preferred route. But conventional dosage form offers few limitations which could be resolved by modifying the existing dosage form. Sustained and controlled drug delivery system helps in maintenance of constant plasma

drug concentration and retards the release rate of drug thereby extending the duration of action. There are various formulation strategies for sustained release tablets among which matrix tablet serves as an important tool. Hence the problem like poor patient compliance, multiple dosing, see-saw fluctuations can be easily minimized. Matrix tablets can be formulated by either direct compression or wet granulation method by using a variety of hydrophilic or hydrophobic polymers. The rate of drug release from the matrix is primarily governed by rate and extent of water penetration, swelling of polymer, dissolution and diffusion of drug. Thus, sustained release matrix tablet can offer better patient compliance and could be quite helpful in treatment of chronic diseases. The present article concentrates on oral sustained release tablets with a special emphasis on matrix tablet.

PU-24

A Comprehensive Review on: Liposomes

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ABSTRACT

This review article is intended to provide an overview of liposomes as novel vesicular drug delivery system.
It has focused on the structure, components, advantages, disadvantages, mechanismof liposome formation, method of preparation, characterization, stability and application of liposomes. Liposomes is a spherical vesicle with a membrane composed of a phospholipid bilayer used to deliver drug or genetic material into a cell. Liposome are very useful because they act as a carrier for a variety of drugs, having a potential therapeutic action or other properties. Liposome is colloidal carriers, having a size range of 0.01-5.0µm in diameter.

PU-25

Gastro retentive drug delivery system: Formulation, development and evaluation of Famotidine

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ABSTRACT

The objective of the study is to prolong the gastric residence time, increase drug bioavailability and alsoto target the gastric ulcer for local drug action. A floating drug delivery system of famotidine was developed using hydroxy propyl methyl cellulose K4M and Chitosan in various ratios. The tablets were prepared by direct compression. The formulated tablets were

evaluated for weight variation, hardness, friability, swelling index, floating lag time, total floating time and duration of buoyancy, buoyancy lag time. The prepared tablets exhibit satisfactory physical characteristics. All formulations showed goodin vitro buoyancy. The results of the invitro release studies show that the formulation remain buoyant for more than 12hrs. Finally, the tablet formulation was found to be economical and will overcome the draw backs associated with the drug during its absorption.

PU-26

NFIT – A Novel Drug Delivery System

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ABSTRACT

Needle free injection technology (NFIT)is an extremely broad concept which include a wide range of drug delivery systems that drive drugs through the skin using any of the forces as Lorentz, Shock waves, pressure by gas or electrophoresis which propels the drug through the skin, virtually nullifying the use of hypodermic needle. This technology is not only touted to be beneficial for the pharma industry but developing world too find it highly useful in mass immunization programmes, bypassing the chances of needle stick injuries and avoiding other complications including those arising due to multiple use of single needle. The NFIT devices can be classified based on their working, type of load, mechanism of drug delivery and site of delivery. To administer a stable, safe and an effective dose through NFIT, the sterility, shelf life and viscosity of drug are the main components which should be taken care of. Technically superior needle-free injection systems are able to administer highly viscous drug products which cannot be administered by traditional needle and syringe systems, further adding to the usefulness of the technology. Larger investment has been made in developing this technology with several devices already being available in the market post FDA clearance and a great market worldwide.

PU-27

Transdermal Patches- A Painless Approach For Controlled And Sustained Drug Release

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ABSTRACT

Transdermal patch is one of the most trending approaches for controlled drug delivery which

delivers predetermined rate of drug to systemic circulation through skin. These patches are made by combining a number of layers like a backing membrane, a thin liner, drug membrane & adhesive layer together to provide controlled release and better patient compliance. Testing of all these layers is done for checking quality, integrity & stability of a transdermal patch. For example - Adhesive properties of patch is checked by performing peel adhesion test, probe tack test, shear adhesion test and for physicochemical properties-weight uniformity, folding endurance, moisture uptake, thickness test are performed. In vitro dissolution studies & in vivo evaluation is also done for quality control purposes. These patches offer numerous benefits like zero first pass metabolism, non- invasion, no pain during administration, controlled and sustained release as well as reduced side effects as drug administration can be withdrawn at any moment. Some commonly used transdermal patches are nicotine for tobacco smoking cessation, nitroglycerin in angina pectoris, scopolamine for motion sickness, clonidine for hypertension, selegiline for depression, contraceptive patches etc.

PU-28

Formulation Development and Evaluation of Mouth Dissolving Tablets of Loratadine

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ABSTRACT

The objective of the study is to overcome the problems of swallowing and provides a quick onset of action. The purpose of this study was to formulate and evaluate mouth dissolving tablets of loratadine with a naturalsuper disintegrating agentTamarind seeds. Tablets were prepared by direct compression technique. The granules were evaluated for angle of repose, bulk density, tapped density, bulkiness, compressibility index. The tablets were evaluated for hardness, thickness, uniformity of weight, friability, wetting time, water absorption ratio, disintegration time and drug content. In vitro release studies were performed using USP-II (paddle method) in 900ml of pH 1.2 at 50rpm. The physical properties of the prepared tablets did not show any significant variations and were found to have good physical integrity.

PU-29

Fast Dissolving Oral Films of Mint

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ABSTRACT

Orally fast dissolving films (OFDFs) are newly launched formulation in the market. Compare

to other dosage form such as orally disintegrating tablets it is convenient and easy to use. This technology is developed in last few years in oral care markets in the form of breath strips and became a novel and widely accepted form by consumers so large no of pharmaceutical industries are interested in OFDFs. It is a type of delivery system which is prepared using hydrophilic polymers. When thin film is keep on Tongue disintegrate and dissolve in very less time without intake of water. The mint OFDFs for rendering the mouth cavity pleasantly tasteful and freshening the breath. The film is adapted to be a long-lasting, soluble aromatic mint which is activated by saliva flow there over in order to freshness the breath of the user for an extended period of time. Oral film made from polymer, humectants, plasticizers, sweetening agents, opacifier, flavoring agent and solvent. The final formulations are evaluated on the flowing bases Thickness, Dryness/tack test, Tensile strength, Folding endurance. The film was smooth, tenstile strength was good and the cooling and flavoring property was found acceptable, organoleptic evaluation was done by 15 volunteers.

PU-30

Spider Silk for drug delivery

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ABSTRACT

A fibrous protein obtained from silk of spider which acts as inert carrier. Spider silk is strong, biocompatible and biodegradable substance .The inner core of silk. Silk fibroin, is a biomaterial officially recognized by Food and Drug Administration of America (FDA) for human application. Silk proteins act as bioactive natural carrier. Spider webs are rich in vit.k which can be effective in clotting of the blood and helps to stop the bleeding. Modified spider silk protein EMS2 prepared by modification of MS2 (silk monomer) mixed with glutamic acid. Loading efficacy and release rate makes silk protein spheres as good choice to deliver neutral etoposides. Silk fibre based drug on structure modification and chemical conjugation act as a better and enhanced method for Targeted drug delivery. Along with this the minor ampullate silk is use in making bandages, surgical threads. The bandages do not cause allergic reaction, no inflammation in people when used. Moreover, this method can be used for dressing purpose in case of diabetic ulcer for slow healing of wound.

PU-31

Gastroretentive Drug Delivery Systems for Eradication of *Helicobacter Pylori*

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ABSTRACT

Helicobacter pylori is one of the most common bacterium for gastric infection. It can resides over mucous membrane of stomach and associated with various gastrointestinal tract ailments including peptic ulcer, gastric lymphoma, acute chronic gastritis etc. Conventional oral formulations have been investigated for the treatment of *H. pylori* infection. However, owing to various constraints as complicated dosing regimens, bacterial resistance, short gastric residence time etc., conventional delivery could not eradicate *H. pylori* infection in an efficient manner. For effective eradication of *Helicobacter pylori*, gastroretentive technology is considered as one of the potential strategy. This approach exhibit prolonged residence time of dosage form into the stomach, enhanced bioavailability along with improved treatment outcome. Several approaches of gastroretentive systems includes floating systems, expandable or swellable systems, bioadhesive systems, superporous hydrogels, magnetic systems etc. The present paper comprises research considerations of *Helicobacter pylori* and its associated disorders, eradication through gastroretentive techniques along with various significant advantages of gastroretentive systems.

PU-32

Pillo- The Personal Pharmacy

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ABSTRACT

Robotics, the single contrivance that has the feasibility to make our lives exceedingly fast and easy. As it is such an early technology of which new manipulations are being introduced every day. But a recent development in the Robot world is ''Pillo'', a robot who turns itself into your personal pharmacy. Not only does Pillo take care of your pharmaceutical needs, it also takes care of whole family health. Pillo is an indigogo found robot that is 13 inches tall and holds up to 250 medium sized pills in tamper- proof containers. Pillo uses the facial and voice recognition system in order to dispense the right medicines and vitamins. Pillo has the ability to keep track of every ones schedule and even send notifications if they forgot their medicines. It can also answer health related questions and order more pills if you are running low. Part of Pillo's Artificial Intelligence tells it to lock out anyone trying to access the medication, only giving up the goods if a user ravine the robot's voice and face recognition.

PU-33

Artificial Intellegence In Drug Treatment

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ABSTRACT

The most common applications of artificial intelligence (AI) in drug treatment have to do with matching patients to their optimal drug or combination of drugs, predicting drug-target or drug-drug interactions, and optimizing treatment protocols. AI outlines some of the recently developed AI methods aiding the drug treatment and administration process. Selection of the best drug(s) for a patient typically requires the integration of patient data, such as genetics or proteomics, with drug data, like compound chemical descriptors, to score the therapeutic efficacy of drugs. The prediction of drug interactions often relies on similarity metrics, assuming that drugs with similar structures or targets will have comparable behavior or may interfere with each other. Optimizing the dosage schedule for administration of drugs is performed using mathematical models to interpret pharmacokinetic and pharmacodynamic data. The recently developed and powerful models for each of these tasks are addressed, explained, and analyzed. Medical artificial intelligence (AI) mainly uses computer techniques to perform clinical diagnoses and suggest treatments. AI has the capability of detecting meaningful relationships in a data set and has been widely used in many clinical situations to diagnose, treat, and predict the results.AI would have a low error rate compared to humans.

PU-34

A review on study of Preparation and Characterization of Nanoparticles

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ABSTRACT

Nanoparticles can be defined as objects ranging in size from 1-100 nm that due to their size may differ from the bulk material. Nanoparticles are sub-nanosized colloidal structures composed of synthetic or semi-synthetic polymers. Nanoparticles can be synthesized chemically or biologically. Due to their incredible properties, nanoparticles have become significant in many fields in recent years such as energy, health care, environment, agriculture etc. Different methods utilized for the preparation of nanoparticles are ionic gelation method, nanoprecipitation method etc. Nanoparticles can be characterized by SEM, TEM, XRD, etc. Nanoparticles technologies have great potentials, being able to convert poorly soluble, poorly absorbed and labile biologically active substance into promising deliverable substances. There are many types of nanoparticles such as silver, gold, alloy etc. Nanoparticles are being used for diverse purposes, from medical treatments, using in various branches of industry production

such as solar and oxide fuel batteries for energy storage, to wide incorporation into diverse materials of everyday use such as cosmetics or clothes. This study gives a brief description about preparation and characterization of nanoparticles.

PU-35

Nanocarrier Systems for Targeted Drug Delivery Against Cancer

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ABSTRACT

Cancer is one of the most serious health concerns in 21st century whose prevalence is beyond boundaries and can affect any organ of human beings. The conventional chemotherapeutic treatment strategies lack specificity to tumours and are associated with toxic effects on immune system and other organ systems. In the past decades, there has been a continuous progress in the development of smart nanocarrier systems for target specific delivery of drugs against variety of tumours including intracellular gene-specific targeting. These nanocarriers are able to recognize the tumour cells and deliver the therapeutic agent in fixed proportions without causing any harm to healthy cells. Nanosystems have modified physicochemical properties, improved bioavailability and long retention in blood which enhances their potency. A huge number of nanocarrier based formulations have been developed and are in clinical trials. Nanocarrier systems include polymeric micelles, liposomes, dendrimers, carbon nanotubes, nanorods, nanoemulsions, phytosomes, magnetic nanoparticles, nanospheres etc. Recent advancements in nanocarrier systems include mesoporous silica nanoparticles (MSNs), metal organic frame works and quantum dots.

PU-36

A Review on Sustained Release Micro Pellets Followed Zero-Order Release Kinetic

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ABSTRACT

Oral drug delivery is the most preferred route for administration of various drugs. The majority of oral sustained release systems rely on dissolution, diffusion or a combination of both mechanisms, to generate slow release of drug to the gastrointestinal. Sustained release products provide advantage over conventional dosage form by optimizing bio pharmaceutics, pharmacokinetics and pharmacokinetics properties of drug. Micro pellet formulations in order to attain the instantaneous release of the active medicament in the gastrointestinal tract which

would enhance gastric residence time with increased absorption from the stomach & intestine to produce sustained pharmacological responses along with reduced dosing frequency and ultimately the bioavailability would also increase. Thus sustained release formulation provides important way to decrease the side effect of drug by preventing the fluctuation of the therapeutic concentration of the drug in the body. Sustained Release is also providing promising way to decrease the side effect of drug by preventing the fluctuation of the therapeutic concentration of the drug in the body. The main aim of the present review work is to develop and characterize micro pellets of for sustained release, which after oral administration could prolong the therapeutic action and increase the bioavailability of the drug.

PU-37

Formulation and Evaluation of Self Micro Emulsifying Drug Delivery System:- an overview

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ABSTRACT

Self Micro Emulsifying Drug Delivery System (SMEEDS) is calcium channel blocker. SMEEDS works by blocking the flow of calcium into the muscle cells surrounding the arteries that supply blood to the heart as well as other arteries of the body. Oil, surfactant and co-surfactant at appropriate weight ratios were selected for SMEEDS formulation. SMEEDS formulation were prepared by using oily phase and surfactant and co-surfactant. Accurately weighed particular drug was placed in a glass vial and oil, surfactant, co-surfactant were added. After adding all the components the mixture was sonicated for a particular time. Then mixture (SMEDDS) was stored at room temperature for further use. Solubility of drug such as nifedipine in aqueous was low but in SMEDDS formulation this was found to be high hence solubility of drugs increases via SMEDDS formulation. From *in vitro* dissolution study it was proved that SMEDDS formulation releases drug at faster rate, thus the objective of increase solubility and hence the better dissolution rate for uniform bioavailability via SMEDDS formulation of nifedipine was successfully achieved.

PU-38

Nano-Niosomes as Nanoscale Drug Delivery Systems (Niosomes)

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ABSTRACT

Niosomes are novel drugs delivary system,in which the medication is encapsulated in a vesicle. The vesicle is composed of a bilayer of non-ionic surface active agents and hence the name nisomes. The size of niosomes is very small lies in the nanometric scale. Niosomes have recently been shown to greatly increased transdermal drug delivery and also can be used in targeted drug delivery. Niosomes are such hydrated vesicular systems containing non-ionic surfactants along with cholesterol or other lipid delivering drug to targeted site which are nontoxic requiring less production cost, stable over a longer period of time in different conditions to overcomes drawbacks of liposomes. Niosomes are osmotically active, chemically stable and have long storage time compared to liposomes. Niosomes are very promising carriers for the delivery of numerous pharmacological and diagnostic agents. Numbers of studies have been performed with different types of niosomes in delivery of the anticancer agents, anti-inflammatory agents, anti-infective agents and so forth. Thus, niosomes present itself as promising tools in commercially available therapeutics.

PU-39

Pharmaceutical Innovations: A Novel Approach

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ABSTRACT

The term Innovation is generally refers to the creation or improvement of the products, technologies or ideas. Innovation is distinguished from Enovation in that innovation generally signifies a substantial change or difference versus more incremental changes. The four stages of innovation- imagine, integrate, isolate and illuminate combined with the four perspective of innovation- incremental, insightful, inventive and ingenious along the path to growth. The innovation process in Pharmaceutical industry (PI) is highly 'Patient' focused and is supplemented by the 'Newness' mind set which originates from the 'Physicians' and pervades throughout the entire system including patient. The main objectives of pharmaceutical innovation are: How to ensure development of valued products in the future? Why so many drugs and products with no therapeutic advantage relative to existing treatments? Is it the case that price regulation by definition has a negative impact on future innovation? There are various methods for pharmaceutical innovation such as the problem situation (PS) unstructured, the problem situation (PS) expressed, Root definition of relevant systems, Conceptual models (Formal systems concept and Other systems thinking), Feasible and desirable changes identified, Action to improve the problem situation(PS). So, as Pharmaceutical industries (PI) are in rapidly developing states, new innovative plans are necessary to approach the final goal of development. But due to unsuccessful result of management and clinical research, Pharmaceutical industry (PI) is failing to innovate at a rate

which is needed for health of the general public.

PU-40

Recent Advances In Pulmonary Drug Delivery System

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ABSTRACT

Lungs has served as a route of drug administration for thousand years. Now a day pulmonary drug delivery remains prefered route for administration of various drugs. It is used to treat conditions of airways, delivering locally acting drugs directly to their site action. The drug which are administered by pulmonary route are not only for lungs delivery but it goes to systemic circulations and produce effects throughout the body where it is desired. Pulmonary applications has been demonstrated in animal as well humans. In the treatment of obstructive respiratory disease, pulmonary delivery can minimize systemic side effects, provide rapid and minimize the required dose since the drug is delivered directly to the conducting zone of lungs. It is needle free several techniques has been developed in the recent past, to improve quality of pulmonary drug delivery system without affecting their integrity. Pulmonary drug delivery is an important research area which impacts the treatment of ilness including asthma chronic obstructive pulmonary disease and various other disease. This abstract is focusing on technologies, mechanism of drug deposition, devices, carrier, and recent advances used in pulmonary drug delivery system.

PU-41

Nanosponges: A promising approach of Novel Drug Delivery System

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ABSTRACT

A nanosponge is an emerging technology and precisely controls the release rate of controlled drug delivery. Nanosponges are tiny mesh- like structures with a size less than 1 µm. Due to their porous structure and small size. They can easily bind to drugs which are poorly- soluble leading to better bioavailability and solubility of such drugs. A board range of drugs including both hydrophilic and lipophilic can be easily loaded into nanosponges. These minute sponges can circulate until they reach the definite target site, attach themselves to the surface and initiate the discharge of drugs in a predictable and controlled way. Nanosponges are solid in character and can be developed as one of the most capable aspects in the field of

pharmaceuticals. Nanosponges help to reduce the drug toxicity. Nanosponges can also serve as an effective carrier for enzyme, protein, vaccine and antibodies.

PU-42

Formulation And Evaluation Of Pantoprazol

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ABSTRACT

Gastro-oesophageal reflux disease is a chronic condition of mucosal damage. GERD is caused by the regurgitation of stomach acid into the esophagus. Pantoprazole is a proton pump inhibitor which acts against GERD. Solvent casting method was used for the preparation of patches. Polyethylene glycol and glycerol were used as plasticizers. Preformulation studies were performed. FT-IR analysis showed the drug and polymers were compatible. In vitro dissolution studies were done. It was seen that the formulation F4 showed maximum drug release (97.42%). Surface pH of the formulated patches was found to be around 7. Direct compression is economic compare to wet granulation since it requires fewer unit operations.This means less equipment, lower power consumption, less space, less time and less labour leading to reduced production cost of tablets. The prepared tablets were evaluated for hardness, weight variation, friability and drug content uniformity and it was found that the results comply with official standards. The in vitro release was studied using acidic buffer pH 1.2 and phosphate buffer pH 6.8. This stumulate us to formulate and evaluate pantoprazole as a enteric coated tablet.

PU-43

Design and Evaluation of Patches for Transdermal Delivery of Losartan Potassium

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ABSTRACT

The main aim of this research was to formulate and evaluate Matrix type Transdermal drug delivery system (T.D.D.S.) containing Losartan with different ratios of Hydrophobic, Combination of Hydrophobic: Hydrophilic, Hydrophilic Polymeric Concentration by the Solvent evaporation technique. The prepared patched showed satisfactory physico-chemical characterstics of folding endurance, weight uniformity, thickness and moisture absorption for stability of the formulation and drug content were uniform in all patches. The present work comprises the formulation and evaluation of losartan potassium with a view to developing and

preparing a losartan potassium releasing system for transdermal applications. The purpose of this research was to develope matrix type transdermal therapeutic system by the solvent evaporation technique. In different formulation on the basis of present study formulation F5 show satisfactory drug release pattern. The formulation containing hydrophobic polymers showed a satisfactory drug release pattern compared to the combination of hydrophobic:hydrophilic polymers and the hydrophilic polymers. Therefore, the present study reveals that formulation of hydrophilic drug [losartan potassium] with hydrophobic polymers exhibit good release properties as compared to that of hydrophilic polymers and combination of both hydrophobic and hydrophilic polymers.

PU-44

Robotic Surgery

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ABSTRACT

INTRODUCTION- Robotic surgery is a type of minimally invasive surgery."Minmally invasive" means that instead of operating on patients through large incisions, we use miniaturized surgical instruments that fit through a series of quarter-inch incisions.
METHODS- Robotic surgery is performed by using the surgical robots:
1.Da Vinci Surgical System
2.ZEUS robotic surgical system
3.AESOP robotic system
DISCUSSION- The first generation of surgical robots are already being installed in a member of operating rooms around the world. The machine still require a human surgeon to operate them & input instructions.
CONCLUSION- Robotic surgery is an information system with arms. The robots are actually a more accurate then human beings.
RESULT- Robotic surgery is a smart surgical method which eliminates the tissue trauma. It is accurate in dealing surgical parameters.

PU-45

Formulation Of Nanoemulsion Of Anti Migraine Drug

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ABSTRACT

Migraine is a disease affecting individuals worldwide. Inspite of the fact that many formulations are available for the treatment of the disease, all of them suffer from certain disadvantages. In order to overcome the disadvantages of the other formulated dosage forms, nanoemulsions of antimigraine drugs were formulated. The aqueous titration method followed by ultrasonication was employed for the formulation of nanoemulsion. Based on solubility studies, Isopropyl Myristate, Kolliphor HS 15 (Solutol) and PEG 400 were selected as oil phase, surfactant and cosurfactant for the formulation of drug loaded nanoemulsions. Pseudoternary phase diagrams were constructed to identify nanoemulsion area. Placebo nanoemulsions were selected from each phase diagram and subjected to thermodynamic stability studies. In those formulations which passed the thermodynamic stability studies, drug was loaded. The prepared drug loaded nanoemulsions were further subjected to thermodynamic studies to select the stable formulations. The optimized formulation exhibited satisfactory percentage transmittance, Viscosity and Refractive index. Nanoemulsion formulation was developed to a satisfactory level in terms of appropriate viscosity, lower surfactant concentration and higher solubility.

PU-46

A Review On Floating Microsphere For Antiulcer Activity

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ABSTRACT

A large amount of the floating have an inherent problem of high changeability in the GI transit time, invariably disturbing the bioavailability of drug. An attempt has been prepared to extend floating drug delivery system for improving the drug bioavailability by prolongation of gastric residence time in stomach. The floating microspheres were arranged using polymer Eudragit L-100 by solvent evaporation technique. The prepared microspheres were characterize for drug loading, entrapment, encapsulation efficiency, particle size distribution, surface morphology, differential scanning calorimetric, test for buoyancy, in-vitro release and in-vivo antiulcer studies. The results showed an increased drug loading, encapsulation and entrapment efficiency. The thermo gram of the DSC showed that the drug was encapsulated in amorphous form and SEM studies revealed the discrete, spherical shaped spheres with rough surface and presence of holes on floating microspheres due high entrapment of PEG which are responsible for drug release and floating ability. The sizes of spheres were found between 20-120 micron which exhibited prolonged release (In-vitro > 8 h) and remained buoyant for > 10 h. The mean particle size increased and the drug release rate decreased at higher Eudragit L-100 polymer concentration. The in-vivo results showed significant antiulcer property of floating microspheres.

PU-47

Silver Nanoparticles:A Good pharmaceutical dosage form for better therapeutic efficacy

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ABSTARCT

Nanoparticles are tiny materials having size ranges from 1 to 100 nm. They can be classified into different classes based on their properties, shapes or sizes. The different groups include metal nanoparticles, ceramic nanoparticles, and polymeric nanoparticles. Nanoparticles possess unique physical and chemical properties due to their high surface area and nanoscale size. Use of silver and silver salts is as old as human civilization but the fabrication of silver nanoparticles (Ag NPs) has only recently been recognized. They have been specifically used in agriculture and medicine as antibacterial, antifungal and antioxidants. It has been demonstrated that Ag Nanoparticles arrest the growth and multiplication of many bacteria such as *Bacillus cereus, Staphylococcus, Escherichia coli, Klebsiella pneumonia* and fungus *Candida albicans* by binding Ag/Ag^{+} with the biomolecules present in the microbial cells. It has been suggested that Ag nanoparticles produce reactive oxygen species and free radicals which cause apoptosis leading to cell death preventing their replication. Since Ag nanoparticles are smaller than the microorganisms, they diffuse into cell and rupture the cell wall. It has also been shown that smaller nanoparticles are more toxic than the bigger ones.

PU-48

Design and Development of Zidovudine Solid Lipid Nanoparticles for Controlled Drug Delivery

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ABSTRACT

Zidovudine is one of the chief nucleoside analogue and reverse inhibitor licensed for HIV infection which is placed along with a group of retroviruses. The present research study on Zidovudine solid dosage form surveyed the feasibility utilizing solid lipid nanoparticles (SLNs) for controlled drug delivery of zidovudine embracing glyceryl behenate as lipidic material, tween 80 as a stabilizer and blend of sodium chelate with poloxamer as surfactant. The SLNs were prepared utilizing high pressure homogenization followed by ultrasonication method. The prepared SLNs were characterized by particle size analysis, polydispersity index, zeta potential, DSC, TEM, IR spectroscopy, and X-ray diffractometry. Narrow size

distribution of the particles was marked having polydispersity index values under 0.8. The high zeta potential of the different SLN formulations additionally showed their physical stability. Differential scanning calorimetry and powder X-ray diffraction showed decline in crystallinity of drug in the nanoparticle formulation. *In vitro* release study showed sustained release for upto 12 hours in the SLN formulations prepared. The current study results revealed that zidovudine SLN formulation prepared by high pressure homogenization followed by ultrasonication is a suitable method for controlled drug delivery system.

PU-49

Development and characterization of aerosolized rifampicin lipospheres for the effective management of tuberculosis

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ABSTRACT

Tuberculosis (TB) remains a major global health problem, responsible for ill health among millions of people each year. TB ranks as the second leading cause of death from an infectious disease worldwide, after the human immunodeficiency virus (HIV). Rifampicin (RMP) is a first-line drug currently used for treatment of Mycobacterium tuberculosis infection in adults. Poor bioavailability of RMP due to low aqueous solubility and instability is a major complication[2]. Phospholipid based approach (lipospheres) have been employed to address the said concerns using spray drying technology and evaluated through pulmonary route of administration. Further, solid state characterization and powder flow properties of RMP lipospheres were assessed. *In-vitro* aerosol performance using cascade impactor demonstrated the higher deposition at 3, 4 and 5 stages which simulates the trachea-primary bronchus, secondary and terminal bronchus of the human lung, respectively. Cell culture studies displayed improved efficacy in H37Rv strain. The nebulization of rifampicin lipospheres resulted in over 800 % increase in relative pulmonary deposition *vis-a-vis* pure drug. The pulmokinetic studies of lipospheres exhibited significantly higher C_{max} (825.3±76 vs. 611.23 ±15 µg per gram of lung tissue), delayed T_{max} (4±1 vs.2± 0.5 h), prolonged $T_{1/2}$ (64.1±12 vs.12.62±1 h), MRT (36.80±2 vs. 6.93±0.5 h) and enhanced $AUC_{0-\infty}$ (30914.33±113 vs. 3849.40±20 µg h/L) *vis-a-vis* pure RMP. Moreover, biodistribution studies revealed lower RMP concentration in the in non targeted tissues following inhalation of lipospheres. Hence, the current investigation demonstrates the potential of lipospheres as a potent therapeutic intervention for TB treatment with improved biopharmaceutical attributes.

PU-50

Improved oral bioavailability and therapeutic potential of antitubercular drug using

phospholipid –based drug delivery

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ABSTRACT

To enhance the oral bioavailability of rifampicin (RMP), the newly emerging phospholipid complexation technique was employed. Rifampicin-phospholipid complex (RMP-PC) was prepared by solvent-evaporation method. Solid state characterization analysis revealed the formation of phospholipid complex. In comparison with the physical mixture and RMP, solubility studies indicated an enhancement in the aqueous solubility of RMP-PC. Stability studies of RMP-PC in presence of isoniazid showed a remarkable improvement of the stability of the phospholipid complex in comparison to free RMP. The protective effect of the RMP-PC was evaluated by biochemical analysis and histology examination of the liver in the test animals. Moreover, RMP-PC exhibited enhanced *in-vitro* efficacy in MTB H37Rv strain. The biochemical analysis included aspartate transaminase (AST), alanine transaminase (ALT), alkaline phosphatase (ALP), albumin content, total protein, cholesterol and lipid peroxidation (MDA). Histology of the liver sections further confirmed the reduction in hepatic injury. These findings suggest that the mechanism of protection elicited by RMP-PC, involves the hepatoprotective and antioxidant properties of phospholipid. Oral bioavailability of RMP-PC was evaluated in Sprague-Dawley (SD) rats and plasma rifampicin estimated by LCMS. RMP-PC exhibited higher peak plasma concentration (54.3 vs. 48.5 µg/mL), increased $AUC_{0-\infty}$ (472.4 vs. 147.71 5.812±0.49 µg h/mL), increased $T_{1/2}$ (8.3 vs. 1.5h) when compared to free RMP implying improved bioavailability of the drug. This enhancement can be attributed to the improvement of the aqueous solubility of rifampicin-phospholipid complex. Hence, phospholipid complexation holds a promising potential for improved oral bioavailability and therapeutic potential of poorly water soluble drugs.

PU-51

Nanoparticles

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ABSTRACT

Nanoparticles represent a promising drug delivery system of controlled and targeted drug release. They are specially designed to release the drug in the vicinity of target tissue. Nanoparticles made up of natural, hydrophilic carriers like sodium alginate may have the advantage of producing a stearic hindrance in the systemic circulation. Hence, sodium alginate

nanospheres containing methotrexate were prepared by controlled gellification method. The average particle size was found to be 452 nm. The carrier capacity of sodium alginate nanospheres with respect to methotrexate was determined by the drug to polymer ratio, and five different batches of drug loaded nanospheres containing various concentrations of drug were subjected to in vitro analysis by dialysis method. The study on the drug to polymer ratio showed a linear relationship between the concentration of drug and percentage drug loading. The effect of different concentration of Brij-35 on the drug loading was also checked through the batch with lowest drug loading capacity. The in vitro release behaviour from all the drug-loaded batch was found to be pseudo zero order. The ideal batch of nanospheres with highest drug loading and satisfactory in vitro release profile was subjected to stability studies for 60 days at 4o. The stability of drug loaded nanospheres was checked in terms of percentage drug leakage into the storage medium. It has been observed that, there was no much drug leakage into the storage media, when the nanospheres were stored for 1 month. The comparative in vitro cytotoxicity study between drug loaded nanospheres and free drug was carried out using HEP-2 cell lines. The drug bound to nanospheres produced a comparatively better cytotoxic effects at all concentration than the free drug.

PU-52

Quality Control Analysis Of Oral Dosage Forms

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ABSTRACT

Tablet and capsules both are intended for oral route of administrations. The most common form of the oral route of administration which comes on mind are the tablets which have the most substantial and significant place among the entire pharmaceutical formulations. Tablet and capsules are the dosage forms that are manufactured for the pharmaceutical and dietary supplements, which are manufactured under regulated terms and laws regulations are imposed in the manufacturing process to ensure the quality, efficacy and safety of the tablet and capsules. During manufacturing production packaging testing are the main phases of pharmaceutical products in every pharmaceutical industry. The most popular of the oral dosage forms are the tablets which are easily administered by patient and many people rely on these. In advance quality control analysis is to regularly check in each step to produced a good quality of the product. There are many dosage forms which are available in the market in many brands. The testing procedure induce physical, chemical and biological tests for both the tablets and capsules.These are done with standard quality control procedure under the Pharmacopoeia of the respective countries.

PU-53

Therapeutic efficacy of Zinc Oxide Nanoparticles in Diabetes: An overview

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ABSTRACT

Nanoparticles (NPs) is an important field of modern research dealing with synthesis, strategy & manipulation of particles structure ranging from approximately 1 to 100 nm in size. Nanoparticles can serve as "magic bullet". The use of nanoparticles in medicine is an attractive proposition. In the present study, zinc oxide and silver nanoparticles were evaluated for their antidiabetic activity. Zinc is a trace element and abundantly found mineral in all human tissues and tissue fluids. Zinc is well known to keep the structural integrity of insulin and has an active role in the secretion of insulin from pancreatic cells. It also participates in insulin synthesis, storage, and secretion. Therefore, ZnO NPs as a novel agent in order for zinc delivery have been developed and evaluated for their antidiabetic potential. The antidiabetic activity was assessed with the help of α-amylase and α-glucosidase inhibition assay with murine pancreatic and small intestinal extracts. Oral administration of zinc oxide nanoparticles resulted in significant antidiabetic effects--that is, improved glucose tolerance, higher serum insulin (70%), reduced blood glucose (29%), reduced nonesterified fatty acids (40%) and reduced triglycerides (48%). Nanoparticles were systemically absorbed resulting in elevated zinc levels in the liver, adipose tissue and pancreas. This review concentrated on the therapeutic efficacy of zinc oxide nanoparticles in diabetes.

PU-54

New Method For Bioavailability Enhancement: Floating Spheroids

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ABSTRACT

Pharmaceutical research and development are increasingly focusing on delivery systems which enhance desirable therapeutic objectives while minimizing side effects. Recent trends indicate that multiparticulate drug delivery systems (MDDS) are especially suitable for achieving controlled and delayed release oral formulations with low risk of dose dumping. These oral MDDS i.e. spheroids offer biopharmaceutical advantages with respect to predictable and even distribution and transportation in the gastro-intestinal tract. Spheronization is a rapid and

flexible process where pharmaceutical powder are made into small spheres, or spheroids of diameter ranging from about 0.5 mm to 1mm and it is useful in order to develop a site-specific drug delivery system. Spheroids of different release rate can be incorporated into single dose and also maintain the therapeutic level of the dose in body. Floating spheroids (FS) are a type of spheroids, which provide enhanced retention along with increased diffusion of drug. FS are of great interest to pharmaceutical industry for a variety of the reasons. FS not only offer flexibility in dosage design and development, but are also utilized to improve safety and efficacy of many bioactive agents.

PU-55

Self Healing Hydrogel

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ABSTRACT

Hydrogels, crosslinked polymer networks with rheological solid-like properties and high water contents, are promising materials for preclinical or clinical trials. Self healing hydrogels (SHHG) have emerged as promising replacements for the various fragile hydrogels currently used in biomedical applications. The ability to repair all the structural damages and recover the real organ functions is the beauty of SHHG. Additionally, these can be used as carrier for drug delivery, 3D printing ink because of their shear-thinning properties. Therefore, self-healing hydrogels as biomedical materials have received a rapidly growing attention in recent years. Here we are reviewing various synthesis methods and repair mechanisms of SHHG. The biomedical applications of SHHG are also described, with a focus on the potential therapeutic applications verified through *in vivo* experiments. The trends indicate that SHHG with automatically reversible crosslinks may be further designed and developed for more advanced biomedical applications in the future.

PU-56

Enhancement Of Oral Bioavailability By Using Fast Dissolving Tablet

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ABSTRACT

Recent developments in technology have presented viable dosage alternatives for patients who may have difficulty swallowing tablets or liquids. Recent developments in the technology have prompted scientists to develop orally fast disintegrating tablets (FDTs) with improved patient

compliance and convenience. FDTs are solid unit dosage forms, which disintegrate or dissolve rapidly in the mouth without chewing and water. Such tablets provide several advantages particularly for pediatric and geriatric populations. This review deals with the recent advances on the FDTs and detailed information regarding every aspect of FDTs, such as various excipient, evaluation tests, marketed formulations, and drugs explored in this field. There is a clear opportunity for new enhanced oral products arising within this market segment. Approximately one-third of the population, primarily the geriatric and pediatric populations has swallowing difficulties resulting in poor compliance with oral tablet drug therapy which leads to reduced overall therapy effectiveness.

PU-57

Challenges And Oppurtunities For Oral Delivery Of Anticancer Drugs

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ABSTRACT

Traditionally, most of the anti cancer drugs were delivered by the intravenous route which provide maximum bioavailability, but leads to several side effects and requires a clinical or hospitalization and palliative treatment. For these reasons, oral anticancer drugs were considered. The significance of oral delivery in cancer therapeutics has been highlighted which principally includes improvement in quality of life of patients and reduce health care costs. However oral delivery of anti cancer drugs is a great challenge owing to their peculiar physicochemical properties and physiological barriers such as pre systemic metabolism and gastro intestinal instability. In recent past the growth of nanometric size drugs delivery systems has burst in to challenging innovations enabling real progresses to achieve oral delivery of anti cancer drugs. In the economical point of view the cost of intravenous route is dominant upon the oral route.

PU-58

Different Non Solvent Coating Technique For Tablets

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ABSTRACT

The present study deals with the different techniques employed for enhancement of drug release, drug stability and improved mechanical strength through solvent-free coating. Coating

is a most valuable part in the formulation of pharmaceutical dosage form to attain superior aesthetic quality like color, texture and taste masking, with a physical and chemical protection of dosage form. Most of the coating is applied by using aqueous or organic- based polymer solutions. Non solvent coating is an eco-friendly technique in which the coating substance is directly applied on the surface of solid dosage form without use of solvent. The different shortcoming such as expense for solvent, solvent exposure and solvent recovery etc can be overcome by using this technique. The various techniques used for non solvent coating are magnetic assisted impacting coating (MAIC), supercritical fluid spray coating, electrostatic coating, dry powder coating, hot melt coating and photo-curable coating. These techniques are more economical, easy to scale up, simple and safes.

PU-59

Transdermal delivery of Fenoprofen Calcium using Transfersomes

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ABSTRACT

The present work is done with the aim to formulate elastic liposomes of fenoprofen. As this drug is recommended in oral dose of 300-600 mg thrice or four times a day for treatment of pain and inflammation associated with osteoarthritis, rheumatoid arthritis and is further associated with side effects of gastric ulcer, bleeding and diarrhea, dizziness, dry mouth, nausea. So to overcome the side effect of oral route and large daily doses, we formulated the transfersomes/ elastic liposomes of fenoprofen calcium using topical/transdermal delivery. The transfersomal formulations were prepared by modified hand shaking method and characterized for various physiochemical parameters and *in vitro/ex vivo* drug release characteristics. Different batches of transfersomes were prepared using different surfactants i.e Span 20, Span 60 and Span 80 in two different ratios of PC : Surfactant. The optimized formulation showed mean vesicle size 3.8±0.05, percent entrapment efficiency 90.1±1.4 %, zeta potential -33mV, pH 7.4±0.03, vesicles size distribution 105 nm and PDI 0.224. The amount of percent cummulative drug release from optimized formulation was 57.9% which was higher as compared to the formulation and plain drug which gave the 38.62 % release. Hence from result it is concluded that transfersomes act as potential carriers of Fenoprofen Calcium for treatment of rheumatoid arthiritis and osteoarthritis. The formulation improves the patient compliance as it reduces the initial drug dose and decreases the GIT side effects associated with conventional drug therapy.

PU-60

Neuralink- A Brain- Machine Interface

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ABSTRACT

Neuralink, a future prospect of brain machine interface, promises future potential of providing help in clinical disorders like neuroprosthetic control of computer, robotic limbs and speech synthesizers. Though limited results in non- invasive method, there has been more precision in invasive one. The microelectrodes used have high biocompatibility, safety and longevity which requires practical surgical support and high density low power electronics. A multielectrode polymer probe was also developed as an alternative with a robotic approach, where large number of fine and flexible polymer probe are efficiently and independently inserted acrossmultiple brain regions. Miniaturized custom electronics allow long term implantations and online spike detection software. Thedevice contains arrays of flexible electrode threads with up to 3072 electrodes per array, distributed across 96 threads. To overcome a surgical limitation, the authors have built a neurosurgical robot that inserts 6 threads per minute with a micrometer spatial precision.Using this platform in freely moving rats, the authors report a spiking yield of up to 85.5%.

PU-61

Scope of Nanotechnology in Nutraceuticals

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ABSTRACT

Nanotechnology is one of the most interesting areas concerned with consumer products including electronics, cosmetics, household appliances, textiles, and food production as well as in medical products. Although the applications of nanoscale particles in therapeutic systems have been well documented and various systems have been designed for intelligent, modulated, and selective delivery of drugs to specific areas in the body to maximize drug action and minimize side effects, nano-techniques came recently in the industry of food. Various natural or synthetic polymer-based nanoparticulate systems and their conjugates are potentially available to the food industry; it includes protein, lipids, carbohydrates, or other nutraceuticals. Nutraceuticals are considered as the substance for the maintenance and improvement of human health acting against nutritionally induced acute and/or chronic diseases, promoting a higher quality of life. The use of this direct NP uptake, in particular for soluble but poorly absorbed components, is one of the most needed areas to be explored as

soon as possible, as well as the potential side effects of these NP carriers. To address this challenge, it is necessary to understand the chemical structure and properties of different nutraceuticals. Based on the scope of nanotechnology in nutraceuticals, there describes the potential role of nutraceutical delivery systems in the form of NPs.

PU-62

Microemulsion Gel As Future Perspective For The Treatment Of Impetigo

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ABSTRACT

Impetigo is a superficial, intraepidermal and contagious bacterial skin infection, predominantly caused by gram-positive bacteria e.g., *Staphylococcus aureus* and *Streptococcus pyogenes*. It is most prevalent among children 2-5 years of age and transmitted through direct contact. Bullous (large bullae filled with a clear fluid) and non-bullous (reddish, itchy sores) are different form of impetigo. Microemulsions (MEs) are thermodynamically stable, isotropic clear colloidal dispersion of oil, water, surfactant and co- surfactant. MEs possess high stability, ultra-low interfacial tension, enormous interface area, low viscosity and ease of preparation. Due to their high loading capacity, low skin irritability and augmented permeability they may alter the stratum corneum barrier, leading to enhanced bioavailability and extended shelf life. Different formulations such as ointments, creams and lotions comprising MEs may be used for the treatment of impetigo.

PU-63

Imiquimod Loaded Self Healing Metal Organic Gel For Treatment Of Skin Cancer

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ABSTRACT

Skin cancer are the most widely spread cancer in the present time in whole world. In Most of countries like USA, 70% of cases are come of basal cell carcinoma or squamous cell carcinoma due to exposure of skin to U.V radiations. Skin cancer are the term when the overgrowth of cells in skin may occur which may be melanoma or non melanoma. Various formulations such as microemulsion, ethosomes, nanogels, liposomes were investigated but exhibited some lacuna such as low solubility, poor penetration or structure imbalance. To overcome this self healing metal organic gel prepared for treatment of skin cancer.
Self healing gels (SHG) are the formulation having the capacity to repair the damage itself or

with the help of any external environmental changes. SHG perform their action with the help of external targeted things. SHG are design in such a way to release the healing agent slowly and recover the cell damage automatically. In the last years, study synthetic gels or hydrogels were more useful than natural hydrogels due to its long life service ,high ability of absorption of water and high strength of gel with well defined structure.

Metal organic gels (MOG) gain more attraction than the self healing hydrogels (SHHG). MOG are those types of gel which may show similar properties to aerogels or hydrogels but have ability to maintain the structure of gel or drug under reduced pressure at any temperature or PH which is not possible by aerogels or hydrogels. MOG possess are porous material having large surface area, versatile functionality and easy penetration. MOG exhibit sustained drug release in a controlled manner leads to metabolic protection of drug and maintain the structure throughout the release of drug. They help to release the drug slowly and give their effect for long duration.

PU-64

Novel lipidic formulation used in therapeutics of psoriasis

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ABSTRACT

Psoriasis is a chronic inflammatory skin disorder that may drastically impair the quality of life of a patient. Among the various modes of treatments for psoriasis, topical therapy is most commonly used in majority of patients. The topical formulations based on conventional excipients could serve the purpose only to a limited extent. With the appearance of newer biocompatible and biodegradable materials like phospholipids, and novel drug delivery technologies like liposomes, solid lipid nanoparticles (SLNs), microemulsions, and Nanoemulsions, the possibility to improve the efficacy and safety of the topical products has increased manifolds. Improved understanding of the dermal delivery aspectsand have been used in psoriasis, with promising results. Small and relatively narrow size distribution with novel carriers permits site specific delivery to the skin, with improved drug solubilization of hydrophobic drugs and bioavailability. The present review primarily focuses on conventional therapeutic strategy and recent advances in lipid-based nano-formulations of a variety of anti-psoriatic drugs. The review also traces related patents to exemplify the role of various nanoparticles in psoriasis treatment. In a nutshell, nano-formulations remain established as a promising modality for treating psoriasis treatment as they propose better penetration, targeted delivery, enhanced safety, and efficacy.

PU-65

Novel Formulation for Chemotherapy Induced Peripheral neuropathy

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ABSTRACT

Chemotherapy-induced peripheral neuropathy (CIPN) is a major dose limiting side effect of many commonly used chemotherapeutic agents. Chemotherapy-induced peripheral neuropathy (CIPN) with associated long-term pain is a common and impair condition. One main damaging factor lately described is the Nerve Growth Factor (NGF). NGF is produced by irritated keratinocytes, and NGF over production leads to over active nociceptors bothmembranes are rich in sodium channels. The broad acting sodium channel blocker phenytoin, applied in a suitable topical formulation, might decrease pain. Current treatments for neuropathic pain in CIPN are largely ineffective, with unfavourable side-effects. The capsaicin 8% patch (capsaicin 179 mg patch) is approved for the treatment of neuropathic pain: a single topical cutaneous application can produce effective pain relief for up to 12 weeks. The therapeutic potential of capsaicin 8% patch in patients with painful CIPN, and its mechanism of action. cisplatin which adversely affect disease outcome leading to increased cancer related morbidity. The clinical efficacy of systemic gabapentin in neuropathic pain management is limited by central side-effects in addition to a scarceness of conclusive evidence of its efficacy in CIPN management. The topical route therefore may provide a relatively safe alternative for neuropathic pain treatment in general and CIPN in particular.

PU-66

In silico design of novel coumarin derivatives as potential ATP synthase inhibitors for resistant Mycobacterial strains

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ABSTRACT

Tuberculosis (TB) is one of the most sever disease among the top 10 mortality causing diseases.TB is caused by *Mycobacterium tuberculosis (M. tb)*through pandemic and air borne infectious diseases.Current chemotherapy used in the treatment of TB are well known for the drug resistance like MDR-TB, XDR-TB, co-infection with HIV-AIDS and other auto immune diseases. So, it is highly need of new targets with new chemical scaffolds for the treatment of tuberculosis. There are number of targets available for the treatment of tuberculosis among those, ATP synthase is a ubiquitous enzyme in energy metabolism for generation of ATP.Mycobacteria can utilize the generated ATP even in adverse conditions of low oxygen

environment and nutrient deficiency. From many years researchers are working on the treatment of tuberculosis even though several things are need to be addressed. Recently Bedaquiline, drug was discovered for the treatment of tuberculosis by targeting the ATP synthase enzyme. Bedaquiline is a diarylquinolinederivative whichinhibits the MDR-TB, blocks proton pump by bindingto Glu 65, Phe 69, Ile 70, Leu 70 amino acids of ATP synthase subunit–c. Due to QT prolongation bedaquiline is avoided to prescribe for the severe MDR-TB patients.Hence, coumarin chemical scaffolds that can bedecrease QT prolongation and binds to ATPase subunit-c leads to bactericidal effect on *M.tb*.*In silico* analysis of physico chemical and ADMET propertiesfor new coumarin scaffolds were predicted by PreADMET, Swiss ADME, pkCSM, Molinspiration servers. Molecular docking studies were performed usingPyMOL, DINC, PLIP, Swiss Dock servers.Biological activity prediction was performed by PASS online server. Based on *Insilico* analysiscoumarin derivatives are selected as potential M.TB ATPase inhibitors.

PU-67

In silico design of novel Insulysin (IDE) Inhibitors as Antidiabetic agents

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ABSTRACT

Diabetes mellites (DM), is one of the serious and chronic disease, found common in the developing countries, as emerged as one of the serious public health problems. In which the body's ability to produce or respond to the hormone insulin is impaired, resulting in abnormal metabolism of carbohydrates and elevated levels of glucose in the blood circulation as it is not treated for longer duration of time.Type-2-diabeties mellitus(T2DM) is a disorder that occurs when the pancreas does not produce a hormone called insulin which regulates blood glucose metabolism. If human body cannot utilize insulin up to the mark leads in the rise of blood glucose may cause serious body complication by affecting heart (reduce blood flow), blood vessels, eyes and nerve (neuropathy) and renal damage (nephrotoxicity). Insulysin (IDE) is an enzyme which is degrading the insulin hormone there by insulin levels were decreasing in pancreas results in irregularities in the glucose levels. The ideal insulysin inhibitors were identified and reduce degradation and clearance of insulin in the systemic circulation without effecting the catabolic functions of insulin and on other substrates. The Insulysin inhibitors are used to increase and stabilizes the levels of insulin in T2DM patients. *Insillico* analysis of physio chemical and ADMET properties for new Biguanide derivatives were predicted by preADMET, Swiss ADMET, pkCSM and Moinspirationservers. Molecular docking studies were performed using PyMOL, DINK, PLIP, Swiss dock servers. biological activity prediction is was performed by PASS online sever. Based on *Insillico* analysis a novel Biguanide

derivatives are selected as potential IDE inhibitors.

PU-68

Artificial Intelligence

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ABSTRACT

Artificial intelligence (AI) is not a sine qua non but has time saving quality it is a watershed for modern age technology. AI is an already existing and seen technology which is being used in different fields while recent discoveries that throws limelight, is in the field of medicine that includes drug discovery and designing, which is a step up for pharmaceutical industries. The phenomenon of drug discovery and development is a lifesaving and life enhancing clinical treatment in treatment methodologies yet, the process in quite time consuming and often unsuccessful.

PU-69

Vesicular Nanocarrier Based Treatment Of Skin Fungal Infections: Potential And Emerging Trends In Nanoscale Pharmacotherapy

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ABSTRACT

Occurrence of skin fungal infections is increasing nowadays and their presence is more prominent in patients suffering from immune compromised diseases like AIDS. Skin fungal infections are a major cause of visits by patients to dermatology clinics. Although, a large number of antifungal agents are available for treatment of skin fungal infections, but, their toxic profile and physicochemical characteristics reduce therapeutic outcome. When these antifungal agents are delivered topically using conventional formulations like creams and gels, they may cause various side effects like redness, burning, and swelling at the site of application. Therefore, various vesicular formulations (phospholipid based or non phospholipid based) have been explored by pharmaceutical scientists to treat skin fungal infections topically. Vesicular formulation explored for the purpose are liposomes, ethosomes, transfersomes, transethosomes, niosomes, spanlastics, oleic acid vesicles, and nanoparticles. These formulations show various advantages like bioavailability enhancement of bioactives, high skin permeation power, no side effects at application site, dosing frequency reduction, and sustained drug release. Therefore, in the present article, we have discussed about the utility of various vesicular nanocarrier systems to treat skin fungal infections.

PU-70

Exploration Of Fe Based Mof's For Linezolid Delivery

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ABSTRACT

Metal organic frameworks (MOFs) have attracted more attention in the last decade because of a suitable pore size, large surface area, and high pore volume. Developing biocompatible MOFs such as the MIL family as a drug delivery system is possible. Linezolid, a member of the oxazolidinone, comprises an important class of antibacterial protein synthesis inhibitors and exhibits a broad spectrum of activity against Gram-positive bacteria, including methicillin-resistant Staphylococcus aureus (MRSA). The purpose of the study was initial evaluation of applicability of MOF as a theranostic carrier of linezolid as antibacterial drug in terms of its functionality, i.e. drug loading, drug dissolution, cytotoxicity and antibacterial activity.

PU-71

Topical drug delivery of fusidic acid: Novel approach for the treatment of burn wound infection

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ABSTRACT

A burn is a thermal damage initiated by biological, chemical, electrical, and physical agents with local and systematic side effects. Serious burn wounds are the most horrendous and genuinely enervative wounds affecting nearly every system and prompting to significant morbidity and mortality. Earlier burn wound extraction and skin grafting has been regular clinical practices that have fundamentally improved the results for serious burn-injured patients by decreasing the death rate. In this way, slow wound healing, contamination, pain, and hypertrophic scarring continue to endure a major challenge in burn research and management. Fusidic acid (FA) is one of the potent anti-infection agents used to address bacterial diseases caused by Gram-positive bacteria and functions by binding to prokaryotic elongation factor G(EF-G), practically slowing down the elongation step of bacterial protein synthesis. Numerous antibacterial medications show challenges in going through the cell film. Subsequently, inherent obstruction is appeared by some bacterial strain. Fusidic acid is one of the promising approaches to beat these troubles. A ton of methodologies were utilized to expand the conveyance of fusidic acid, for example, cationic-bilayered nanoemulsion,

chitosan-customized lipidic nanoconstructs, chitosan topical gel, microemulsion, fusogenic liposome, in-situ gel and nanofibers for the management of burn wound.

PU-72

An Overview On Current Status And Future Prospects Of Pharmaceuticals Market In India

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ABSTRACT

India is one of the largest providers of generic drugs globally. Indian pharmaceutical sector industry supplies over 50 percent of global demand for various vaccines, 40 per cent of generic demand in the US and 25 per cent of all medicine in UK. The Indian government has also taken many steps to reduce costs and bring down healthcare expenses. Speedy introduction of generic drugs into the market has remained in focus and is expected to benefit the Indian pharmaceutical companies. In addition, the thrust on rural health programmes, lifesaving drugs and preventive vaccines also augurs well for the pharmaceutical companies. While India ranks tenth globally in terms of value, it is ranked third in volumes. The Indian pharmaceuticals market witnessed growth at a Compound Annual Growth Rate of 5.64 per cent, during 2011-16, with the market increasing from US$ 20.95 billion in 2011 to US$ 27.57 billion in 2016. The pharmaceutical sector in India was valued at US$ 33 billion in 2017. Medicine spending in India is expected to increase at 9-12 percent Compound Annual Growth Rate between 2018-22 with market size up to US$ 40-55 billion, driven by increasing consumer spending, rapid urbanisation, and raising healthcare insurance among others.

PU-73

A Review On Impact Of Mouth Dissolving Drug Delivery Systems On Improvement In Patient's Compliance

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ABSTRACT

Oral route is the most expedient and safest route of drug delivery because of wide range of drugs are administered through this route. Recently researchers have developed fast dissolving tablet (FDT) which dissolve or disintegrate rapidly in mouth saliva without intake of water. This novel drug delivery such as FDT or MDT (mouth dissolving tablet) has overcome many disadvantages like dysphasia or non accessibility of water while travelling. Among them,

mouth dissolving drug delivery systems (MDDDS) have acquired an important position in the market by overcoming previously encountered administration problems and contributing to extension of patent life. In the present scientific scenario the drug delivery technology has become highly competitive and rapidly evolving with ever increasing demand. Fast dissolving tablet (FDT) is one such type of an innovative and unique drug delivery system which is swiftly gaining much attention in the research field of rapid dissolving technology. When compared with conventional dosage form FDT can be a useful alternative as well. The mouth dissolving tablet formulation is used to improve patient's compliance have always attracted scientists towards the development of fancy oral drug delivery systems. This review article also contains different techniques used for preparing FDT, silent features, various patented technologies, and mechanism of super disintegration, challenges faced and the limitations.

PU-74

Liquisolid Compacts : Applications in advancement of solubility enhancement

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ABSTRACT

Liquisolid compacts are immediate or sustained release tablets or capsules that are prepared using the technique of 'liquisolid systems' with the use of adjuvants required for tableting or encapsulation, such as lubricants, and for rapid or sustained release action, such as disintegrants (sodium starch glycolate) or binders respectively. "Liquisolid system" is a promising technique for dissolution (a rate limiting step for oral absorption of drugs) and release enhancement of poorly soluble drugs (mainly BCS classII) by transforming their liquids such as solutions or suspensions in a non-volatile liquid vehicle into acceptably flowing and compressible powder by blending them with selected carriers and coating material thus improving bioavailability, rapid release rate.

Applications: Valsartan as a liquisolid compact was prepared and the dissolution efficiency of valsartan at 15 min was increased from 4.02% for plain drug and 13.58% for marketed product to 29.47% for the liquisolid formulation. Dissolution of prednisolone (used as immunity suppressant in cancer), pranolol hydrochloride (as sustained release systems), indomethacin (NSAIDs), famotidine(antiulcer), when delivered as a liquisolid compactimproved dissolution as compared to other oral dosage forms.

Preparation: Usually liquisolid compacts are prepared using Polyethylene glycol400 as non-volatile solvent, Avicel PH102 as carrier, and Aerosil 200as the coating materialowing to increased wetting properties and enhanced surfaceexposure of drug moiety for dissolution also FTIR study revealed that there is no drug excipient interaction.By using "neusilin" as carrier as

well ascoating material instead of Avicel and Aerosilthe liquid adsorption capacity increased by a factor of 7 this leadsto a significant improvement of the liquisolid technology and provide efficient way to increase dissolution where high amounts of liquid vehicle are needed, thus tablet weights are also reduced in comparison with the commonly used carrier and coating materials.Hydrocortisone liquisolid tablets was prepared with two different carrier materials namely microcrystal-line cellulose (Avicel pH 101) and dicalcium phosphate. In telmisartan (antihypertension drug) the dissolution profile obtained at different pH confirmed the pH independent release of telmisartan also it was not affectedby ageing significantly according to stability studies.

PU-75

Formulation and Evaluation of *Ocimum sanctum* and *Zingiber officinale* loaded liquid formulation for synergistic anticoagulant effect

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ABSTRACT

Medicinal plants have been used for treatment of human ailments since ancient times**.** Plants are considered as an important source of medicine from which large numbers of therapeutic drugs are obtained due to their chemical diversity. The phytochemicals obtained from plants are found to have biological activities such as anticoagulant properties. In this study, two plants *(Ocimum sanctum and Zingiber officinale)* are chosen to obtain synergistic anticoagulant effect. Literature survey proves that the plants individually show anticoagulant effect. On the basis of this study, formulation of liquid dosage form for parenteral administration, loaded with extacts of *O. sanctum and Z. officinale* to obtain synergistic anticoagulant effect were performed. The prepared formulation is evaluated on the basis of sterility and other parameters.

PU-76

Smart Nanoparticles: An advance multifunctional targeting delivery system to reduce cytotoxicity of antitumor drugs

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ABSTRACT

Nanoparticle-based drug-delivery systems have overcome some of the limitations associated with traditional cancer-therapy administration, such as reduced drug solubility, chemoresistance, systemic toxicity, narrow therapeutic indices, and poor oral

bioavailability."Smart" drug delivery, or multiple levels of targeting, and extended-release drug-delivery systems are advanced nanomedicine technologies that provide additional methods of overcoming these limitations. NP drug-delivery systems that can release the drug in response to specific physiological triggers, at the appropriate time, and at the correct target site are referred to as smart NPs.smart NPs refer to those incorporating all three delivery strategies: passive, active, and stimuli-responsive targeting. Smart nanoparticles have the potential to overcome some of the physiological obstacles like renal filtration, hepatic degradation, high tumor-cell density, high interstitial fluid pressure, and drug-efflux pumps.Advancements in NP design have resulted in multifunctional targeting and multispecificity. Recently, the copolymer FA-DABA-SMA was developed, which relies on the EPR effect, FA-receptor targeting, and pH sensitivity. This smart-delivery system incorporates all three forms of targeting. Smart-drug delivery aims to localize treatment to tumors to reduce cytotoxicity and enhance the therapeutic index by using multifunctional targeting strategies.

PU-77

Optimization and *In-vitro* characterization of Inhalable Cationic MUC-1 peptide antigen loaded Poly (lactide-co-glycolide) nanoparticles enhance cellular uptake in mouse professional macrophages

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ABSTRACT

Problem Statements: Globally, Non-Small Cell Lung Cancer (NSCLC) is the most common type of lung cancer with highest death rate. Numerous programmes have been launched worldwide for the eradication of lung cancer. Amongst colossal multiple areas, development of therapeutic vaccine is one of the most important domains. Therapeutic vaccines with long lasting mucosal and systematic immune response have been gradually recognized as one of the most preferred approach with high potential to prevent the reoccurrence of lung cancer.

Method: In present research work, we have prepared MUC-1 peptide loaded PLGA nanoparticles with the addition of strongly charged cationic protein i.e. protamine sulphate (Cationic-PLGA-MUC-1-NPs) by emulsion-diffusion evaporation method.

Results: The average particle size and zeta potential of optimized cationic-PLGA-MUC-1--NPs was measured to be 122.21± 20.71 nm and 5.29± 0.71 mV, significantly ($P<0.01$) higher than 81.24±17.76 nm and -40.41±3.37 mV of anionic-MUC-1-PLGA-NPs. In continuation, integrity plus conformational stability of MUC-1 were maintained in both cationic-PLGA-MUC-1--NPs and anionic-MUC-1-PLGA-NPs as evidenced by mass spectroscopy and superimposed circular dichroism (CD) spectra. Cationic-PLGA-MUC-1-NPs at the

concentration of 50 µg/ml exhibited 84.4% cellular uptake in RAW 264.7 cells measured in terms of fluorescence intensity significantly ($P<0.05$) higher than 60.1% of anionic-PLGA-MUC-1-NPs. Consistent to quantitative results, cationic-PLGA-MUC-1-B-NPs also demonstrated higher cellular uptake in RAW 264.7 cells as compared to anionic-PLGA-MUC-1-NPs suppose to be through multiple mechanisms including phagocytosis and clathrin mediated endocytosis

Conclusion: Owing to size below <500 nm, positive surface charge and spherical shape, cationic-PLGA-MUC-1-B-NPs must be further evaluated *in vivo* through inhalation route of administration for antitumor potential in xenograft model of NSCLC.

PU-78

Self healing hydrogel as a novel injectable drug delivery carrier

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ABSTRACT

Hydrogels are a family of soft matters which have the three-dimensional polymeric network and contain large proportion of water having outstanding characteristics. However, the structural and functional integrity of the hydrogels are often compromised by external mechanical forces or chemical erosion once used, particularly in subtle in vivo environment. To overcome this drawbacks novel injectable smart material hydrogel is developed having self healing ability. Injectable self healing hydrogel is a special class of hydrogel with the automatic healing ability after destruction. The repair has been done with a rapid pace within seconds. It can transform from sol to gel in situ upon physical or chemical stimuli, such as the change of temperature, pH, or redox property of the environment. Thixotropic self healing hydrogels may also permit the drug to be injected directly into the targeted site without any surgical implantation. Gel forming composition displays a shear thin recovery after when injected to the targeted site without syringe clogging. Self-healing property of this kind of hydrogel is based on dynamic covalent or noncovalent bonds. Thus, all this characteristics make the self healing hydrogel as a smart novel drug delivery carrier.

PU-79

Peptide-based nanoparticle for ex vivo and in vivo drug delivery

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ABSTRACT

One of the major challenges for new therapeutics molecules to enter the clinic remains improving their bioavailability and cellular uptake. Therefore, delivery has become a key stone in therapeutic development and several technologies have been designed to improve cellular uptake of therapeutic molecules, including cell-penetrating peptides (CPPs) or protein transduction domain (PTD). PTDs or CPPs were discovered twenty years ago, based on the potency of several proteins to enter cells and nowadays, numerous peptide carriers have been described and successfully applied for ex vivo and in vivo delivery of varying therapeutic molecules. Two CPP-strategies have been reported; the first one requires chemical linkage between the drug and the carrier for cellular drug internalization and the second is based on the formation of stable complexes with drugs depending on their chemical nature. Peptide-Based-Nanoparticle Devices (PBND), correspond to short amphipathic peptides able to form stable nanoparticles with proteins and/or nucleic acids. Three PBND-families, PEP, MPG and CADY have been described, these carriers mainly enter cells independently of the endosomal pathway and efficiently deliver cargoes in a large variety of challenging cell lines as well as in animal models. This review will focus on the structure/function relationship of the PBND: CADY, PEP and MPG, in the general context of drug delivery. It will also highlight the requirement of primary or secondary amphipathic carriers for in vitro and in vivo delivery of therapeutic molecules and provide an update of their pre-clinical evaluation.

PU-80

Formulation And Evaluation Of Gastro-Retentive Floating Drug Delivery System Of Domperidone

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ABSTRACT

Gastro-retentive drug delivery System is an approach to increase the gastric residence time of drugs in stomach. This system is designed for site-specific oral drugs with low bulkdensity than gastric fluid so as to buoyant the dosage forms in stomach toincrease the residence time of the drug and thereby improve the bioavailabilityof drugs.In the present investigation, an attempt had been made to design gastroretentivedrug delivery systems for domperidone by direct compression using different viscosity grade of polymers such as using HPMCK100M, xanthan gum, locust bean gum, bombaxceiba and chitosan. The aim of this study was to formulate and evaluate oral site specific Floating matrix tablet of domperidone which can be targeted to stomach in treatment of nausea and vomiting with motion sickness. The drug delivery system was based on the gastro retentive system where drug can remains in the gastric region for several hours and significantly prolongs the gastric residence time of drug.Drug polymer compatibility studies were carried out by FT-IR, DSC analysis and XRD diffraction.

Floating Tablets were evaluated for hardness, friability, weight variation, drug content, in-vitro drug release and buoyancy study. Comparative dissolution profile of all the batches for drug release and buoyancy study.From Comparative dissolution profileof all the batches indicates drug release from tablet was directly affected by amount of polymer, From the resultsit can be concluded that the tablets compressed at low compression forceshowed good buoyancy lag time; this may be due to increase in bulk volumeand porosity but total buoyancy time is less. The tablets compressed at highcompression force showed increased buoyancy lag time; this may be due toreduction in bulk volume and porosity but total buoyancy time is more.In the present study, the higher swelling index was found for tablets containing HPMCK100M with bombaxceibahaving nominal viscosity. Thus, theviscosity of the polymer had major influence on swelling process, matrixintegrity, as well as floating capability, hence from the above results, it can beconcluded that linear relationship exists between swelling process and viscosityof polymer.From the release profile, it was found that the sustained release of domperidone was observed from floating matrix tablet containing an amount of HPMCK100M with 1:1 bombaxceiba and chitosan. The kinetic release of optimized batch (F6) was best explained by Zero order, Higuchi and Korsmeyer-Peppas kinetics model.The floating matrix tablet was most likely to provide targeted delivery of Domperidone.

PU-81

Dendrimers in Drug Delivery for Treatment of Cancer

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ABSTRACT

Nanoparticles in the form of dendrimers may be a keystone in the future of therapeutics. The field of oncology could soon be revolutionized by novel strategies for diagnosis and therapy employing dendrimer-based nanotherapeutics. Dendrimers are multifunctional smart Nanocarriers to deliver one or more therapeutic agent safely and selectively to cancer cells. The high level of control over the synthesis of dendritic architecture makes dendrimers a nearly perfect (spherical) nanocarrier for site-specific drug delivery. The presence of functional groups in the dendrimers exterior also permits the addition of other moieties that can actively target certain diseases which are now widely used as tumor targeting strategies. Drug encapsulation, solubilization and passive targeting also equally contribute to the therapeutic use of dendrimers. Dendrimers are ideal carrier vehicles on cytotoxicity, blood plasma retention time, biodistribution and tumor uptake. In this review we highlight the advantages of dendrimers over conventional chemotherapy, toxicity and its management, following anti-cancer drugs delivered by using dendrimers and recent advances in drug delivery by various types of dendrimers as well as its diagnostic applications.

PU-82

Development and Characterization of Morin Dihydrate Loaded Microparticulate Carriers for Management of Hepatotoxicity

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ABSTRACT

The objective of the proposed study is to prepare and evaluate morin dihydrate loaded microparticles to prevent degradation of the drug in the stomach which would inturn elevate the drug concentration at the liver site for the treatment of hepatotoxicity. Morin Dihydrate loaded microparticles were prepared by solvent evaporation method. The developed formulation depicted pH-sensitive drug release in specific duodenum region i.e., 72±1.2 release at pH 5.5. *In vitro* results indicated nearly 83.5±3.8 % drug release within 24 h of incubation in different dissolution medium as compared to other formulations. Significantly lesser amount of drug release was observed up to 2 h in simulated gastric fluid (pH 1.2) which may be due to the presence of glycosidic linkage in cellulose acetate phthalate preventing the drug release in gastric environment.
Thus, the drug achieved burst release kinetics in pH 5.5 having R^2 value 0.9619 which is requisite due to less retention time in duodenum region. It was further observed that the optimized microparticulate formulation showed significantly diminished levels of SGOT, SGPT, ALP, TB ,TP and SOD which reflected functional repair mechanism for damaged liver tissues.

PU-83

Formulation And Evaluation Of Mupirocin Gel Against Methicillin Resistant *Staphylococcus* In Burn Wound Infection

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ABSTRACT

The aim of present work is to develop and evaluate mupirocin gel against methicillin resistant *staphylococcus* in burn wound infection. Gel was prepared with the help carbopol gel base which was produced by hot method. Mupirocin were incorporated into carbopol gel base by magnetic stirring. Mupirocin gel shows pH 7.2. The viscosity of mupirocin gel was found to be 73,200 cp. The spreadability of mupirocin was found to be 12.66 $g.cm^2$ /sec. The % yield of

mupirocin gel was found to be 95.68%. *In vitro* release study show 97.4% release of drug, stability is good with effective antibacterial activity. it was observed that the first order model was found to be best suited with R^2 values of 0.9826. First order model be used to describe the drug dissolution for, several types of modified release pharmaceutical dosage forms.

PU-84

Liposomes

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ABSTRACT

Liposomes, sphere-shaped vesicles consisting of one or more phospholipid bilayers, were first described in the mid-60s. Nowadays, they are a very useful reproduction, reagent, and device in

various scientific disciplines, including medicine, chemistry, biochemistry, colloid science, biology, physics, biophysics, mathematics and theoretical. Targeted CT liposomes represent a novel approach for rapid thrombus imaging. They allow specific and selective accumulation in thrombus providing significant contrast enhancement (expressed as HU) over the surrounding tissue. After the initial discoveries liposomes have made their way to the market.Today, they are a very useful reproduction, reagent, and tool in various scientific disciplines, including mathematics and theoretical physics, biophysics, chemistry, colloid science, biochemistry, and biology. Since then, liposomes have made their way to the market. Among several talented new drug delivery systems, liposomes characterize an advanced technology to deliver active molecules to the site of action, and at present, several formulations are in clinical use. Research on liposome technology has progressed from conventional vesicles to 'second-generation liposomes', in which long-circulating liposomes are obtained by modulating the lipid composition, size, and charge of the vesicle. Liposomes with modified surfaces have also been developed using several molecules, such as glycolipids or sialic acid. This paper summarizes exclusively scalable techniques and focuses on strengths, respectively, limitations in respect to industrial applicability and regulatory requirements concerning liposomal drug formulations based on FDA and EMEA documents.

PU-85

Hydrogels

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ABSTRACT

Hydrogels are a unique class of three dimensional cross-linked polymeric networks that can hold a large fraction of aqueous solvents and biological fluids within their structures. These are hydrophilic, three-dimensional networks that are able to absorb large quantities of water or biological fluids, and thus have the potential to be used as prime candidates for biosensors, drug delivery vectors, and carriers or matrices for cells in tissue engineering. Nowadays, hydrogels have attracted a growing interest of many scientists in different fields of research. Intelligent hydrogels have found a significant role in a wide variety of applications such as drug delivery systems, tissue engineering, optics, diagnostics and imaging. The purpose of this paper is to present a brief review on the basis concept of hydrogels, the description about classification, synthesis methods, stimulation situations, relevant mechanisms, and applications.

PU-86

Oral Controlled Release Drug Delivery System

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ABSTRACT

Oral route has been the most popular and successfully route for controlled delivery of drugs because of the flexibility in the designing of dosage form than other routes. The immidiate release conventional dosage form lack in the efficiency of controlling the proper plasma drug concentration. This factor as well as factors such as repetitive dosing and unpredictable absorption leads to the concept of oral controlled release drug delivery systems. A desirable characteristic of controlled release delivery system is that the duration of drug action should be dictated by the design property of drug molecules. There are different mechanistic aspects for design of oral controlled release drug delivery systems such as matrix, reservoir, osmotic pressure, ion exchange resins, altered density etc. This article contains brief review on currently existing oral controlled system and various formulation approaches for the controlled release system.

PU-87

Ecopharmacovigilance: Progress In India

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ABSTRACT

Ecopharmacovigilance includes science and activities concern to detection, evaluation, understanding and avoidance of adverse events or other problems related to the alive of pharmaceuticals in the habitat which can affect the human and animal species. It aims to ensure that significant environmental issues associated with pharmaceuticals in the ecosystem are identified in a timely and managed. The adverse effect of medicinal wastes on environment is yet to be understood seriously in India. since, India mount as one of the country with highest pharmaceutical pursuit. The study involved an estimation is done on India's regarding ecopharmacovigilance, the effect of pharmaceuticals on the ecosystem and the solemnity of this issue which require a contrivance of ecopharmacovigilance in Indian government policy. Indian government has been mapping the amounts of minerals and heavy metals as pollutants in environment but has not achieve success to detect pharmaceuticals as pollutants. India is a hub of pharmaceutical companies and manufacturing units and has become one of the world's largest centers for bulk drug production, which are supplying over 65 countries. This leads to abnormal drug contamination of surface, ground, drinking water and the environment. The most difficult part of ecopharmacovigilance is determining the connection between cause and effect in the environment. Indian authorities must commence to exploits scientific studies for the widespread detection of pharmaceuticals in the environment and effects in wildlife species, there are few identified cases in which adverse environmental effect in the field has been only assign to a pharmaceutical. Though it is difficult to remove pharmaceutical entry into environment along human and animal excretion, it is difficult to lower the entry through hospital wastes, improper disposal of unused drugs and wastes comes out from manufacturing industries. Currently, there is a need for build up of a strong law concerning ecopharmacovigilance but there is no any programs are settled taken up by the government of India to observe ecopharmacovigilance. A strong law with a proper bases is required to recognized EPV in India which can stop and prevent more damage to the environment.

PU-88

Microspheres: A Novel Drug Delivery System

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ABSTRACT

Alzheimer's disease (AD) has characteristic histopathological, molecular, and biochemical abnormalities, including cell loss; abundant neurofibrillary tangles; dystrophic neurites; amyloid precursor protein, amyloid-β (APP-Aβ) deposits; increased activation of prodeath genes and signaling pathways; impaired energy metabolism; mitochondrial dysfunction; chronic oxidative stress; and DNA damage. Gaining a better understanding of AD pathogenesis will require a framework that mechanistically interlinks all these phenomena.

Currently, there is a rapid growth in the literature pointing toward insulin deficiency and insulin resistance as mediators of AD-type neurodegeneration, but this surge of new information is riddled with conflicting and unresolved concepts regarding the potential contributions of type 2 diabetes mellitus (T2DM), metabolic syndrome, and obesity to AD pathogenesis. Herein, we review the evidence that (1) T2DM causes brain insulin resistance, oxidative stress, and cognitive impairment, but its aggregate effects fall far short of mimicking AD; (2) extensive disturbances in brain insulin and insulin-like growth factor (IGF) signaling mechanisms represent early and progressive abnormalities and could account for the majority of molecular, biochemical, and histopathological lesions in AD; (3) experimental brain diabetes produced by intracerebral administration of streptozotocin shares many features with AD, including cognitive impairment and disturbances in acetylcholine homeostasis; and (4) experimental brain diabetes is treatable with insulin sensitizer agents, i.e., drugs currently used to treat T2DM. We conclude that the term "type 3 diabetes" accurately reflects the fact that AD represents a form of diabetes that selectively involves the brain and has molecular and biochemical features that overlap with both type 1 diabetes mellitus and T2DM.

PU-89

Targeted Drug Delivery System

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ABSTRACT

Targeted drug delivery system is form of drug delivery system where the dosage form is delivered only to its site of action and not to the non- target organs or tissues or cells. This method delivers medication in such a manner that concentration of the medicament is relatively high in the tissues of interest than the other tissues. This improves efficacy and reduce side effects. Products based on such a delivery system are being prepared by considering the specific properties of target cells, nature of markers, transport carriers or vehicles which convey drug to specific receptors, ligands and physically modulated components. Targeted drug delivery system can be usedin the treatment of diseases such as the cardiovascular disease, diabetes and cancerous tumor. Types of TDDS include nanotubes, nanowires, nanoshells, quantum dots, nano pores, dendrimers, liposomes, niosomes, virosomes etc. Different strategies used in drug targeting are passive targeting, active targeting, and ligand mediated targeting and dual targeting. TDDS used to reduce the toxicity of drug, avoidance of hepatic first pass metabolism, reduce dose size, selective targeting to infectious cells.

PU-90

Microspheres: A Novel Drug Delivery System

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ABSTRACT

Numerous targeted drug delivery systems have emerged various routes of administration to attain controlled and targeted drug delivery. Microsphere based targeted drug delivery system has gained considerable attention in recent years. Microspheres are characteristically free flowing powders consisting of protein or synthetic polymers. Size of microspheres ranges from 1 to 1000 µm. Microspheres are matrix systems in which the drug is uniformly dispersed, dissolved or suspended. Microspheres contain solid or liquid drug dissolved or dispersed in a matrix system. Formation of microspheres increases bioavailability, improves stability, enhance biological half-life and reduces toxicity of the drug. There are different types of microspheres such as Bio adhesive microsphere, Magnetic microsphere, Floating microsphere and Polymeric microspheres. Different kinds of methods used in formulation of microsphere are Simple emulsion based method, Double emulsion based method, Interfacial Deposition technique, Interfacial Polymerization technique, Phase separation method, Spray drying. Microspheres delivers the drug in controlled manner through different routes like oral, topical, naso- pulmonary and gene therapy. By developing newer techniques it can give more therapeutic effects and improves safety of drugs.

PU-91

Current And Future Perspectives On Gastroretentive Drug Delivery Systems

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ABSTRACT

In recent years, many attempts have been made to enhance the drug bioavailability and therapeutic effectiveness of oral dosage forms. Various gastroretentive drug delivery systems (GRDDS) have been used to improve the therapeutic efficacy of drugs that have a narrow absorption window, are unstable at alkaline pH, are soluble in acidic conditions, and are active locally in the stomach. In this we discuss the physiological state of the stomach and various factors that affect GRDDS. Recently applied gastrointestinal technologies such as expandable, superporous hydrogel; bio/mucoadhesive, magnetic, ion-exchange resin; and low- and high-density-systems have also been examined along with their merits and demerits. The significance of in vitro and in vivo evaluation parameters of various GRDDS is summarized along with their applications. Moreover, future perspectives on this technology are discussed

to minimize the gastric emptying rate in both the fasted and fed states. Overall, this abstract may inform and guide formulation scientists in designing the GRDDS.

PU-92

Characterization and Anthelmintic Investigation of Phytosomes Assimilating *Cedrus deodara* Bark Extract

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ABSTRACT

Objective: Estimation of total phenolic content, flavonoid content and preparation of phytosome complex assimilating hydroalcoholic extract of *Cedrus deodara* bark. Characterization and *in vitro* effectiveness of phytosomes against *Sarcoptes scabiei*.

Method: Phytosomes incorporated with hydroalcoholic extract of *Cedrus deodara* bark was prepared with solvent evaporation method by using different ratio of extract and phospholipids. Phytosomal complex was characterized by digital microscopy, SEM, TEM, particle size analysis, zeta potential, polydispersity index, entrapment efficiency, infrared spectroscopy, and partition coefficient. Total phenolic content and flavonoid content of bark extract (aqueous extract, alcoholic extract and hydroalcoholic extract) were estimated by folin ciocalteu's reagent and $AlCl_3$ colorimetric method respectively. Phytosomal complex (F_1,F_2,F_3) and hydroalcoholic extract of *Cedrus deodara* bark in different concentrations (25mg, 50mg and 75mg) were evaluated for anthelmintic activity against *Pheretima posthuma* and *Ascaris suum* by observing the paralysis time and death time of individual worms.

Result: Maximum amount of total phenolics and flavonoid content was estimated in the hydroalcoholic extract as compared to aqueous and alcoholic extract. Studies demonstrated that phytosomal complex (F_3) containing hydroalcoholic extract and phospholipids in a ratio of 1:1.5 possess optimum physical characteristics indicating enhancement in lipophilic characters. Further on anthelmintic investigation of all the phytosomes complex, it was observed that F_3 complex (75mg) possess the significant time of paralysis and time of death against *Pheretima posthuma* and *Ascaris suum* as compared to bark extract.

Conclusion: Present study demonstrates the characterization of phytosomes as novel herbal drug delivery system describing the scope of anthelmintic phytosomes.

PU-93

Economical production of chitin-oligosaccharides from sea food waste and their application as prebiotic Agents

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ABSTRACT

Prebiotics are "Selectively fermented ingredients which allow specific changes, both in the composition and activity of the gastrointestinal microflora that confers benefits of host well being and health". Oligosaccharides act as non-digestible dietary fibers which make them potential agents for their application as good prebiotic agents. Moreover oligosaccharides are also reported to exhibit antioxidant, antimicrobial and other therapeutic properties. Chitin oliogosaccharides (COS) is one important class of oligosaccharides conferring prebiotic properties. There are few reports on the production of COS using microorganism major bottleneck in their application is their economical production.

A huge amount of sea food waste is generated globally. It contains a large amount of chitin which can be used as a cheaper source for production of chitin oligosaccharides. *Paenibacillus* sp. AD is known to produce chitinase and degrade the sea food waste in submerged conditions. In present study conditions were optimized for the production of chitin oligosaccharides in solid state fermentation and their purification. Conditions were standardized by using various types of sea food waste individually and in mixture. Chitin oligosaccharides were found to have good prebiotic characteristics.

PU-94

Women Love for Nutraceutical's: A New Era

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ABSTRACT

Nutraceutical is the hybrid of 'nutrition' and 'pharmaceutical'. They are food or part of food that provides medical or health benefits including the prevention and treatment of a disease.WHO estimates that 80% of the world's population presently uses herbal medicine for some aspect of primary health care.Nutraceutical has advantage over the medicine because they have multiple

therapeutic effect with lacking of side effects. Herbal nutraceutical is used as a powerful instrument in maintaining health and to act against nutritionally induced acute and chronic diseases, thereby promoting optimal health, longevity, and quality of life. In whole, 'Nutraceutical' has led to the new era of medicine and health, in which the food industry has become a research oriented sector. The food products used as Nutraceutical's can be categorized as dietary fibre, prebiotics, probiotics, polyunsaturated fatty acids, antioxidants and other different types of herbal/ natural foods. However, Nutraceutical's help in combating some of the major health problems of the century such as obesity, cardiovascular diseases, cancer, osteoporosis, arthritis, diabetes, cholesterol etc. Women use more Nutraceutical's than men. From a safety point of view Nutraceutical's are trusted products even if they are not approved by authorities like pharmaceuticals. Increase in shift towards preventive therapies and increase in disposable income, favorable pricing environment growth in Pharma retail chain and increase in healthcare spending is mainly responsible for increasing market for Nutraceutical's. This review summarizes the pleiotropic effects of Nutraceutical's in present era.

PHARMACEUTICAL CHEMISTRY AND NATURAL PRODUCTS ABSTRACTS

PC-01

Obesity Vs Herbal Remedies

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ABSTRACT

Obesity is a great concern not merely because of the excess weight, but also because of makes you susceptible to a number of serious health problems such as type 2 diabetes, high blood pressure, heart disease, and others. It is important to adopt healthy life changes to combat this problem. In addition, you can use some easy yet effective natural remedies to help with your weight loss efforts. 1. Lemon Juice is one of the best home remedies for fighting obesity. It helps improve digestion and aids in detoxification. Furthermore, it helps remove toxins from your body that slow down your metabolism.2. Apple cider vinegar raw, unfiltered apple cider vinegar is another popular home remedy to reduce excess weight. Though the actual loss weight benefits of it are still unknown, preliminary research has shown that it can help protect against obesity.3.Aloe-vera is useful in treating obesity because it stimulates the metabolism, increases energy consumption, and mobilized unused fat in the body. It contains natural collagen proteins that make the body work harder in order to absorb the proteins. 4. Cayenne pepper helps to control obesity and aids in weight loss. It contains capsaicin that stimulates your body to burn fat and increases energy expenditure.5 Green tea is another popular natural remedy to promote weight loss. The epigalactocatecin-3-gallate (EGCG), a compound found in green tea, helps slow down weight gain by limiting fat absorption and increasing the body ability to use fat.6.Curry leaves research shows that curry leaves contain mahanimbine, an alkaloid that has anti-obesity activity.

PC-02

Formulation And Evaluation Of Herbal Proniosomal Structures Containing Dhandhanayanadi Kashayam For The Treatment Of Alzheimer's Disease

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ABSTRACT

Alzheimer's disease is associated with degeneration of neuronal cells of the brain, which can lead to dementia. Targeting the brain is one of the most challenging task, hence the objective of this research is to design and develop a drug delivery system which may cross the BBB

and can target the amyloid beta cells and reduce the oxidative stress. To overcome the BBB, Proniosomes have been formulated by Modified Ethanol injection method using Span 60 as non-ionic surfactant, Cholesterol- lipid for stability and rigidity of vesicles, Lactose monohydrate have been used as a carrier and Stearyl amine is employed as charge inducer. Dhanadanayanadi Kashayam was evaluated for physicochemical parameters, drug-polymers were characterized for compatibility studies using FTIR. Proniosomes were evaluated for Particle size distribution (172 nm), % EE (73.19%) and % CDR(81.79%). The SEM results revealed that as the concentration of cholesterol decreases the vesicle size increases. Zeta potential analysis showed that the placebo and the drug loaded proniosomes both were highly negatively charged leading to particle repulsion. The formulation was optimized, stable and showed efficacy during*in-vitro* studies, hence the formulation can be considered as a potential candidate for brain targeting for the treatment of Alzheimer's Disease.

PC-03

In Vitro Antioxidant Studies Of Polyherbal Formulation Consisting Of Alcoholic Extracts Of Three Different Herbal Drugs

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ABSTRACT

The aim of the present study was to investigate antioxidant activity of a polyherbal formulation containing three medicinal plants {*Momordica charnatia* (MC), *Andrographis paniculata* (AP) *and Withania somnifera* (WS)}, well known in Ayurveda for their role in various therapeutical activities. Ethanolic extract of each herbal drug was prepared by Soxhlation process. Phytochemical constituents, total phenolic content and total flavonoid content of the extracts at different concentrations were estimated. Extracts were analyzed for its antioxidant potential by DPPH (1, 1-diphenyl-2-picrylhydrazil) and ABTS free scavenging assay. Our Results showed that all the extracts were possessed high antioxidant activity individually and even showed more potential in different ratio combinations as compared to Ascorbic acid. IC_{50} values of drug combination (MC:AP:WS) in ratio (2:2:1) exhibit higher antioxidant potential in DPPH (26.40± 0.56 µg/ml) and in ABTS (28.91±0.34 µg/ml) possibly due to synergistic effect of polyherbal formulation with higher phenolic and flavonoid content.

PC-04

Antidiabetic Drugs In Ayurveda

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ABSTRACT

Ayurveda the Indian traditional Medical science uses many drugs for diseases derived from medicinal plants & Minerals. Diabetes (Madhumeha) is an important human ailment afflicting many from various walks of life in different countries. This review focuses on Ayurvedic drugs like plants, minerals in single or compound form in various research institutes and articles. A list of Ayurvedic drugs having antidiabetic and related beneficial in treatment of diabetes is compiled. These include, Trivanga Bhasma, Triphala Churna, Terminalia chebula, Nimbapatra, Ashvattha, Acacia Arabica, Mangifera indica, Eugenia jambolana, Allium cepa, Allium sativum, Aloe vera, Tinospora cordifolia etc.

PC-05

Formulation and Evaluation of Berberine Hydrochloride loaded Herbosomes for Anti-oxidant Activity

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ABSTRACT

Herbal Novel drug delivery system is an advanced means for plant concentrate and active phyto or herbal extract constituents to improve drug delivery. In ancient era the phytocompounds are used as medicine to cure and prevent the diseases but their use are limited because of the poor absorption of phytopharmaceutical through oral route. Thus to improve the absorption, berberine hydrochloride loaded herbosomes were prepared by solvent evaporation technique and further it is characterized for their entrapment efficiency, IR, HPLC and in vitro diffusion study. From the result, complex development was confirmed by carrying out IR, and HPLC analysis. HPLC spectra of drug as well as drug with lipids show characteristic absorption peaks. SEM indicates that particles have irregular and rough surface morphology. The entrapment efficiency of herbosomes was obtained to be 76.03 %. Formulation F2 showed highest *in-vitro* drug release (79.67%) in 12 hrs. According to antioxidant study, formulation is more superior to drug. Percentage inhibition and IC_{50} value of DPPH free radical scaveng activity and ABTS scavenging effect of drug and formulation are respectively 70.204% IC_{50} value 2.95 and 91.36% IC_{50} value2.65 and for ABTS 76.217% IC_{50} value 4.29 and 87.5% IC_{50} value 3.985 phenolic content of drug is more than formulation. From the result it was concluded that by complexing berberine hydrochloride with phospholipids, showed better oral bioavailability and antioxidant activity than free form of standardized berberine hydrochloride.

PC-06

Antiinflamatory Activity Of Herbal Crude Drugs Found In Himalayan Region In Uttarakhand

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ABSTRACT

The word "**herb**" has been derived from the Latin word, *"herba"*. Now-a-days, herb refers to any part of the plant like seed, stem, bark, leaf, fruit, flower, root and non-woody plant. This study has been conducted to examine the anti-inflammatory activity of herbal crude drug by carrageenan-induced inflammation model in rat or mice. The study has been carried out by the method described by vogel. The carrageenan, adjuvant, formaldehyde has been induced inflammation. Carrageenan, formaldehyde induced inflammation has been used to evaluate the anti-inflammatory activity. The aqueous, methanolic, ethanolic and ethyl acetate extracts have been evaluated in inhibition of different inflammation model. Standard drug Diclofenac sodium, Phenylbutazone, Indomethacine is compared with different extract activities that show major anti-inflammatory activity. A part from that, these herbal crude drugs play a significant role in the progress of human cultures around the whole world. Additionally, some herbal plants are considered as significant source of nutrition and as a result of which they are recommended for their curative values. Various crude drugs included clove, cinnamon, castor oil, tulsi, ispaghula, ginger, aloe, chili peppers, pepper and turmeric etc.

PC-07

Giloe (*Tinospora cordifolia*): A therapeutically potent plant

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ABSTRACT

Since the beginning of human civilization, medicinal plants have been used by mankind for its therapeutic value. Nature has been a source of medicinal agents for thousands of years and an impressive number of modern drugs have been isolated from natural sources. Traditional medicine has remained as the most affordable and easily accessible source of treatment in the primary healthcare system of resource poor communities in India. A huge interest always exists in exploring nutraceuticals from plant materials to replace synthetic drugs in order to overcome their adverse effects and also for economic reasons. *Tinospora cordifolia* is a widely used shrub in folk and Ayurvedic systems of medicine all over India. Though almost all of its

parts are used in traditional systems of medicines, leaves stem and roots are the most important parts which are used medicinally. *Tinospora cordifolia* is a versatile resource for all forms of life. It belongs to family Menispermaceae. It contains many different chemicals that affect the body. This drug has the potential use in the treatment of rheumatoid arthritis, leprosy and various types of heart diseases. This review article describes the prominence of a medicinal plant *Tinospora cordifolia* in therapeutics such as the main use of this plant as anti-diabetic drug. The present review emphasizes on the traditional therapeutic uses of *Tinospora cordifolia* with its recent advances in pharmacological investigations that would be a useful reference for further plant drug researches.

PC-08

A review on: Medicinal plant *Allium tuberosum* (Jambu)

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ABSTRACT

Traditional medicine systems are part of India's culture. Today the whole worldhas become increasingly interested in Indian A*yurveda* and other traditional health caresystems. The demand for medicinal plants is increasing in both developing and developedcountries as a result of recognition of the non-narcotic nature, lack of side effects andeasy availability of many herbal drugs. Most often the medicinal plants are collected fromthe wild. The genus *Allium*, belonging to the family Liliaceae, comprises about 700 species, including both economically important vegetables and wild species. *Allium cepa* (onion), *A. sativum* (garlic) and *A. tuberosum* (Chinese chives) are commercially important, other *Allium* species are important locally *A.tuberosum* Rottl. ex Sprang. is widely distributed in South East Asia, South Asia and some countries of the Middle East including Iran that grows at an altitude of 1500-2000 m. Many members of *Allium* are used as food or are important medicinally since thousands of years. They have antimicrobial, antithrombotic, antitumor, hypolipidemic, antiarthritic and hypoglycemic charachteristics related to their high content of organo-sulfur compounds. Organo-sulfur compounds, such as dially sulfide, dially disulfide, and others, provide, in part, to garlic and onion a unique and characteristic odor and flavor as well as biological properties. Aim of the present study was to explore related all information about *A. tuberosum* (Chinese chives).

PC-09

Pharmacognostical And Phytochemical Study On Tea

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ABSTRACT

Herbs and herbal plants are with savory or aromatic properties that are used for flavoring the food, in the form of medicine, or as fragrances. Culinary use typically distinguishes herbs from spices. Herbs refer to the leafy green or flowering parts of a plant (either fresh or dried), while spices are usually dried and produced from other parts of the plant, including seeds, berries, bark, roots and fruits. Each plant or herb has a specific quality and can be used to treat multitude of ailments and diseases. Medicinal plants like aloe, turmeric, tulsi, tea, pepper, elaichi and ginger are commonly used in a number of Ayurvedic home remedies and are considered to be the best aid among fighting ailments related to throat and skin. Tea is an aromatic beverage commonly prepared by pouring hot or boiling water over cured leaves of the *Camellia sinensis*, an evergreen shrub (bush) native to Asia. After water, it is the most widely consumed drink in the world. The composition of fresh tea flush contains various components, such as poly phenols (include catechins), caffeine, amino acids, vitamins, flavonoids, polysaccharides and fluorine. **Caffeine** is a naturally-occurring stimulant, found in several plants. Caffeine is water soluble, and is extracted into the brewed cup when preparing tea. The caffeine content of tea varies widely from one tea to the next, and depends on how the tea is brewed, but tends to be within the range of 15-70 mg per 8 ounce cup. Green tea is characterized by its high flavonoid content, mainly catechins (20-30% of the dry weight). Catechins are colorless, water-soluble flavan-3-ols and contribute with the bitter taste and astringency of the green tea infusion. The major catechins are (-)-epigallocatechin gallate (EGCG), (-)-epigallocatechin (ECG), (-)-epicatechin gallate (ECG), (-)-gallocatechin (GC), and (+)-catechin (C). The present review emphasizes on the traditional therapeutic uses of tea and varieties of tea with its recent advances in pharmacological investigations that would be a useful reference for plant drug researches, especially in India.

PC-10

Antidiabetic and toxicological evaluation of some novel oxazolone derivatives

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ABSTRACT

Oxazolones are five membered heterocyclic compounds containing oxygen and Nitrogen. It plays an important role in the development of drug discovery it possess various biologically activity viz analgesic, antiinflammatory, anticancer, and antimicrobial, antidepressant, antidiabetic and antiobesity. Oxazol-5-ones contain different reactive sites allowing for a large number of possible modifications. In view of this a series of novel oxazolone derivatives were

synthesized characterized and assayed *in vivo* to investigate their antidiabetic activities by streptozotocin-induced model in rat. All the derivatives showed considerable biological efficacy when compared to rosiglitazone standard drug. Amongst them one compd OXZ5 shows good activity, further toxicological studies of this compound was carried out. Acute toxicity studies revealed that OXZ5 derivatives are non-toxic in rats up to 5000 mg/kg, p.o.

PC-11

Analytical Method Development And Validation Of Clomiphene Citrate using RP-HPLC Spectroscopy

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ABSTRACT

Clomiphene citrate (CC) is a non-steroidal compound and has been used for the treatment of ovulation. A reverse Phase Liquid Chromatography (RP-HPLC) method was developed and validated for the simultaneous estimation of Clomiphene citrate. The different analytical parameters such as linearity, range, precision, accuracy, robustness LOD & LOQ, specificity and forced degradation. Chromatography was carried out by Isocratic technique at a flow rate 1.0 ml/min on C_{18}, 250 × 4.6 mm,10µ particle size, Nucleodur at 30 ^{o}C. The mobile phase consists of mixture of 0.02% Trifluoroacetic acid: Methanol. The UV detection wavelength was 290nm and 5 µl of sample was injected. The retention times of Clomiphene citrate was found to be 4.349 min. A linear curve was obtained in the range of 1-6 µg/ml with an equation of y= 3410. x-265.4 and R^2=0.999 for E-isomer and y= 4162. x-166 and R^2=0.999 for Z-isomer. In case of Accuracy result are within the acceptance range of 98% – 100%, indicating a good degree of sensitivity of the method towards detection of analytes in sample. The %RSD for Precision and Robustness of the method was found to be NMT 2%. The proposed method was highly sensitive, precise and accurate. Hence, the method was successfully applied for the reliable quantification of Clomiphene citrate.

PC-12

Method of Essential oils extraction and compression into volatile and non-volatile components

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ABSTRACT

Essential oils are liquid extracts from aromatic plants, which have numerous applications in

multiple industries. There are a variety of methods used for the extraction of essential oils, with each method exhibiting certain advantages and determining the biological and physicochemical properties of the extacted oils. Essential oils from different plant species contain more than 200 constituents which are comprised of volatile and non-volatile components. The application of essential oils as antimicrobial, anticancer, anti-inflammatory and anti-viral agents are due to their effective and efficient properties, inter alia. Methods: Several advanced (supercritical fluid extraction, subcritical extraction liquid, solvent free microwave extraction) and conventional (hydrodistillation, steam distillation, hydrodiffusion, solvent extraction) methods have been discussed for the extraction of essential oils. Advanced methods are considered as the most promising extraction techniques due to less extraction time, low energy consumption, low solvent used and less carbon dioxide emission.The major research studies in the field and discussed several research findings on the chemical composition of essential oils, methods of oil extraction, and application of these oils in pharmaceutical and therapeutic fields. These essential oils can be used as anticancer, antimicrobial, antiviral, and as skin permeation enhancer agents.

PC-13

Methods Of Extraction Of Pharmaceutical Excipients From Natural Resources: A Review

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ABSTRACT

Excipients are defined as „the substance used as a medium for giving a medicament". Pharmaceutical excipients can be defined as non-active ingredients that are mixed with therapeutically active compounds to form medicines. The ingredient which is not an active compound is regarded as an excipients. They are classified as binders, diluents, lubricants, glidants, disintegrants, polishing film formers and coatings agents, plasticizers, colouring, suspending agents preservatives, flavorings, sweeteners etc. Thus present article aims to throw light on their methods of extractions such as solvent extraction, alkaline extraction, ethanol extraction, fermentation etc. as they are important to maintain the physical and chemical nature of the excipients.

PC-14

Synthesis of Substituted 9-(1,2,3-Triazol-1-yl) Acridine derivative

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ABSTRACT

Acridine, $C_{13}H_9N$, is an organic compound and a nitrogen heterocycle. A number of acridine alkaloids have been isolated from the plants of family *Rutaceae*. Acridine and related derivatives bind to DNA and RNA due to their abilities to intercalate. This site of action also led to the development of acridine derivatives for modern anti-cancer chemotherapy Acridine ring nucleus substituted at 9-position with different groups shows potent anticancer, anti-inflammatory, antibacterial, antimalarial and antiviral activity. Acriflavine, Aminacrine, Ethacridine, Nitracrine and Amsacrine are the official compounds which are used in clinics. Similarly, 1,2,3-triazole based heterocycle also possess important biological activities like anticancer, antitubercular, antibacterial, anti-inflammatory, antimicrobial and antiviral. Thus, both acridines and 1,2,3-triazoles are important pharmacophores which possess different biological activities. So, with an intention to develop potent anticancer agents, we synthesized novel triazolyl-acridine derivative9-(2-(4-phenyl-1H-1,2,3-triazol-1-yl)ethoxy) acridine (MPP-1)which was confirmed by IR and ^{1}H NMR. The synthesized compound is evaluated for anticancer activity against different cell lines.

PC-15

Herbal Medicine In The Treatment Of Alzheimer Disease: A Review

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ABSTRACT

Alzheimer's disease is an age-associated, irreversible, progressive neurodegenerative disease that is characterized by severe memory loss, unusual behavior, personality changes, and a decline in cognitive function. No cure for Alzheimer's exists, and the drugs currently available to treat the disease have limited effectiveness. Neurodegenerative diseases of the human brain comprise a variety of disorders that affect an increasing percentage of the population. Some of these are age dependent (e.g. Alzheimer's and Parkinson's diseases) and some are infection dependent, e.g. human immunodeficiency virus (HIV/AIDS). Alzheimer's disease (AD) is a complex, multifactorial, heterogeneous mental illness, which is characterized by an age-dependent loss of memory and an impairment of multiple cognitive functions. In traditional practices of Ayurvedic and Chinese medicine, numerous plants have been used to treat cognitive disorders, including neurodegenerative diseases such as Alzheimer's disease. An ethno-pharmacological approach has provided leads to identifying potential new drugs from plant sources, including those for cognitive disorders. Herbal remedies that have demonstrable anti-alzheimer activities have provided a potential to psychiatric pharmaceuticals and deserve increased attention in future studies. Present article reviews different plants and their active

constituents that have been used in treatment of AD and for their reputed cognitive enhancing effects.

PC-16

Anti-Depressant Activity Of *Lagenaria Siceraria*: A Review

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ABSTRACT

In current stressful routine life, depression has become the second most common chronic condition in clinical psychology practice. *Lagenaria siceraria* (Cucurbitaceae), popularly known as bottle gourd, louki or ghiya, is a climbing plant, which bears hard-shelled and bottle-shaped gourds as fruits. Being rich in vitamins, iron and minerals, it is forms an excellent diet for people having digestive problems. Since it contains low calories, bottle gourd is an awesome foodstuff for shedding extra calories. The fruit possesses diuretic, emetic, and refrigerant properties. Extract of the seeds show antibiotic activity. The juice is helpful in constipation, premature graying hair, urinary disorders and insomnia. In the light of above, the present study was undertaken to test the antidepressant potential of *Lagenaria siceraria* juice. Furthermore, *Lagenaria siceraria* juice inhibited the monomine oxidase (MAO) enzyme and reduced significantly malondialdehyde (MDA) levels. These findings reveal the anti-depressant potential of ghiya.

PC-17

Novel method development and validation for UV–visible spectrophotometric analysis of methscopolamine bromide

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ABSTRACT

The aim of the research work presented here is to develop a novel approach towards precise and effective analytical method for qualitative estimation of methscopolamine bromide, a drug of choice to treat peptic ulcer. The absorbance of methscopolamine bromide was low even at higher concentration as obtained from U.V. visible spectroscopical method. Therefore it was required to enhance absorbance value to precisely perform qualitative analysis by different approaches. In this process, novel attempts were made to develop a new method for estimation such as addition of chromophores and use of colorimetric techniques but all of attempts did not produce satisfactory results. At last encouraging results including enhanced absorbance were

obtained by using sodium picrate at λ_{max} of 440 nm and linearity was observed within the range of 1-5 µg/ml with a regression coefficient of 0.984. The method was then validated to ensure the reproducibility as per ICH (International Conference on Harmonization) guidelines. The method was successfully employed for determination of methscopolamine bromide with good linearity, precision, robustness and specificity. The proposed method can be used for quality control during routine quality assessment of bulk drug and does not involve use of residual solvents which ensures that the method is novel and economic which may be used by pharmaceutical industries for commercial utilization.

PC-18

Manilkara Hexandra

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ABSTRACT

Mimusops hexandra commonly known as Rayan and Khirni is an evergreen tree species with a long history of traditional medicinal uses in south Asia especially in western and central India, belongs to family Sapotaceae. The genus *Manilkara*includes 135 plants that are distributed Worldwide. *Sapotaceae* family consist of 58 genus and just about 1250 species with morphological variation, ranging from shrubs to medium, and giant trees. Brazil comprises of 11 genera, and 231 species, covering 1 endemic genus, and 104 endemic species.The plant has been famous for its curative properties and has been put to use for treatment of various diseases suchlike ulcer, bronchitis, jaundice, fever, hyper dyspepsia, arthritis and alimentary disorders. A record of the literature shows extracts and metabolites from this plant having pharmacological properties such as anti–inflammatory, antiulcer, aphrodisiac, alexipharmic, anthelmintic, antibacterial, and free radical scavenging activity. Apart from medicinal uses, plant has high scale value because of its edible and nutritive fruit, useful wood, latex and bark and contribute substantial livelihood support to local.

PC-19

Quantum Dots as Theranostic Agents

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ABSTRACT

Luminescent nano scale semiconductor crystals or nano-particles with unique optical and electronic properties. Quantum dots have tunable optical properties possessing characteristics

such as good chemical and photo-stability, high quantum yield and size tunable light emission .It act as nano theranostic platform for simultaneous sensing, imaging and therapy by acting as fluorescent labels. QDs can be more than bio-probes or labels for biological imaging and cellular studies. Recently developed gadolinium-doped carbon quantum dots are being used in MRI as diagnostic agents. Bio-conjugated quantum dots are excellent fluorescent probes and nano vectors designed to transverse across the blood brain barrier and visualize drug delivery inside the brain. In cancer ultra small QDs functionalized with PEG and hyaluronic acid targets the over expressed glycoprotein CD44 in cancer cell and doxorubicin was loaded on to ph responsive ZnO QD as model drug for the study, which releases its payload under acidic intracellular conditions. Thus in total Quantum dots have emerged as a better option in terms of theranostic agents providing a better field to diagnose, treat and understand diseases.

PC-20

Ethnopharmacology and Pharmacotherapeutic significance of *Heliotropium indicum* Linn.

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ABSTRACT

Plants are one of the largest sources of herbal medicines. *Heliotropium indicum* Linn. is a common plant that grows like a weed, commonly called as 'Indian heliotrope'.The plant is an annual, erect, branched hirsute shrub about 15 to 50 cm high. The leaves are always opposite or alternate, ovate to oblong-ovate, somewhat hairy, acute or acuminate, base decurrent along the petiole and about 3 to 8 cm long. It is well known for its long history of traditional medicinal uses along many countries in the world. Widespread literature study reveals that the plant possess antitumor, uterine stimulant effect, antifertility, anti-microbial, anti-inflammatory, anti-ulcer, anti-glaucoma, anti-tuberculosis, ant plasmodial, wound healing, analgesic and diuretic activities. Vitamins like ascorbic acid, retinol, tocopherols, riboflavin, thiamine and niacin, triterpenes, steroids, essential or volatile oil were also reported in the plant. Many pyrrolizidine alkaloids have been isolated from different parts of the plant such as Heliotrine, Indicine-N-oxide Retronecine Quinidine, Putrescine, Spermine, Spermidine and Lindelofidine, which accounts for its medicinal uses.

PC-21

Anti Obesity effect of Natural Products and possible therapeutic targets to contain Obesity

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ABSTRACT

Obesity has become a public health burden with significant and profound impact on morbidity, mortality, and cost of health care. Indeed, obesity facilitates the development of metabolic disorders (e.g. diabetes, hypertension), and cardiovascular diseases in addition to chronic diseases (e.g. stroke, osteoarthritis, sleep apnea, cancers, and inflammation-based pathologies). Among these, pharmacotherapy is the most common, although numerous drugs used to reduce weight have associated side effects. Therefore, Alternative approaches that are safe and well tolerated, and that can lower the risks associated with obesity are urgently required. A variety of phytochemicals such as polyphenols, alkaloids, terpenoids, flavonoids, tannins, saponins, glycosides, steroids and proteins present in plants and their products are key factors in the treatment of several disorders. A good number of phytoconstituents such as ellagic acid guggulsterone, quercetin, ferulic acid, hydroxycitric acid, apigenin, gymnemic acid, caffeine, theophylline, ephedrine, piperine and catechins have been reported to possess anti-lipidaemic and anti-obesity properties. The anti-obesity effects of these compounds are mediated by regulation of various pathways, including lipid absorption, energy intake and expenditure, increasing lipolysis, and decreasing lipogenesis, differentiation and proliferation of preadipocytes.

PC-22

Molecular Dynamics Simulations- An Important Tool In Drug Design And Medical Innovation

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ABSTRACT

OBJECTIVES: An Effective Route in Drug Design- Molecular Simulation Studies **METHODS**: Molecular dynamics (MD) is a computational tool to enhance the progress of a molecular system. The method needs an interaction potential from which interatomic forces can be calculated. MD simulations sample the configuration space and generate values that follows molecular movements as a function of time. Originally developed to study properties of the liquid state, MD simulations are nowadays routinely applied to macromolecular systems of biological and pharmaceutical interest. Applications include the refinement of experimentally determined structures, conformational analysis and protein homology modelling, the elucidation of biochemical and biophysical mechanisms at the atomic level, molecular docking of biomolecular complexes and a variety of approaches for calculating free energy changes. Most of these tasks are of utmost importance in structure-

based drug design.

CONCLUSION: This is used to understand how a ligand, typically a substrate or a regulator, binds to its macromolecular counterpart is a key issue in the understanding of function itself, and it is the basis of structurally driven drug design.

PC-23

Comparative Molecular Similarity Indices Analysis (Comsia) - The Changing Dynamics Of Drug Design

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ABSTRACT

OBJECTIVES: Usefulness of CoMSIA in drug design

METHODS: Comparative molecular similarity indicesanalysis (CoMSIA) is a ligand-based, alignment-dependent, and linear 3D-QSAR method that is a modified version of CoMFA. The approaches of CoMFA and CoMSIA are almost similar except for molecular similarity, which is also computed in the case of CoMSIA. The usual energy grid box is created, and similar probes are positioned throughout the grid lattice. The computation is mostly done on steric, electrostatic, hydrophobic, and hydrogen-bonding properties. The mentioned properties are computed at regularly spaced grid points corresponding to a particular descriptor, and these are significant in correlation with the biological response.

CONCLUSION:This technique is most commonly used in drug discovery to find the common features that are important in binding to the relevant biological receptor. In CoMSIA, both steric and electrostatic features, hydrogen bond donor, hydrogen bond acceptor and hydrophobic fields are considered.

PC-24

Computer Aided Drug Design- A Computational Tool In Drug Design

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ABSTRACT

The Computer Aided Drug Design has seen a tremendous growth in recent past years in the field of Drug Discovery and Development. This has given an understanding of protein-ligand and drug-receptor interaction. This technique saves a lot of time and energy. A large number of new molecules and nuclei have come out of high thorough put screening in pharmaceutical industry. The ability of CADD to predict the ADME and biological activity of yet to be

synthesized molecules through the use of derived molecular descriptors has made this approach popular and powerful. After a number of lead compounds have been identified, structure based drug design techniques effectively refine their 3D structures to improve their binding to protein active sites through lead and pharmacophore optimization. This is followed by biological screening and, if need be, synthesis of some new derivatives. Researchers and industrialists are actively involved in development of computational methods that will improve effectiveness and efficiency of drug discovery and development process, decrease use of animals, and increase accuracy and precision.

PC-25

Clinical Aspects Of Sulfonamides – An Overview

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ABSTRACT

Sulfonamides derived from sulfanilamide (*p*-aminobenzenesulfonamide) are commonly referred to as sulfa drugs. The sulfa drugs are still important as antimicrobial agents, although they have been replaced in many systemic infections by the natural and semisynthetic antibiotics. They are of great value in developing countries where problems of storage and lack of medical personnel make appropriate use of antibiotics difficult. They are especially useful in urinary tract infections, particularly the combination of sulfamethoxazole with trimethoprim, and the combination of sulfamethoxazole with trimethoprim is of value in treatment of a number of specific microbial infections. The introduction of this combination (cotrimoxazole) in the late 1960s (1973 in the United States) resulted in increased use of sulfonamides. Sulfamethoxazole with trimethoprim is currently utilized as first-line therapy and for prophylaxis of pneumonia caused by the fungus *Pneumocystis carinii*, a common infection in AIDS patients. The sulfonamides also remain clinically useful in the treatment of chancroid, lymphogranulomavenereum, trachoma, inclusion conjunctivitis, and the fungus-related nocardiosis. The sulfone, dapsone, remains an accepted treatment for all forms of leprosy. Currently used sulfonamides vary widely in their absorption, distribution, and excretion patterns. Relationships to the degree of ionization, lipid–water solubility, electron distribution values, and protein binding have all been observed. Mutations and/or amino acid duplications near the active site of the dihydropteroate synthase (DHPS) enzyme result in an inability to bind the sulfonamides resulting in resistance. The most common method for the preparation of sulfonamides is by the action of *N*-acetylsulfanilyl chloride with the appropriate amine. A small percentage of patients treated with sulfonamides have shown toxic effects, such as drug fever, rashes, mild peripheral neuritis, and mental disturbance. Administration of sulfonamides can cause hypersensitivity reactions, but in general, use of sulfonamide therapy

is considered relatively safe.

PC-26

Pharmacophore Mapping – An Important Computational Approach In QSAR

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ABSTRACT

A very important part of drug design is prediction of binding of ligand with target macromolecule. A reasonable qualitative prediction of binding can be made by specifying the spatial arrangement of a small number of atoms or functional groups. Such arrangement is called pharmacophore. The pharmacophore search finds molecules with different overall chemistries. A common use of pharmacophores is to search 3D databases for molecules that contain the pharmacophore. In modern computational chemistry, pharmacophores are used to define the essential features of one or more molecules with the same biological activity. Typical pharmacophore features for a molecule are hydrophobic, aromatic, hydrogen bond acceptor, hydrogen bond donor, cation, or an anion. The features need to match different chemical groups with similar properties, in order to identify novel ligands. A welldefinedpharmacophore model includes both hydrophobic volumes and hydrogen bond vectors with distance constrained among chemical features. Generated pharmacophore models can be used in two ways: For designing of new molecules and to search the large databases for generation of new molecules.

PC-27

Anti-Inflammatory Activity Of Natural Dietary Flavonoids

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ABSTRACT

Over the past few decades, inflammation has been recognized as a major risk factor for various human diseases. Acute inflammation is short-term, self-limiting and it's easy for host defenses to return the body to homeostasis. Chronic inflammatory responses are predispose to a pathological progression of chronic illnesses characterized by infiltration of inflammatory cells, excessive production of cytokines, dysregulation of cellular signaling and loss of barrier function. Targeting reduction of chronic inflammation is a beneficial strategy to combat several human diseases. Flavonoids are widely present in the average diet in such foods as fruits and vegetables, and have been demonstrated to exhibit a broad spectrum of biological activities for human health

including an anti-inflammatory property. Numerous studies have proposed that flavonoids act through a variety mechanisms to prevent and attenuate inflammatory responses and serve as possible cardioprotective, neuroprotective and chemopreventive agents. In this review, current knowledge and underlying mechanisms on anti-inflammatory activities of flavonoids and their implicated effects in the development of various chronic inflammatory diseases will be summarised.

PC-28

Pharmacological Importance Of Brassica Vegetables

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ABSTRACT

Brassica or Cruciferous vegetables are the most important genus of the Brassicaceae family and consist of thirty-seven different species. Brassica vegetables contain low fat, high vitamin, mineral and fibre as well as various phytochemicals. These vegetables contain low fat, high vitamin, mineral and fibre, as well as useful phytochemicals. In addition, this vegetable group contains well known antioxidants such as vitamins C and E, carotenoids and antioxidant enzymes such as catalase, superoxide dismutase (SOD) and peroxidase, which are found in fresh vegetables. Moreover, these vegetables contain sulphur-containing glucosinolates, anthocyanins, flavonoids, terpenes, S-methyl cysteine sulfoxide, coumarins and other small compounds, which are useful plant metabolites. These compounds stimulate the immune system, reduce cancer risk, inhibit malign transformation and carcinogenic mutations in addition to reduce the proliferation of cancer cells. They prevent oxidative stress, induce detoxification enzymes, stimulate immune system, decrease the risk of cancers. They have effect on numerous chronic–degenerative diseases, together with cancer, cardiovascular diseases, neurodegeneration and diabetes.

PC-29

Nardostachys Jatamansi As A Potential Herb For Cardiovascular Diseases

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ABSTRACT

Cardiovascular disease is the leading cause of decease in both developed and developing countries. Myocardial infarction is the speedy development of myocardial necrosis caused by critical imbalance between the oxygen supply and the demand of the myocardium. The major abnormalities noticed in myocardial infarction are lipidemia, peroxidation, and loss of plasma

membrane integrity.In recent times many medicinal plants provide valuable therapeutic agents for the treatment of cardiac diseases both in modern medicine and by the traditional system throughout the world. This review is undertaken to evaluate the cardioprotective effect of Nardostachysjatamansi (NJ) herb DC belongs to the family Valerianaceae of plant taxa. Nardostachysjatamansi DC is an endangered, primitive and therapeutic herbal agent belonging to family Valerianaceae. Nardostachysjatamansi DC is a small perennial, rhizomatous herb which grows in steep, moist, rocky, undisturbed grassy slopes of India, Nepal, China and Bhutan from 2300 m to 6000 m above sea level. The plant has a rich history of medicinal use and has been valued for centuries in Ayurvedic (Indian) and Unani (ancient Greco-Arab) systems of medicine. It is also used as folk medicine for hypolipidemic activity, hepatoprotective and also as a diuretic and antiseptic agent.

PC-30

A Review on Phytopharmacological potential of *Lysimachia Foenum Graecum* Plant

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ABSTRACT

The plant *Lysimachia foenum graecum* belongs to Family Primulaceae. *Lysimachia foenum-graecum* is a perennial plant that can grow up to 0.50 metres tall. It is harvested from the wild for local use as a medicine and source of materials. Lysimachia foenum-graecum, an herbal plant, has been primarily used as a spice, insectifuge, and pest repellent. *Lysimachia foenum-graecum* extract (LFE) has been used as a traditional oriental medicine to treat various diseases, such as, colds, rheumatism, headaches, toothaches, and digestive dysfunctions. The extract from Lysimachia foenum graecum (LFE) has been known to posses various instructive characters including anti-oxidant, anti-obesity, fungicidal activities. Triterpene saponins are found in abundance from the aerial part of Lysimachia foenum-graecum. Ten out of eleven triterpene saponins isolated from Lysimachia foenum-graecum were found to have novel structures and have been named as foenumoside A-E, lysimachiagenoside A, C-F. Anti-inflammatory effect of foenumoside E and anti-oxidant effects of the methanol extract of L. foenum-graecum were reported recently.

PC-31

2D QSAR Study Of Potent GSK-3β Inhibitor For Treatment Of Alzheimer's

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ABSTRACT

Aim: To unravel the information encoded by molecular structure of compounds, classical physicochemical descriptors based QSAR study performed on a data set of GSK-3β inhibitor.
Materials and methods: A battery of statistical methods implied in present study including linear analytical method like multiple linear regression (MLR), partial least square (PLS) and non-linear approach like artificial neural networks (ANN). The developed models further subjected to validation using various statistical tools and methods which confirmed their high predictability and precision.
Results: The predictive power and robustness of the model was developed through certain statistical parameters and resultant model found to be excellent statistical relevance as depicted by value of the standard statistical parameters such as (MLR), s: 0.367, F:53.06, r: 0.910, r^2:0.828, r^2CV: 0.780,PLS,r^2:0.82 and NN,r^2:0.81for training set. Further evaluation done externally by test set, r^2: 0.71(MLR), 0.71(PLS) and 0.74 (ANN) analyses. The generated model provided valuable insight to the relevance of three descriptors, total dipole moment, bond lipole and kappa 3.Thus, implied that certain changes in the substitution pattern can bring dramatic increase in the GSK-3β inhibitory activity.
Conclusion: The developed models explains the dependence of bioactivity on the molecular structures and also suggest the changes based on molecular descriptors if incorporated designed novel molecules can lead to enhanced inhibitory activity profile against GSK-3β enzyme.

PC-32

2D QSAR study on Spiro-Derivatives as Acetyl Co-A Carboxylase Inhibitors for the Treatment of Metabolic Syndrome

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ABSTRACT

Acetyl Co-A Carboxylase (ACC 2) is a crucial rate limiting metabolic enzyme, which plays a vital role in fatty acid metabolism and is an attractive target for drug discovery as its inhibition has demonstrated promising therapeutic potential for the treatment of several manifestations of metabolic syndrome. A series of novel Spiro-derivatives were subjected to two dimensional quantitative structure activity relationship (2D-QSAR)study using the TSAR software (3.3).A dataset of 50 compounds was taken and divided randomly into training and test set. The multiple linear regression (MLR), partial least square (PLS) and feed forward neural networking (FFNN) analysis generated excellent models with good predictive ability that were validated by leave one out method of cross validation and internal test set prediction. The most statistically significant model showed values of regression coefficient (r=0.91), correlation coefficient (r^2=0.83), cross validation (r^2_{cv}=0.77), standard deviation (s=0.32) and degree of

freedom (F=66.64). The model signified that the two essential descriptors – Molecular mass (whole molecule), steric in nature, which indicates the general size of the molecules and Number of H-bond donor (whole molecule), an electronic descriptor, that explains the extent of lipophilicity are responsible for exhibiting the biological activity.

PC-33

Development and Antimicrobial Evaluation pyrimidin‑2‑ol/thiol/amine analogues

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ABSTRACT

Pyrimidine is an aromatic heterocyclic moiety containing nitrogen atom at 1st and 3rd positions and play an important role to forms the central core for different necessity of biological active compounds, from this facts, we have designed and synthesized a new class of pyrimidin-2-ol/thiol/amine derivatives and screened for its in vitro antimicrobial activity.

The synthesized pyrimidine derivatives were confirmed by IR, 1H/13C-NMR, Mass spectral studies and evaluated for their in vitro antimicrobial potential against Gram positive (*S. aureus* and *B. subtilis*), Gram negative (*E. coli, P. aeruginosa* and *S. enterica*) bacterial strains and fungal strain (*C. albicans* and *A. niger*) by tube dilution method and recorded minimum inhibitory concentration in μM/ml. The MBC and MFC values represent the lowest concentration of compound that produces in the range of 96–98% end point reduction of the used test bacterial and fungal species.

In general all synthesized derivatives exhibited good antimicrobial activity. Among them, compounds 2, 5, 10, 11 and 12 have significant antimicrobial activity against used bacterial and fungal strains and also found to be more active than the standard drugs.

PC-34

Pedalium Murex

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ABSTRACT

Bada Gokhru (*Pedalium murex L*.) is perhaps the uppermost useful traditional medicinal plant in India. *Pedalium* is a genus of plant in the Pedaliaceae family including one species, *Pedalium murex* Linn (*P.murex*). It is often called Gokhru. It is distributed in India, Pakistan, Sri Lanka and tropical Africa. It is currently well-considered as a valuable source of unique natural products for development of medicines contrary to various diseases and also for the

development of industrial products. Various parts of the plant are used to relief various ailments like, cough, cold and as an antiseptic. Interestingly, *P. murex* is described traditionally to have a marvellous healing in patients with reproductive disorders which are mainly impotency in men, nocturnal emissions, gonorrhoea as well as leucorrhoea in women. The plant has also profited in complications like urinary track disorder along with gastro intestinal tract disorders. Phytochemically the plant is well known for the presence of appreciable amount of diosgenin and vanillin which are regarded as an significant source and advantageous starting materials for synthesizing steroidal contraceptive drugs and isatin alkaloids.

PC-35

Synthysis And Biological Evaluation Of Substituted Quinoline Derivatives As Antimicrobials

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ABSTRACT

Quinoline is well-known bioactive moiety which exhibit various pharmacological properties. There is an ongoing research for novel quinoline derivatives in the search for novel pharmaceuticals. Antimicrobial drugs suppress the growth of bacteria however, bacteria develop multiple resistance mechanisms to survive. Novel antibiotics that inhibit highly lethal Gram-positive bacterial infections are still urgently needed. Therefore, it is necessary to develop antimicrobial agents with improved potency. The structural modifications in quinoline ring have shown astounding results against antibiotic-resistant micro-organisms. Aniline was used as a starting material to synthesize substituted Quinoline. The synthesized compounds were evaluated for in-vitro antimicrobial studies using agar diffusion method against different resistant microorganisms and showed promising results. Further studies were performed to solve many problems like poor patient compliance, lower effectiveness etc. and satisfactory results were observed.

PC-36

Identification of novel lead from natural sources using molecular docking studies for development of selective human matrix metalloproteinase-9 (*h*MMP-9) inhibitors as potent diabetic wound healing agents

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ABSTRACT

Diabetic wounds are serious health issue and often fail to heal leading to limb amputation that makes life of patient miserable. Delayed wound healing has been characterized by increase in matrix metalloproteinase-9 (MMP-9). Thus research throughout the world has been going on to develop selective MMP-9 inhibitors for aiding diabetic wound healing. Bioactive constituents from natural sources always served as potential leads in drug development with high rates of success. Considering the need of novel selective MMP-9 inhibitors and importance of natural bioactive compounds in drug development we have screened a library of bioactive constituents from plant sources that were effective in diabetic wound healing on human MMP-9 (*h*MMP-9) using molecular docking studies. Screened constituents are ranked according to their dock score, ΔG value (binding affinity) and Ligand efficiency evaluated from FleXX docking and Hyde scoring modules available with drug designing platform LeadIT. Rhamnocitrin showed highest correlation between dock score, ΔG value (binding affinity) and Ligand efficiency was further explored for binding interactions with *h*MMP-9. Overall study suggest that rhamnocitrin is sufficiently decorated with both hydrophilic and hydrophobic substitutions that perfectly block *h*MMP-9 and act as a potential lead in design and development of selective *h*MMP-9 inhibitors.

PC-37

Identification of novel lead from natural sources using molecular docking studies for development of selective bacterial DHFR inhibitors as potent antibacterial agents

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ABSTRACT

Evident difference between eukaryotic and prokaryotic Dihydrofolatereductase (DHFR) make it an interesting target for development of novel antibacterial agents. Bioactive constituents from natural sources served as potential leads in drug development with high rates of success. *Staphylococcus aureus* is a widely distributed pathogen that involved in the pathogenesis of various deadly bacterial infections and acquired considerable resistance among currently available antibacterial agents. Considering the importance of DHFR in antibacterial drug development, natural products and emerging resistance of *Staphylococcus aureus* among available antibacterial agents we have screened a library of recently isolated bioactive constituents from plant sources that were active against *Staphylococcus aureus*using molecular docking studies on *Staphylococcus aureus*DHFR (*sa*DHFR). Screened constituents are ranked according to their dock score, ΔG value (binding affinity) and Ligand efficiency evaluated from FleXX docking and Hyde scoring modules available with drug designing platform LeadIT. Top ranked constituent myricetin was further explored for binding interactions with *sa*DHFR. Overall study suggest that myricetinis sufficiently decorated with both hydrophilic

and hydrophobic substitutions that perfectly block the catalytic process by *sa*DHFR and act as a potential lead in design and development of selective *sa*DHFR inhibitors.

PC-38

Herbal Induced Hepatoprotection And Hepatotoxicity

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ABSTRACT

Ancient medicines, methodologies and ideologies are taking over the world again with its benefits and remedies. It has been predicted that till date total 215,644 species of plants out of 298,000 have been catalogued on earth and India covers about 11.8 per cent of the world's flora therefore opportunities for newer discoveries. Presence of multiple constituents in plant, influence both the factors i.e. toxicity and protection on organs. Liver being an important organ for metabolism and detoxification, these toxic effects of some species leads to hepato toxicity. Hepatic disorders/toxicity can occur by several mechanisms like Cytochrome P450 activation, lipid peroxidation, Induction of nitric acid synthase, mitochondrial dysfunction, activation of pro-inflammatory mediators and Bile acid-induced liver cell death. Herbal species that tends to produce hepatotoxicity are *Atractylis gummifera, Azadirachta indica, Amanita Phalloides, Piper methysticum,* etc. For a long time herbal drugs have been used in the treatment of liver diseases caused by viral hepatitis, alcohol, toxic drugs and plant toxins. However, there are number of scientifically proven hepatoprotective herbal drugs like *Glycyrrhiza glabra, Ocimum sanctum, Parkinsonia aculeate, Solanum nigrum, Pterocarpus santalinus, Phyllanthus niruri* etc. which are widely used for the treatment of liver disorders. This review emphasizes on both sides of the coin like crucial aspects of phytoconstituents with reference to their hepatoprotective as well as hepatotoxic effects linked to use of herbal preparations.

PC-39

Phyto-constitutional constituents and diverse pharmacological importance of *Curculigo orchioides*

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ABSTRACT

Curculigo orchioides Gaerten belongs to the family Amaryllidaceae. The plant is native to India, and holds a special position as a potent adaptogen and aphrodisiac in Ayurvedic system

of medicine. It is an important ingredient of many Ayurvedic preparations and is considered to have aphrodisiac, immunostimulant, hepatoprotective, antioxidant, anticancer and antidiabetic activities. Various chemical constituents like mucilage, phenolic glycosides, saponins and aliphatic compounds from the plant have been reported. The plant is also considered as an important component of various herbal preparations of the Chinese and Kampo medicine. The present review is an attempt to enumerate various biologically tested activities and evaluation of different phytochemicals present in this important medicinal plant. Curculigoside (CUR), one of the main bioactive phenolic compounds in the rhizome of *C. orchioides* Gaertn, has been shown to have significant antioxidant properties by scavenging superoxide radicals in the normal systems, and anti-apoptotic activities in H_2O_2-treated vascular endothelial cells.

PC-40

Preliminary Phytochemical Screening And Antimicrobial Activity Of *Cissus Quadrangularis* Stem Extract

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ABSTRACT

Objective: The objective of the research is to evaluate Preliminary Phytochemical screening.and Antimicrobial activity of of *Cissus quadrangularis* stem extract.
Methodology: Plant parts were collected then they were sent for authentification followed by drying. Extracted the sample and solubility of drug was checked. Phytochemical screening test were performed and Antimicrobial activity of the drug was checked by preparing the agar plates and by determination the zone of inhibition.
Results: In our study we found that there was presence of phytosterols,tannins and flavonoids and the zone of inhibition for E.coli for the sample of hydroalcohlic extract, DMS and standard drug.
Conclusion: Antimicrobial activity concludes the utilization of Cissus *quadrangularis* in development of novel antibacterial compounds.

PC-41

Modification of natural occurring polymers in gums for novel drug delivery systems

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ABSTRACT

Naturally occurring polymers are presently of major importance among that polysaccharides

occupy larger position due to their easy use, eco- friendly and non-toxic nature. Gums are naturally occurring constituents in plants, which are basically cheap and abundant. The development of delivery systems using natural polymers such as, gums offers different advantages, such as, biocompatibility, biodegradability and cost efficiency. They have miscellaneous applications as thickeners, emulsifiers, viscosifiers, sweeteners etc. in drug release modifiers in pharmaceutical dosage forms. It effects drug release and should be compatible, non-toxic, stable, commercial etc. The gum act as good mucoadhesive polymer, disintegrating agent and binder. This also shows that it has high potential intended for manufacturing applications especially in food, textiles and pharmaceutical industries. This need to be amended to modify their physicochemical properties. Few gums in their putative form are required successfully function as drug release modifiers in dosage forms due to their high swelling index /solubility at acidic pH. This review is meant to give the idea about the amendment of gums through derivatization of functional groups, grafting with polymers and cross-linking with ions. Hence, gums need to be modified to change their physicochemical properties.

PC-42

Response surface methodology to optimize the concentration and enhancement of *In Vitro*antioxidant potential of *Camellia sinensis* and *Withania sominifera*

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ABSTRACT

The main objective of this study was to determine the antioxidant potential of plants *Camellia sinensis* (Kangra green tea) and *Withania sominifera* (Ashwagandha) in synergistic manner. 2,2-diphenyl-1-picrylhydrazyl (DPPH) free radical scavenging assay and Hydrogen per-oxide scavenging assay were used to analyze the antioxidant potential with the help of response surface methodology. Phytochemical analysis of these plant extracts revealed the presence of various bioactive compounds *viz*., flavanoids, alkaloids, saponins, tannins, carbohydrates, terpenoids and glycosides. Further confirmation for the presence of phytochemicals was done with the help of HPLC. The central composite design (CCD) of response surface methodology was used to optimize the different concentrations of *Camellia sinensis* (Kangra green tea)and *Withania sominifera* (Ashwagandha). This design has generated different 13 combinations of various plant concentrations. Screening of 13 different combinations of various concentrations was done through DPPH scavenging assay followed by statistical analysis of data. Further validation of results was done by measuring the antioxidant potential of most bioactive extracts by hydrogen peroxide scavenging method. Screening of 13 different combinations for antioxidant potential revealed the samples with highest percentage scavenging in aqueous

(68%), methanolic (77.0833%), and ethanolic (75.9%) extracts. Data were subjected to analysis of variance and a three-dimensional response surface plot for highest activity was generated. Hydrogen peroxide scavenging assay of these plant extracts revealed a significant enhancement in the antioxidant potential of methanolic extract of *Camellia sinensis* (Kangra green tea) when used in mixture with *Withania sominifera*.

PC-43

An Integrated Review On Degree Of Crystallinity In Calcium Fenoprofen

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ABSTRACT

Fenoprofen Calcium is the calcium salt form of fenoprofen, a propionic acid derivative with analgesic, non-steroidal antiinflammatory and antirheumatic properties. Samples of calcium fenoprofen crystals have been prepared on laboratory, pilot and production scales, some by conventional aqueous precipitation, others under conditions designed to increase or decrease the degree of crystallinity. They were characterized by X-ray powder diffraction, scanning electron microscopy, Fourier transform infrared spectroscopy, surface area by nitrogen sorption, agglomerate size by Coulter counter, true density, sodium content, powder dissolution rates and heats of solution. No evidence of polymorphic variation was found. Most precipitation conditions gave partially fused agglomerates of primary crystals. Relative degrees of crystallinity were assessed from heats of solution. The more perfectly crystalline samples gave relatively high endothermic heats of solution coupled with low powder dissolution rates. Lattices with high levels of disruption, or low crystallinity, gave lower heats of solution coupled with enhanced powder dissolution rates. Heats of solution make a significant contribution to the overall characterization and to understanding batch-to-batch variation, and they relate well to the observed powder dissolution rates.

PC-44

A Review on Phytopharmacological potential of *PENNISETUM GLAUCUM* Plant

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ABSTRACT

The plant *Pennisetum glaucum* belongs to Family poaceae. Pearl Millet (*Pennisetum glaucum*), also known as Bajra, is a cereal crop grown in tropical semi-arid regions of the world primarily in Africa and Asia. Bajra is well adapted to production systems characterized

by low rainfall (200-600 mm), low soil fertility, and high temperature, and thus can be grown in areas where other cereal crops, such as wheat or maize, would not survive. It is also one of the most drought resistant crops among cereals and millets. Pearl millet is one of the four most important cereals (rice, maize, sorghum and millets) grown in the tropics and is rich in iron and zinc, contains high amount of antioxidants and these nutrients along with the antioxidants may be beneficial for the overall health and wellbeing. Pearl millet also has functional properties; it has a low glycemic index and therefore it can be used as an alternative food for weight control and to reduce the risk of chronic diseases, such as diabetes. It is also used in heart disease, plant appetizer and as tonic.

PC-45

Herbal Approach To Treat Tobacco Addiction

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ABSTRACT

Cigarette smoke contains over 4,000 chemicals, including 43 known carcinogenic compounds and 400 other toxins, majorly includes ingredients like nicotine, tar, and carbon monoxide, as well as formaldehyde, ammonia, hydrogen cyanide, arsenic, and DDT. Worldwide, tobacco use is estimated to kill about 5 million people annually, accounting for 1 in every 5 male deaths and 1 in 20 female deaths of those over age 30. On current smoking patterns, annual tobacco deaths will rise to 10 million by 2030. The future of treatment resides in improvement in patient matching to treatment, combination or novel drugs, and viewing nicotine addiction as a chronic disorder that might need long-term treatment. A range of herbal medicines and their combinations are used in the treatment of addictive problems affecting lungs congestion, fight depression, and sleep disturbances. Herbs and supplements such as Lobelia, St. John's Wort, Oat Straw, Valerian, Ginseng, Chamomile Ashwagandha, Jaiphal , Ginger , Shankhpushpi, Kanphool, Brahmi, Jatamansi, Sarpgandha, Aloe Vera, Punarnava, Long pepper and Tulsi are used to treat symptoms of addiction. The idea behind herbal remedies is to help reduce the effects of nicotine addiction and withdrawal symptoms without any side effects.

PC-46

Development And Validation Of Hptlc Method For Estimation Of Ursolic Acid And Oleanolic Acid In Methanolic Extract Of *Dragea Volubilis*

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ABSTRACT

Objective: The purpose of the present study of is to develop and validate the HPTLC method for estimation of ursolic acid and oleanolic acid in methanolic extract of *Dragea volubilis (DV)* by using TLC densitometry technique.

Materials and methods: Shade dried leaves obtained from *Dragea volubilis* were coarsely powdered sequentially extracted in a Soxhlet extractor with petroleum ether and methanol. The solvent was collected by using rotary evaporator. The extract was further studied using TLC and HPTLC for quantitative analysis. A mixture of Toluene: ethyl acetate (4:1) for ursolic acid and Toluene: ethyl acetate (3:2) for oleanolic acid were used as a mobile phase. The chromatography was performed on a TLC plate precoated with silica gel GF_{254} and the developed TLC plate were visualized and quantified at 580 nm. An spraying reagent comprising 0.5% anisaldehyde was used to detect the spots after heating for 2 min. at 105ºC for ursolic acid and oleanolic acid.

Result: The results were computed in the *dragea volubilis* extract (DVE) having $R_{f.}$ value 0.25 and 0.3 respectively for ursolic acid and oleanolic acid. The quantity of ursolic acid and oleanolic acid in the methanolic extract was found to be 0.0512 ± 0.0001 ng and 0.0306 ± 0.0000 ng. The method was validated for Instrumental precision, Repeatability,Coefficient of determination (r^2), Linearity range (ng), LOD (ng), LOQ (ng),Intra-day and Inter-day precision respectively for both ursolic acid and oleanolic acid ,all the parameters were found to within the acceptable range as per the ICH guidelines. The recovery values obtained were 95.85 to 99.28% with an average percentage recovery of 99.46% showing the accuracy of the method.

Conclusion: The developed HPTLC method was found to be prompt, cost effective, precise accurate and reproducible for the qualitative as well as quantitative analysis of ursolic acid and oleanolic acid in methanolic extract of *Dragea volubilis*.

PC-47

Role Of Electrochemistry In Evaluation Of Antioxidant Potential Of Biological Compounds

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ABSTRACT

The study of antioxidants has become a topic of great relevance in the biomedical scientific world and the publications mentioning antioxidants have tripled in the past decade. Accordingly, there has also been a development of a large number of methods or assays for the determination of the antioxidant capacity of a variety of molecules. In order to

identify and quantify this capacity, some techniques are used, based on synthetic radicals capture; and they are monitored by UV–vis spectrophotometry. Electrochemical techniques are emerging as alternatives, given some of the disadvantages faced by spectrophotometric methods such as the use of expensive reagent not environmentally friendly, undefined reaction time, long sample pretreatment, and low precision and sensitivity. Electrochemical methods provide high potential for investigation of antioxidant compounds, assessment of antioxidant capacity and measurement of electrochemical index. Different types of electrodes can be used for the assay purposes. The methods are known for their suitability for food control and monitoring the levels of antioxidant capacity in other biological samples and matrices. In this review, we have discussed about the application of electrochemical methods for analysis of plant and clinical samples with respect to study of their antioxidant properties.

PC-48

Therapeutic potential of Areca nut, Areca catechu, L: A review

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ABSTRACT

Areca palm, Areca catechu L., is commonly propagated in several South Asian and Southeast Asian nation. The kernels of areca nut have been highly utilized in clinical preparations. Areca nut has a significant importance in the traditional Indian medicine system such as Ayurveda, Homeopathy and Unani. It is conventionally utilized in a various number of diseases for its digestive, laxative, antiulcer, carminative, antimalarial, antidiarrhoeal, antihypertension, prohealing, diuretic, hypoglycaemic, antibacterial, antiheartburn actions. The estimation in this review demonstrated that the areca nut is a pool of compelling valuable chemical compounds which could be supplied as medicaments and may offer the novel leads and evidences for contemporary medicine. The bioactive constituents available in areca nut were valuable sufficient for further exhaustive investigation and utilized them for their intrinsic ability as potent therapeutic agents.

PC-49

Nutraceuticals - A Boon For Healthy Family

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ABSTRACT

Nutraceuticals are products derived from food sources that are purported to provide extra

health benefits. In addition to the basic nutritional value found in foods, Nutraceuticals prevent chronic diseases, improve health, delay the aging process, or support the structure or function of the body. Nutraceuticals comprises of herbs, vitamins, minerals, dietary fibres which are used as dietary supplements for the human health and also involves functional foods like yogurts, omega-3 milk, oats, probiotics etc. Probiotics are friendly bacteria and have positive effects on intestine wheras Omega -3 fatty acids generally prevent the conditions of the heart attack and cardiac failure. Fatty acids lower the blockage and cholesterol levels and ultimately reduce chances of irregular rhythms (arrhythmias). As nutraceuticals are components of the herbal materials there is rapid growth in usage of nutraceuticals (about 7-12% Inc) per year. Globally nutraceutical market reaches upto 450 billion dollars. FSSAI regulates the registration and licensing of the food products. To ensure the better standard Dietary Supplement Health and Education Act was passed in 1994. Many nutraceuticals from herbal origin such as curcumin, lutein, lycopene, turmeric, and beta carotene are used to inhibit the oxidative stress and ultimately serves an advantage over synthetic drugs.

PC-50

Pharmacognostical And Pharmacological Evaluation Of *Cuscuta Reflexa* Roxb. Stem

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ABSTRACT

Cuscuta reflexa commonly known as Amarbel, the giant dodder, is one of 100-170 species in the genus Cuscuta. The chemical constituents of *Cuscuta reflexa* are quercetin, amarbelin, amino acids, cuscutaline, scoparone, melanettin, hyperoside, aromadendrin, taxifolin, astragalin, myricetin, kaempferol. This plant is mainly used in the treatment of liver diseases, diabetes, flatulence and treatment of osteoporosis and externally for itching. The Stem of *Cuscuta reflexa* Roxb. were collected from Moradabad city and authenticated in Department of Botany, IFTM University, Moradabad, U.P. The pharmacognostical studies include macroscopic characters, microscopic characters in entire and powder form, determination of foreign organic matter, loss on drying, extractive values, ash values, fluorescence analysis, thin layer chromatography and preliminary phytochemical screening. The pharmacological studies deal with acute toxicity studies and hepatoprotective activity of ethanolic extract at the doses of 250 mg/kg and 500 mg/kg.

PC-51

Hepatoprotective Plants and Mechanism of Action of Various Hepatotoxicity Model

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ABSTRACT

The objective of review is to assemble data on medicinal plants having hepatoprotective activities and various toxicity models along with their mechanism of action. Liver is an essential organ plays many characteristics functions. Demises of adults with persistent hepatic necrosis are intensified which is the main concern for days. Hepatic disorders can be engendered by any toxicity model but the prime reasons for liver injuries are drug-induced toxicity and excessive alcohol consumption. From ancient era, traditional medicine system has been used to prevent and treatment of liver cell injury. Enumerate plants are present in nature containing flavonoids that possess hepatoprotective properties.

PC-52

Some Natural Isolated Compounds as Anticancer Agents

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ABSTRACT

Cancer is the major cause of death, world widely, moreover its genesis cause is still unknown. Couples of therapies like chemotherapy, radiation, surgery and targeted therapy are available with some detrimental effect. Natural phytochemicals are prominent strategy for prevention, treating, and curing cancer. There are many phytochemicals from herbs having potent anticancer property. Generally these phytochemicals treat cancer by different mechanisms like augmenting apoptosis, cell cycle arrest, targeting to some specific cancer inducing proteins, increasing cytotoxicity etc. This is our little attempt to gather information of phytochemicals having anticancer property such as Etoposide, Curcumin, Vincristine, etc. with postulated mechanism. 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.

PC-53

Anti Inflammatory Response Of Iridoid Glycosides Found In *Gmelina Philippensis* Cham.

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ABSTRACT

From ancient times various remedial drug's that were obtained from plant sources were used to abolish pain and Inflammation related problems. With technological advancements many plant based crude drugs were obtained for thispurposes. One of such plant species is *(Gmelina philippensis* Cham.) being native of origin from Philippines. This plant variety was used traditionally for treatment of different problems like :-Eczema ,Cough related problems and many more. There are about 35 kind of species of genus (Gmelina) are found all around the world. The potential effects for treatment of such problems is due to presence of different active phytochemical constituents like Iridoidal Glycosides and it's subtypes such as [Squalene, 8-Epi loganic acid ,Stigmasterol, Catapol ,2- pyrrolidinone,(-) –syringaresinol] etc . Out of these constituents [Squalene, 8-Epi loganic ,acid , Stigmasterol , Catapol] are found to exhibit. From that we can concluded that these 4 main active phytochemical constituents may also exhibits the anti-inflammatory responses which are present in this plant variety if further researches are carried out to proventhis property.

PC-54

Tumor-On-A-Chip For Finding Better Anti-Cancer Drugs

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ABSTRACT

Present era involves the use of animal models and cells cultured in a dish for testing potential compounds. However, results obtained from them cannot be frequently transferred over to human biology since cultured cells on a dish lack the 3D structure and the vasculature, that keep it alive. So, a device is constructed to solve these issues. A chip is made consisting of three-dimensional culture of tumor cells which is placed in the middle well, and then cells that construct blood vessels are placed along the microposts. The niche of perfusable vasculature permits the administration of nutrients and drugs into the system to mimic the environment in the body. A drug assay is then performed by administrating an anti-tumor drug at low doses. Due to its compact size and utility, this new device can expedite the tests on the countless number of potential new drugs.

PC-55

Recent Synthetic and Biological Attributes of 1,2,4-Triazole Derivatives

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ABSTRACT

Several five membered ring systems, e.g., triazole, oxadiazole dithiazole and thiadiazole with three heteroatoms at symmetrical or asymmetrical positions have been studied because of their interesting pharmacological properties. Triazole nucleus has been established as the potential entity in the largely growing chemical world of heterocyclic compounds possessing promising pharmacological characteristics. Triazoles have increased our ability to treat many fungal infections, for example, candidiasis, cryptococcal meningitis, aspergillosis etc. the present work is the first compilation on synthesis and medicinal aspects including structure activity relationships of 1,2,4-triazole reported to date. The structutre activity relationship analysed has been charted out with the influencing substitutions on triazole against the concerned diseses. N1, N2 and N4 nitrogens of triazole have the ability to affect potency and efficacy against various diseases depending upon the substituents for e.g Substitution at N1 gave antiviral activity. The fda approved drugs and the drugs under clinical trials are compiled.

PC-56

Anti Diabetic Response of *Gymnema sylvestre*

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ABSTARCT

From ancient times various remedial drugs that were obtained from plant sources were used to treat diabetes related problems. One of such plant species is *Gymnema sylvestre* which is a slow growing, perennial, woody climber, distributed throughout the India, in dry forests upto 600 m height. It is mainly present in the tropical forest of Central and Southern India. It is also found in Banda, konkan, Western Ghats, Deccan extending to the parts of western and northern India. It mainly contains gymnemic acid which is present in extract of *G. sylvester* which possess its hypoglycaemic effects because it promotes the regeneration of islet cells, increases insulin secretion, causes inhibition of glucose absorption from intestine, increases utilization of glucose and increases the activities of enzymes responsible for utilization of glucose by insulin-dependent pathways.

PC-57

Molecular Docking, Synthesis and Anticancer evaluation of some Heterocyclic conjugates derived from Phenolic aldehydes

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ABSTRACT

A new series of heterocyclic compounds bearing thiadiazole and thiazolidinone were designed by using Schrodinger Molecular Docking against the microbial strains and HELA, MCF-7 cancer cell lines by using PDB code. The proposed analogs exhibit excellent receptor interactions; it was synthesized by the formation of various intermediates. The final derivatives derived from Vanillin and Salicylaldehyde was characterized by different spectral mean and biologically activities was carried out by using different strains of bacteria, fungi and cancer cell lines such as HELA and MCF-7. Some of the synthesized derivatives bearing electron withdrawing group exhibit promising results when compared to the standard drug. Some of them may be taken as lead compound for development of newer anticorrosive agent.

PC-58

Synthesis and Antimicrobial Activity of Benzoic Acid Substituted 1,2,4-Triazole Derivatives

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ABSTRACT

Introduction:1,2,4-Triazole nucleus by virtue of their ambident nucleophilic center, is a good starting material for the synthesis of several interesting N-bridged, and sulfur group-containing heterocyclic compounds having a variety of therapeutically important properties.

Materials and Methods: We have synthesized benzoic acid substituted 1,2,4-triazole derivatives and screened antibacterial potential against *Staphylococcus aureus*, *Escherichia coli* and antifungal potential against *Aspergillus niger* and *Candida albicans* by serial dilution method.

Results: The structures of all the newly synthesized compounds were confirmed by FT-IR, ^{1}H NMR, and LC-MS data which were in full agreement with their structures. The results of the antimicrobial evaluation (expressed in pMIC in µmol/mL) of the synthesized compounds indicated that the compound **TH-4** and **TH-19**were most potent against *Staphylococcus aureus* (pMIC=1.98 and 2.1, respectively), **TH-13** (pMIC=1.89)were most potent against*Escherichia coli.*The compound **13** was found to be the most potent against *Aspergillus niger* and*Candida albican s*(pMIC=1.86 and 1.81, respectively).

Discussion: The compound **TH-4** and **TH-19** exhibited higher antibacterial activity than standard drug (ciprofloxacin) against *Staphylococcus aureus* which may be attributed to the

presence of a long alkyl chain (n-C_9H_{19}) at R_2 position. The presence of electron-withdrawing groups *i.e. o,p*-dichloro substitution on the aromatic ring at R_1 and R_2 position results in excellent antimicrobial activity of compound **TH-13.**

Conclusion: Antimicrobial evaluation indicates that compound **TH-13** was active against all tested strains and hence can be used for further study to discover a potent antimicrobial agent.

PC-59

Nutricosmetics and Neurocosmetics: Emerging Trends in skin care

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ABSTRACT

The cosmeceuticals marke continues with notable annual growth, but these days consumers are more conscious of nutritional products that are suitable for both skin care and disease prevention. In the last decade pharmacists, chemists, nutritionists, and physicians have been working together to develop new nutritional products to satisfy consumer's needs and demands. Nutricosmetics, other than cosmeceuticals and nutraceuticals, have emerged out as a new strategy to prevent disease and to sustain general health and fitness while supporting skin health and beauty. Characterized by oral supplementation of nutrients, nutricosmetics are also known as "beauty pills", and even "oral cosmetics." The major benefit is the anti-aging effect that works by fighting free radicals generated by solar radiation and thus reducing wrinkles. Among the ingredients used in nutricosmetics, antioxidants are the most important. The most commonly used antioxidants are carotenoids (beta-carotene, lycopene, lutein and zeaxanthin) and polyphenols (anthocyanidins, catechins, flavonoids, tannins, and procyanidins).

A new category was introduced named Neurocosmetics in year 2007 by New York Society Cosmetics Chemist (NYSCC). These are unusual cosmeceuticals that shows controlled penetration through the different layers of the skin at different levels. Research is encouraged to develop the products that can improve both external look and internal mood alleviation by using various novel approaches such as nanoparticles, microemulsions, liposomes, dendrimers and sprays.

PHARMACOLOGY / CLINICAL PHARMACY ABSTRACTS

PL-01

Narcolepsy: A Lifelong Sleep Disorder

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ABSTRACT

Narcolepsy is a lifelong sleep disorder characterized by an excessive daytime sleepiness with irresistible sleep attack catalepsy (sudden liberated, loss of muscle tone), sleep paralysis or hallucination. There are two distinctive groups of patients i.e those having narcolepsy with cataplexy and those having narcolepsy without cataplexy. Narcolepsy affects 0.005% of the population. It is caused by lack of brain chemical called hypocretin. It can be treated by stimulants, antidepressants and therapies.

PL-02

Role Of LDL And HDL In Atherosclerosis

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ABSTRACT

Atherosclerosis is a complex disease in which many processes contribute to lesion development. It is well accepted that low density lipoprotein plays a main role in the initiation and progression of atherosclerosis. A low level of high density lipoprotein and high serum levels of low density lipoprotein is an important risk factor for the development of cardiovascular diseases. The association between low levels of high density lipoprotein and increased risk for cardiovascular disease has been well established through epidemiological and clinical studies. Observational, biological and clinical evidence strongly suggests that high density lipoprotein is a promising target of therapeutic intervention. This relationship is supported by the potential antiatherogenic properties of high density lipoproteins, including its mediation of reverse cholesterol transport in which cholesterol from peripheral tissue is returned to the liver for excretion of bile. High density lipoprotein is a class of heterogeneous lipoproteins containing approximately equal amounts of lipid and protein. Reducing low density lipids level can lower the incidence of cardiac heart disease by up to one third.

PL-03

In-Vitro Anti-Inflammatory Activity of Ethanolic Extract of *Michelia Champaca*

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ABSTRACT

Michelia champaca L. belongs to the family Magnoliaceae. The genus is named after Italian botanist Peter A. Michel (1679-1737). The present study has been designed to investigate the possible role of ethanolic extract of ***Michelia champaca*** in the anti- inflammatory activity. Inflammation is part of the complex biological response of body tissues to harmful stimuli, such as pathogens, damaged cells, blood vessels, and molecular mediators. The bark of plant ***Michelia champaca*** was collected from herbal garden of Devsthali Vidyapeeth Lalpur Rudrapur (U.S.Nagar) & then washed to remove earthy matter further was shade dried for 20-25 days and powdered with grinder. Extraction was done by soxhlet apparatus. The preliminary phytochemical screening of ethanolic extract of ***Michelia champaca*** confirmed the presence of various phytochemical compounds such as terpinoids, flavinoids, tannins and saponins. The anti-inflammatory activity was performed by the in-vitro method of egg albumin denaturation. Denaturation of proteins is a well-documented cause of inflammation. As part of the investigation on the mechanism of the anti-inflammation activity, ability of plant extract to inhibit protein denaturation was studied. The varying concentrations of test sample & standard were prepared (10-500 µg /ml). Maximum inhibition of 71% was observed at 500 µg/ml. Diclofenac sodium, a standard anti- inflammation drug showed the maximum inhibition 68% at the concentration of 100 µg/ml compared with control. Hence, on future grounds this herb can be used as a potent anti-inflammatory agent.

PL-04

Progeria Disease

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ABSTRACT

Progeria was first described in 1886 by Jonathan Hutchinson. **Progeria** is an extremely rare autosomal dominant genetic disorder in which symptoms resembling aspects of aging are manifested at a very early age. It is one of several progeroid syndromes. Those born with progeria typically live to their mid-teens to early twenties. It is a genetic condition that occurs as a new mutation, and is rarely inherited, as carriers usually do not live to reproduce children. Progeria is caused by mutations that weaken the structure of the cell nucleus, making normal cell division difficult. In this condition there occurs wrinkled skin, atherosclerosis, kidney failure, loss of eyesight, and cardiovascular problems. Scleroderma, a hardening and tightening

of the skin on trunk and extremities of the body, is prevalent. People diagnosed with this disorder usually have small, fragile bodies. Musculoskeletal degeneration causes loss of body fat and muscle, stiff joints, hip dislocations, and other symptoms generally absent in the non-elderly population. Individuals usually retain typical mental and motor development. Most treatment options have focused on reducing complications (such as cardiovascular disease) with coronary artery bypass surgery and low-dose aspirin. Growth hormone treatment has been attempted. The use of Morpholinos has also been attempted in mice and cell cultures in order to reduce progerin production. As there is no known cure, few people with progeria exceed 13 years of age. At least 90 percent of patients die from complications of atherosclerosis, such as heart attack or stroke. No treatment has yet proven effective.

PL-05
Chronopharmacology

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ABSTRACT

Chronopharmacology, the strategy of exploiting in pharmacological terms that how the effects of drug varies with biological timing and the investigation of drug effect as rhythm characteristic. Chronopharmacolgy shows the various time dependent factors affecting the safety, drug effect and adverse effect in improving the treatment of disease without altering the function of drug in body. It involves the evaluation of different clock-hour treatments during the day and night time reveal that biological rhythmic processes that is circadian rhythms, that can affect the kinetics and effects of various medications. A circadian clock in the brain coorinates with daily physiological cycles like sleep, wake, temperature, hormones which is also affected by the time of the given drug dose. Chronopharmacology further lead to the different aspects to study drug effect and safety are chronokinetics, chronesthesy, chronergy, chronotoxicity, chronotherapeutics which are more useful. Currently, prescribers are more concerned with 'what' to prescribe rather than 'when' to prescribe it. It is required that more attention should be given to the timing of drug administration. The major goal is to devise the chronotherapeutic interventions in proper and positive time dependent aspects of drug administration will be discussed in the article and also improving the treatment of various diseases. However, interindividual variations, high cost of drug trials are incorporating chronopharmacological approaches, and absence of a reliable chronobiological biomarker to guide chronopharmacotherapy are major limitations in this field and warrant further research.

PL-06
Chronic Eosinophilic Pneumonia

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ABSTRACT

CEP was first described as a distinct entity in the medical literature by Carrington, et al. in 1969 when they described nine individuals with the disorder. CEP is different from acute eosinophilic pneumonia (AEP), which is marked by rapid onset, the absence of asthma, a greater potential for acute respiratory failure and no relapse following treatment. Chronic eosinophilic pneumonia (CEP) is a rare disorder characterized by the massive accumulation of eosinophils in the lungs (pulmonary eosinophilia). Eosinophils are a type of white blood cell and are part of the immune system. They are usually produced in response to allergens, inflammation or infection (especially parasitic ones) and are particularly active in the respiratory tract. In CEP, eosinophils also accumulate in the bloodstream (peripheral eosinophilia). Common symptoms include shortness of breath (dyspnea), cough, fatigue, night sweats, low grade fevers, and unintended weight loss. The exact cause of CEP is unknown (idiopathic). Approximately 75% of individuals with CEP experience asthma at some point during their lives. Normally, eosinophils only account for approximately 5% of circulating white blood cells in healthy individuals. Researchers believe that CEP may develop due to an unidentified, nonspecific triggering agent that causes the body to produce eosinophils.

PL-07

BCG Treatment For Bladder Cancer

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ABSTRACT

According to the National Cancer Institute, the overall 5-year relative survival rate for bladder cancer is 76.8 percent. Doctors typically use BCG immunotherapy to treat stage 0 and stage 1 bladder cancer. The 5-year relative survival rate for people with stage 0 bladder cancer is 95.4 percent. Bacillus Calmette-Guérin, an attenuated strain of Mycobacterium bovis, was developed by Calmette and Guérin with the intention to generate a vaccine against tuberculosis. Extension of BCG treatment (maintenance immunotherapy) is used to increase efficacy. Results of various experiments describe that after instillation in the bladder, BCG accumulates near the bladder wall and is internalised and processed by professional antigen-presenting cells (APCs) and (highgrade) tumour cells. Then BCG antigens are presented to CD4+ T cells .Then local synthesis of a particular set of cytokines or cell-mediated immune response. NK cells may be involved in tumour cell killing.BCG is a liquid drug that can be

deposited directly into your bladder through a catheter It's made from a weakened strain of *Mycobacterium bovis*, a vaccine for tuberculosis. Immunotherapy is used to prompt the immune system into attacking cancer cells.

PL-08

Polycystic Ovary Syndrome And The Role Of Diet In PCOS Management

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ABSTRACT

The polycystic ovary syndrome is the most common metabolic abnormality in young women today of reproductive age. PCOS is the endocrinopathy that affects women and women's hormone level during their childbearing years. It is the leading cause of infertility, obesity, diabetes nowadays. The prevalence range of women's affected is from 2.2 to 26%. In this syndrome there is development of small fluid filled sacs inside the ovaries having 2 or more follicles measuring 2-9 mm diameter. The Etiology of PCOS is still unknown but some evidence suggest that patient have a abnormality of cytochrome P450c17,which is rate limiting enzyme in androgen biosynthesis . There is no optimal diet or macronutrient composition for PCOS, however lifestyle modification, including weight loss, approaches to stop hypertension or low carbohydrate diet, including small frequent meal consumption at regular time with majority of carbohydrates consumed at lunch time or equally distributed throughout the day and doing regular exercise can be effectively help to manage the syndrome.

PL-09

Updated Overview Of Polycystic Ovary Syndrome

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ABSTRACT

Polycystic ovary syndrome (PCOS) is a highly alarming endocrine-metabolic disorder, proceeding women towards infertility, ovarian and endometrial cancers. It is reported that over 90% of women suffering from anovulation as a cause of infertility present with ultrasound or endocrine features associated with PCOS. The prevalence of PCOS has been reported to range from 8% to 13% in women worldwide with up to 70% of affected women remaining undiagnosed. PCOS leads to the complications such as Infertility, Gestational diabetes or pregnancy-induced high blood pressure, Miscarriage or premature birth, Nonalcoholic steatohepatitis, Metabolic syndrome, high blood sugar, and abnormal cholesterol or

triglyceride levels that significantly increase your risk of cardiovascular disease and eating disorders, Abnormal uterine bleeding and Cancer of the uterine lining (endometrial cancer). The pathophysiology of PCOS consists of multiple pathologies such as hyperinsulinemia and insulin resistance (IR), defect in the neuroendrocrine system, defect in ovarian steroid synthesis, peripheral increase in cortisol metabolism and release of reactive oxidative species. Though various pharmacotherapies like metformin, clomiphene citrate and flutamide are used for its treatment but serious side effects with long treatment schedule makes them unapproachable. Consequently, there is an urgent need for better drugs that can target the core of PCOS and normalize the broad spectrum of PCOS anomalies without contributing any side effects. New innovative approaches aimed at reducing overall androgen excess have been tested in pre-clinical research and some clinical trials.

PL-10

A Review on Corona virus

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ABSTRACT

In humans the corona viruses are associated with Respiratory tract illness. The most bellicose human coronavirus is SARS-CoV. It causes Severe Acute Respiratory Syndrome which is a fatal lung disease. Only SARS-CoV has recently introduced to the human population whereas the other two (HCoV-NL63 and HCoV-HKU1) have been circulating in humans for long time and both are responsible in upper and lower respiratory infections preferably in winter season. Nevertheless, there are four other HCoVs that are circulating globally in humans specially in young children. HCoV-OC43 and HCoV-229E were introduced in mid-80's whereas other two HCoV-NL63 and HCoV-HKU1 are discovered recently. A newly identified coronavirus called 2019-nCoV has been spreading in China. In a new study, Researchers sequenced the genes of 2019-nCoV (as the virus is now called) and then compared it with the genetic sequence of more than 200 corona viruses that infect various animals around the world. The scientist noted that there are two snakes that are common to southern china where the outbreak originated. Many banned Krait (Bungarus Multicinctus) and the Chinese Cobra (Naja atra).

PL-11

GLP-1 Agonist As A Potential Anti-Diabetic Agents For The Management Of Diabetes & Complication

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ABSTACT

Glucagon-like peptide 1 (GLP-1) is a 30-amino acid peptide hormone produced in the intestinal epithelial endocrine L-cells. GLP-1 is extremely rapidly metabolized and inactivated by the enzyme dipeptidyl peptidase IV (DPP-IV). The main actions of GLP-1 are to stimulate insulin secretion (i.e. to act as an incretin hormone) and to inhibit glucagon secretion. It also inhibits gastrointestinal motility and secretion and thus acts as an enterogastrone and part of the "ileal brake" mechanism. These antidiabetic agents increases the glucose-dependent secretion of insulin from functioning beta cells, decreases glucagon release after meals, decreases hepatic glucose production, delayed gastric emptying, suppress the apetite and promotes beta cells proliferation. Currently GLP-1 agonists such as Dulaglutide, Exenatide, Liraglutide, Semaglutide are available in the market with varying duration of action and as potential anti-diabetic molecule. This poster discusses therapeutic potential of various GLP-1 agonists used in clinic.

PL-12

Gene Therapy: A Valuable Tool To Treat Genetic Disoders

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ABSTRACT

Gene therapy is an experimental tool that utilizes genes (hereditary unit) to treat genetic disorders. Presently,this technique provides therapeutic outcomes to treat genetic disorders by altering gene functioning instead of using drugs or surgery. Firstly this technique was came into existence in 1960s and in1972, Theodore Friedmann and Richard Robling govern the role of "Gene therapy for human genetic disease."After in 1970 that" good DNA"could be used to replace defective DNA in people with genetic disorders.In this carrier used for gene insertion was retrovirus correct human ADA gene to the cells. In this the normal ADA genes were delivered to immature blood cells isolated from the babies' umbilical cords. Recent advancement in immunology, molecular biology, and bio-informatics has yielded extensive information on the

Pathophysiological mechanisms of autoimmunity. Now a days its wide lyperceptible for treatment of blood and vascular system disorders, for orthopedics problems as well as for cancer ailment. Recent studies have immune defi-ciency (SCID) and Leber's congenital amaurosis. At present,three main gene therapy strategies for treatment of investigated potential applications of gene therapy in correcting genetic diseases, treating even recom-bined cancer are application to oncolytic viruses like suicide-gene theapy and gene-based immunotherapy.

PL-13

"CRISPR Technology" Headed to Clinical Trials

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ABSTRACT

"**CRISPR**" stands for Clustered Regularly Interspaced Short Palindromic Repeats, which defines the hallmark of a bacterial defense system that forms the basis for CRISPR-Cas9 genome editing technology. Now, as a gene-editing tool, CRISPR/Cas9 has revolutionized biomedical research and may soon enable medical breakthroughs in a way few biological innovations. CRISPR gene editing used to treat various diseases like cancer, beta-thalassemia. Boston-based Editas Medicine's clinical trial of a CRISPR technology in patients with a rare inherited eye disorder, as well as other companies' efforts are in process now. Intellia Therapeutics, another company working on CRISPR-based therapies, is focusing on liver disease by targeting transthyretin amyloidosis (ATTR) and the approach requires a systemic dosing, meaning the virus carrying CRISPR is spread around the body before finding its target. Almost 60% of the opportunity in the field is in editing genes outside the body. Working with Vertex Pharmaceuticals, CRISPR Therapeutics plans to launch a clinical trial every six months. Three of them will be in cancer, attempting to edit immune cells to attack solid tumors. It also has plans to create an artificial pancreas for diabetic patients. Editas has also launched investigational new drug (IND) enabling activities for EDIT-301, a CRISPR therapeutic to treat sickle cell disease and beta-thalassemia.

PL-14

Coronavirus

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ABSTRACT

Coronavirus belongs to a family called Coronaviridae, same as Severe Acute Respiratory Syndrome (SARS)-which killed nearly 800 people after an outbreak that started in China in 2002 and Middle East Respiratory Syndrome Coronavirus (MERS) virus-first reported in the Middle East in 2012. Three to four out of every 10 patients infected with MERS died. China new coronavirus has the world on tenterhooks. Initial cases reported from in Wuhan, China. Coronavirus is a large group of viruses that are common among animals. But only 6 (the new one would make it 7) are known to infect people. Symptoms are runny nose, cough, sore

throat, handshakes, possibly headache and may be fever. From human contact with animals MERS started in camels and in case of (SARS) Severe acute respiratory syndrome, civet cats were to blame. Human to human transmission often happen when someone comes into contact with infected person secretion. Countries have begun body temperature checks at airports and railway station. WHO recommends washing hands avoid eating meat and covering mouth and nose while coughing and sneezing. Currently

PL-15

Chronic Stress Induced Glucocorticoids: Impetus For Alzheimer's Disease?

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ABSTRACT

Alzheimer's disease (AD), a chronic, neuropsychiatric pathological dysfunction is the most common form of dementia. AD is characterized by extracellular deposition of amyloid-beta (Aβ) peptides, intracellular accumulation of hyperphosphorylated tau protein, oxidative stress, neuroinflammation and untimely neuronal and synapse demise. Although genetic factors have major influence on pathobiology of AD yet environmental factors such as stress play a crucial part in the materialization of AD. The acute activation of the HPA axis during stress is necessary for stress adaptation while excessive exposure to sustained elevated levels of stress hormones, including glucocorticoids can be harmful and set off pathological progression of AD. Chronic stress induced dysregulation of HPA axis leads to recurrent instigation of the neuroendocrine, immunological and metabolic axis and affect neuronal integrity through various mechanisms that includes, excitotoxic cell death, disturbed Ca^{+} balance, epigenetic changes, neurotransmitter deficits, altered mitochondrial morphology, increased oxidative stress and impaired neuronal integrity. The elevated levels of glucocorticoids also alter insulin homeostasis and produce a state of insulin resistance. Insulin resistance, downregulation of insulin-dependent pathways and deficiency in glucose and energy metabolism directly influence AD pathogenesis as it may exacerbate Aβ accumulation, tau hyperphosphorylation, alters glucose transportation, energy metabolism, hippocampal framework and promulgate inflammatory pathways. In summary, targeting, glucocorticoids seems to be viable and multifaceted approach in AD.

PL-16

A Novel Study on Corona Virus

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ABSTRACT

Corona viruses are a group of viruses that can cause diseases in mammals and birds. In humans, the virus causes respiratory infections which are typically mild including the common cold but rarer forms like Severe acute respiratory syndrome (SARS) and *Middle East respiratory syndrome* **(***MERS***)** can be lethal. The virus is named after its shape which takes the form of a crown with protrusions around it and hence is known as coronavirus. *Middle East respiratory syndrome* **(***MERS***)** -CoV, like other coronaviruses, likely spreads from an infected person's respiratory secretions, such as through coughing. ... Infected people have spread MERS-CoV to others in healthcare settings, such as hospitals. The symptoms of most coronaviruses are similar to any other upper-respiratory infection, including runny nose, coughing, sore throat, and sometimes a fever. In most cases, you won't know whether you have a coronavirus or a different cold-causing virus, such as rhinovirus. most commonly this type of virus has been reported in thialend, china, japan, singapore and USA. This study is based upon the complete detail of corona virus including what is the corona virus , what are the symptoms of corona virus and how to treat.

PL-17

Myocardial Ischemia Reperfusion Injury-Pathogensis And Prevention

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ABSTRACT

Myocardial Ischemia-Reperfusion (I/R) injury refers to myocardial, vascular or electrophysiological dysfunction of heart induced by the restoration of blood flow to previously ischemic tissue. Its pathogenesis reflects the confluence of multiple pathways, including ion channels, reactive oxygen species, inflammation, and endothelial dysfunction. This complexity should not deter our efforts to intervene in this process, however, since nearly 2 million patients annually undergo either spontaneous or iatrogenic ischemia-reperfusion. The purpose of this review is to examine our current state of understanding of ischemia-reperfusion injury and highlight recent interventions aimed at this elusive target. Myocardial I/R injury results from severe impairment of coronary blood supply and produce a spectrum of clinical syndromes. The manifestations of I/R- induced myocardial injury include reperfusion arrhythmias, endothelial cell damage leading to micro vascular dysfunction along with myocyte death and infarction. Various signaling mechanisms have been implicated in I/R induced myocardial injury like interlukin-6(IL-6), tumor necrotic factor – alpha (TNF-α), mutagen-activated protein kinas) and Janus kinase/ Signal transducer and

activator of transcription (JAK/STAT). Moreover, various treatments like preconditioning, post conditioning and administration of various therapeutic interventions such as calcium antagonists and compliment inhibitors have been reported for I/R-induced myocardial injury. The present review vitally demonstrates about the signaling mechanisms and various treatment strategies for I/R-induced myocardial injury.

PL-18

Nutraceuticals : An Alternative To Pharmaceuticals

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ABSTRACT

Introduction: - Nutraceuticals are substances found in food and herbs that are not technically considered nutrients such as vitamins or minerals, but they have beneficial impact on human health and also used as medicine (for treatment and prevention of disease). Nutraceuticals often possess unique chemical actions that are unavailable in pharmaceuticals.
Objective: - To study the growth rate and beneficial effects of nutraceuticals.
Method: - The study was done by reviewing the original articles.
Result:- Globally, the nutraceutical market is expected to reach $ 241 billion in 2019 from $ 172 billion in 2014. Indian nutraceuticals market is expected to grow at a compounded annual growth rate of 21% and reach $ 10 billion by 2022.
Conclusion:- Nutraceuticals have been gaining importance as the alternative or supplemental medications along with pharmaceuticals for prevention or treatment of wide-range of diseases and an attractive option over the conventional therapies due to their less or no side effects and nutritional values. So, there is need to demonstrate the health benefits and their molecular mode of action.

PL-19

Alcoholic Liver Disease And Effective Approaches For Its Prevention

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ABSTRACT

Liver is the most vital organ of the human body. Various reason have been reported to affect and infect the liver, among these alcoholic liver disease (ALD) is the most important and fatal for human life as it increases the risk of liver cancer. The prognosis for patients with alcohol-induced cirrhosis is extremely poor, with mortality rates of 71% at 5 years and 91% at 15

years. The main reason of alcoholic liver disease is excess consumption of alcohol and it produce alcoholic fatty liver and alcoholic liver cirrhosis. Various risk factors can be cause of ALD among them hepatitis B & C viruses, high consumption of alcohol in long duration of time, high intake of medicine due to chronic and life-threatening disease. Patients with ALD are associated with loss of appetite, fatigue, itchy skin, liver failure, jaundice, ankle swelling, psychiatric disorder, pancreatic disorder and neurological disorder. Liver function test, liver biopsy, liver imaging test, Ultrasonography (USG) and as well as renal function test can be utilized to diagnose ALD. For the ALD patients drug is not only the choice, they require continuing education by health professionals regarding avoidance of alcohol, hepatitis vaccination, avoidance of unnecessary NSAIDS drugs, quit smoking, low-fat diet intake, iron supplements and fruit and vegetables to achieve a better quality of life.

PL-20

Corona virus: A Havoc

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ABSTRACT

Corona virus is group of viruses found in mammals and birds, the orized to have zoonotic origin having incubation period of approximately 5 to 8 days in humans and the symptoms include common cold, fever, respiratory disorder and renal failure.Till now around seven strains of corona virus are discovered. These viruses are epidemic, causing 15-30% of respiratory tract infections each year. Recently in December 2019, after the out break of pneumonia, a new strain is found inWuhan city of China, known as Wuhan Corona virus (Novel-CoV). There are 7736 cases reported and 170 deaths recorded from December 2019 to January 2020.The primary route of transmission is droplet infection and rarely from faecal route. Empirical treatment for the patients of corona virus includes antipyretics and steroids. In 2012, first case of MERS-CoV was reported in Saudi Arabia which was originated from bats. The disease can be prevented by maintaining proper hygiene and avoiding close contact with the infected people. Interferon Alpha and Interferon Beta have activity against SARS-CoVin animal models and some beneficial effects were observed in Humans.

PL-21

Epilepsy: A Neurological Disorder

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ABSTRACT

While the assessment and treatment of patients with seizures or epilepsy is frequently challenging, present day treatment furnishes numerous patients with complete seizure control. After a first seizure, assessment should concentrate on barring a fundamental neurologic or ailment, evaluating the overall risk of seizure reoccurrence and determining if treatment is demonstrated. Fruitful administration of patients with repetitive seizures starts with the foundation of a precise conclusion of epilepsy disorder followed by treatment utilizing a suitable drug in a way that optimizes viability. The objective of treatment is to totally control seizures without delivering unacceptable prescription symptoms. Patients who don't accomplish total seizure control ought to be referred to an epilepsy professional, since new prescriptions and careful medicines offer patients uncommon choices in seizure control.

PL-22

Rheumatoid Arthritis: An Overview

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ABSTRACT

Rheumatoid arthritis (RA) is an inflammatory disease of synovial joints, and pain is the transcendent issue for individuals with RA. Pain in RA is upsetting in its own privilege and antagonistically influences incapacity and psychosocial results. RA pain might be because of joint aggravation and furthermore enlarged by focal refinement and auxiliary joint harm. Noninflammatory agony instruments may frustrate the appraisal of ailment movement in RA, and treatment should intend to both supress inflammatory disease and relieve clinical manifestations. Effective treatment stratification requires a full evaluation of pain components by clinical history and assessment, just as target appraisal of synovitis and joint harm. Biologic treatments and joint substitution medical procedure impact affects RA pain, however may just be accessible to those with generally serious or propelled sickness. All encompassing ways to deal with pain the board are demonstrated, including pharmacologic absence of pain where randomized controlled trial (RCTs) offer proof of viability.

PL-23

Herpes Simplex Virus: An Overview

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ABSTRACT

Herpes simplex virus (HSV) regularly causes human contaminations in the orofacial locale (HSV-1) and in the genital district (HSV-2). Beneficial viral disease in mucosal epithelial cells may bring about clinical indications and is trailed by an inert contamination inside tactile neurons. During productive contamination an enormous number of viral quality items are communicated while during inactive disease few or no popular proteins are communicated. Reactivation from idleness brings about repetitive contaminations and disease at or close to the essential site of disease. Understanding the subtleties of the two phases of the HSV life cycle is a specific focal point of HSV. The infection communicates with and adjusts various host cell works in both epithelial and neuronal cells, and investigations of HSV have upgraded our insight into numerous essential procedures in eukaryotic cells. Continuous research keeps on revealing novel impacts of HSV on cells, and a total comprehension of disease during both beneficial and inert contamination ought to permit the plan of new antiviral specialists and antibodies and expanded information on essential cell and atomic science. This audit article is intended to give a prologue to HSV science and key parts of the contamination cycle.

PL-24

A review on interaction of different food additives with myoglobin

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ABSTRACT

Proteins are the important composition holding body system. Protein unfolding and aggregation leads to vast deformation in composition as well as structure of human body. Protein aggregation, a distinctive property related to neurodegenerative diseases like Parkinson's and Alzheimer's. Myoglobin is the iron containing heam protein which is monomeric in its structure. Mb is the muscle tissue and acts as an intracellular storage site of oxygen. Food additives are widely used in food industries to preserve flavor or enhance food taste, appearance, or other qualities which directly or indirectly affects human body. In present work we have reviewed about the interactions of different food additives (quinolone yellow (QV), tartrazine, amsacrine, nitartes and nitrites) interactions with myoglobin (Mb). The study of the interaction between the two has great importance on human health. Interaction of food additives and myoglobin can be investigated under the simulated physiological conditions in addition with different widespread methods, e.g., turbidity, Rayleigh light scattering (RLS), fluorescence resonance energy transfer (FRET), far UV-CD, UV–Vis absorbance along with transmission electron microscopy (TEM) and molecular docking. Interaction between Food Additives and myoglobin is unstructured and static in nature as well as thermodynamics studies showed that complex formation between different food additives and myoglobin was driven by weak bonding forces.

PL-25

Prevalence of Potentially inappropriate medication among older adults with cardiovascular disease admitted in a tertiary care teaching hospital of Punjab

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ABSTRACT

Introduction: The use of potentially inappropriate medication among Indian older adults with cardiovascular disease has been increased as compared to bygone days.
Objective: The study was conducted to find out the use of PIMs in Indian older adults admitted with cardiovascular disease.
Methods: A prospective cross- sectional study was carried out for a period of 6 months, commencing from July 2018. Patients with cardiovascular disease having age 65 years or more, admitted in cardiology/medicine department were included. PIMs were identified as per 2019 Beers criteria.
Results: Out of 125 patients, 60% (n= 75) of the patients were males. The mean age of the patient was (69.03± 5.76) years The mean estimated serum creatinine was (2.12 ± 1,96) mg/dl where the highest was 10 mg/dl. A total of 62.4% (n= 78) patients were prescribed with at least one potentially inappropriate medication as identified by 2019 Beers criteria. Proton pump inhibitor and short acting insulin according to sliding scale, Enoxaparin <30ml/min were the most commonly prescribed PIMs.
Discussion: The prevalence of PIMs in older adults with cardiovascular disease is very high. It also signifies that creatinine clearance rate should be dealt with seriously while prescribing medicines in older adults.

PL-26

Superbugs

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ABSTRACT

INTODUCTION- Superbugs is a term used to describe strain of bacteria that are resistant to majority of antibiotics commonly used today. Resistant bacteria that cause pneumonia, urinary tract infection and skin infection are just a few of the dangers we face now a days.
METHOD- Superbugs act due to the antibiotic resistant bacteria. Superbug found for the first time in U.S women Jen Christensen and Debra Goldschmidt. Its main cause is that if a person

is not following his course of antibiotic, due to which superbugs occurs.
Discussion- Superbugs was discovered by Prof. Chakrabarty. He genetically engineered a new species of Pseudomonas bacteria in 1971 while working for the Research & Development Center at General Electrical Company in Schenectady, New York.
CONCLUSION- Preventing infection is one of the most crucial ways to fight against superbugs. This involves practicing safe hygiene in various ways, like washing the hands with warm water and soap regularly, avoid coughing or sneezing into hands,etc.
RESULT- Superbugs can be eliminated by using preventive majors. Keeping hygiene is most important condition of it.

PL-27

Prescription pattern of Anti-microbial Agents (AMA's) in Adult patients with Urinary Tract Infection (UTI) in a tertiary care hospital

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ABSTRACT

BACKGROUND - Urinary tract infection (UTI) are considered as one of the main causes of morbidity worldwide. They are associated with different etiologies and treated with broad spectrum anti-microbial agents (AMA's). The injudicious use of AMA's limits the option of treatment of UTI in current scenario.
AIM - To study the prescribing pattern of AMA's in adult patients with UTI.
METHODOLOGY - This was a retrospective observational study conducted in a tertiary care hospital for a period of three months. The data was collected in a semi-structured proforma and was analyzed.
RESULTS - A total of 100 patients were included in this study out of which 73% were positive for Urine culture. Yeast cells were detected in 39.7% patients, followed by E. coli, K. pneumonia, S. aureus and other micro-organisms. A total of 417 AMA's were prescribed. Out of them, Carbapenems were the most common followed by Cephalosporins, Antifungals, Glycopeptides, Penicillins, Polypeptides and others. It was found that 64% drugs were prescribed empirically and 36% drugs were given based upon evidence.
CONCLUSION - The most common UTI were fungal infections. The AMA's were prescribed empirically initially and were revised on the basis of sensitivity report later on.

PL-28

Digitization in Diabetes Management

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ABSTARCT

Diabetes Mellitus is a chronic, metabolic disease characterised by elevated levels of blood glucose which leads to over time serious damage to heart, blood vessels, eyes, kidneys and nerves. About 422 million cases of diabetes are reported worldwide. In India, 31,705,000 diabetic cases were reported till 2000 which are expected to reach 79,441,000 by 2030. DM is a chronic disease which involves the monitoring of blood glucose level by glucometer. Diabetes is a persistent disease that needs proper recordings of glucose levels. In diabetic patients, compliance to glucometer is somewhat difficult as it is an invasive technique .Thus poor patient compliance can lead to deadly consequences. So, to replace invasive method, new non-invasive technique was discovered. CGM–"Continuous Glucose Monitoring" system which is a non-invasive technique that continuously checks glucose levels throughout the day and night rather than blood glucose meter that measures blood glucose levels(BGL) at a single moment in time. CGM also alerts on high and low BGL via notifications and alarms on a device which helps to take an immediate action to manage the fluctuated blood glucose levels. We have a limited research on CGM that shows it can be an effective method for monitoring BGL. Since, it is developmental stage, so more studies are required to replace finger pricking method with CGM in monitoring BGL in diabetes mellitus patients.

PL-29

Anticandidal activity of *Ocimum Sanctum* in normal and immunocompromised mice against systemic and oral candidiasis

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ABSTRACT

Objective: Study was aimed to evaluate the effectiveness of naturally occurring *Ocimum Sanctum* (OS) for its antifungal activity in normal and immunocompromised Swiss Albino mice.

Materials and methods: Course powder of *Ocimum Sanctum* was kept in the mixture of ethanol and distilled water (1:1) for 10 days with intermittent shaking. The solvent was removed by distillation under reduced pressure and the resulting semisolid mass was vacuum dried to get a solid residue (yield 4.16% w/w). *In vitro* and *in vivo* antifungal activity of the hydroalcoholic extract of *Ocimum sanctum* (HEOS) was carried out against *Candida albicans* (Ca_{27}).

Results: Study revealed that, the HEOS possess effective *in vitro* anti-fungal activity against *C. albicans* and the Minimum Inhibitory Concentration (MIC) ranged between 125 to 250

µg/mL of broth. Whereas positive control, ketoconazole had a MIC of 3.125 µg/mL 6.25 µg/mL. HEOS significantly control *in vivo* experimental, systemic and oral candidiasis at the dose level of 400mg/kg body weight by significantly decreasing in the colony forming unit (cfu) in brain, liver, lungs, kidney, intestine, tongue and buccal mucosal surface.

Conclusions: Study concluded that, HEOS can be recommended as a potential candidate for further studies, including clinical studies for antifungal activities.

PL-30

Pharmacological modulation of 3-nitropropionic acid Induced Huntington's disease in mice by U83836E

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ABSTRACT

Huntington's disease is a devastating disease which leads to severe degradation in quality of life with a fatal prognosis. Described as a quintessential hereditary disease, it is caused by a mutation in chromosome 4 which leads to formation of mutant Huntingtin (htt) protein and neuronal apoptosis. Primarily, medium spiny neurons in striatum and cerebral cortex are affected. Neuro-behavioural deficits and marked increased ROS (Reactive Oxygen Species) levels are integral attributes of Huntington's disease. The 3-Nitropropionic Acid (3NP) model closely mimics the disease characteristics by inhibition of succinate dehydrogenase, leading to mitochondrial dysfunction and neuronal apoptosis. Available pharmacotherapy only provides symptomatic treatment in HD patients. In this study we explored the potential of U83836e, Vitamin E derived lazaroid with potent antioxidant activity. Administration of 4 doses of 3 NP at 12 hour intervals produced marked weight loss, motor and cognitive deficits. U83836e co-administration along with 3-NP administration prevented manifestations of motor and cognitive deficits which was evaluated by movement analysis, rotarod, actophotometer and morris water maze test along with enhanced oxidative stress. Biochemical estimations like lipid peroxidation, catalase activity, MPO and glutathione content were done to measure oxidative stress. This effect was abolished with the administration of L-Name establishing a link between nitric oxide synthase and U83836e. The results of the present study provide further evidence that the nitric oxide synthase (NOS) dependent beneficial effects of U83836E are partly a reflection of the overall antioxidant and anti-inflammatory effects due to decreased levels of biochemical parameters in the brain and in part by modulatory role of NOS on oxidative stress that might be involved in attenuating the development of behavioural abnormalities in this experimental model of HD.

PL-31

A Review: Novel pathogenetic pathways involved in Diabetic Liver Injury

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ABSTRACT

Nonalcoholic fatty liver disease (NAFLD) is clinicopathologic syndrome, currently the most common abnormality observed in hepatology practice. Diabetes mellitus, a rising epidemic, is pathogenic disorder which is in nexus with Nonalcoholic fatty liver disease (NAFLD). Diabetes related metabolic disorder contributes to a range of hepatic dysfunctions. Obesity and insulin resistance (IR) have been strongly linked with NAFLD. The diabetes-related hepatic risk management approaches include an overall view of key factors and molecular events that can be addressed strategically. The present review discusses the key aspects of the metabolism of fatty acids, controlling Fetuin A, inflammatory features and genetic factors correlated with insulin resistance , dyslipidemia , hyperglycemia , oxidative stress etc. More current developments, pharmacological targets and novel medicinal agents for improved clinical treatments of diabetes related liver disorders are discussed. Current treatment strategies aim to improve insulin resistance via weight loss and exercise, improve insulin sensitivity by the use of insulin-sensitizing agents (e.g. pioglitazone) and reduce oxidative stress by the use of antioxidants, such as vitamin E. Pioglitazone and vitamin E supplementation show the most promise in improving hepatic steatosis and inflammation but have not yet been demonstrated to improve fibrosis, and concern remains regarding the toxicity of long-term use of both of these agents.

PL-32

Therapeutic Potential of Monoamine Oxidase and Its Inhibition in Neurological Disorders

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ABSTRACT

Monoamine oxidases (MAO) A and B are mitochondrial bound iso-enzymes which catalyzesthe oxidative determination of several notable biogenic molecules including indoleamines (serotonin, tryptamine), catecholamines (dopamine, norepinephrine, epinephrine) and trace amines (beta-phenylethylamine, tyramine and octo-paminecatecholamine) which helps to maintain the normal physiology of brain. Overexpression/overactivity of MAO lead to depletion of these biogenic amines and consequently lead to altered normal brain physiological functions, subsequently results in neurological diseases such as Alzheimer disease,

Parkinson's disease, depression, epilepsy, etc. Therefore, MAO inhibitors are being developed for the management of these neurological disorders. This review aims to provide an insight into the significance of MAO and its inhibitors (originating from both synthetic and natural sources) in management of brain disorders.

PL-33

An Investigational Study On Awareness Of Non-Alcoholic Fatty Liverdisease (Nafld) Among People Of Zirakpur (Punjab) Region

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ABSTRACT

Aim: To assess the knowledge, state of awareness and attitude towards NAFLD among people of Zirakpur region with the help of a questionnaire, about various diagnostic parameters and effect of exercise and dietary habits on the progression of NAFLD.

Methodology: An investigational study was conducted among people of Zirakpur. The participants were randomly selected regardless of their age, gender and level of education. A self-structured Questionnaire was designed to collect the simple background data and the required information. The volunteers were provided with the questionnaires and for those who were not able to understand the English language, were interviewed by communicating in local language. After collecting the data, an analysis was performed with the help of Microsoft Excel and Graph pad prism.

Results: 90 volunteers participated in our study, 51% were females and 48% were male respondents, among them 3.3% overweight and 6.6% were obese. In our study 7.77% were diabetics, 8.88% were suffering from hypercholesterolemia, 5.55% were suffering from thyroid disorder and 5.55% were suffering from hypertension. Majority of participants (65%) had never undergone for any diagnostic test, only 25.5% were aware of SGOT and SGPT parameters. 56.6% of total participants have never heard about NAFLD, 5.5% are those who have heard about it and suffering from it where as 3.3% are those who have never heard about NAFLD but suffering from this devastating disorder.

Conclusion: Majority of the population was unaware of NAFLD regardless of their age, gender and education. Hence there is a need to spread awareness about NAFLD through Mass media, workshops, one day programmes, posters, patient counselling, in order to get control over prevention, early detection and treatment.

PL-34

A Review: Novel investigation on FMT for the management of viral hepatitis

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ABSTRACT

Chronic viral hepatitis is the principal cause of chronic liver disease, cirrhosis, and hepatocellular carcinoma in the world and now ranks as the chief reason for liver transplantation in adults. Of the five known hepatitis viruses, three can cause persistent infection and chronic hepatitis: the hepatitis B virus (HBV), the hepatitis C virus (HCV), and the hepatitis delta (or hepatitis D) virus (HDV). The other two viruses, hepatitis A and hepatitis E, cause acute, self-limited disease only.Faecal micro biota transplantation (FMT) may be considered a potentially useful therapy for HBV-related disease in the future. However, the available data in this field remain limited.The present review focused on new technologies which allow the attempt to a systematic gut microbiota study with more realistic information about its composition and its pathological variance. This review summarizes the cutting edge of research about relation between gut microbiota and HBV-induced chronic liver disease and future prospective of FMT therapy.

PL-35

Polyribose Polymerase As A Therapeutic Target In Stroke

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ABSTRACT

Polyribose polymers and polyribosylation of proteins have diverse biological roles in the central nervous system. Poly (ADP-ribosylation) is a reversible post-translational protein modification implicated in regulating several biological functions and is responsible for DNA repair and maintenance of genomic stability. Poly (ADP-ribose) polymerase-1 (PARP-1) is a best characterized member of PARP enzyme superfamily. Studies obtained with pharmacological PARP inhibitors of various structural classes deficient of the PARP-1 enzyme shows that PARP has a significant function in cerebral ischemia/ reperfusion, neurotrauma and stroke. Specific PARP inhibition can offer new strategies in the therapy of vascular diseases including stroke. PARP-1 works as a DNA damage nick-sensor protein that utilizes beta NAD+ to form polymers of ADP-ribose. The generation of free radicals, peroxynitrile and reactive oxygen species causes PARP over activation resulting in the depletion of NAD+ and ATP, leading to cell death and organ dysfunction. The utilization of PARP inhibitors has, therefore, been proposed as a protective therapy in decreasing excitotoxic neuronal cell death, as well as ischemic and other tissue damage. PARP is also supposed to link with and regulate the function of various transcription factors. The enhancement of NF-κB mediated

transcription is of special concern that performs a vital role in the expression of inflammatory cytokines, chemokines, inflammatory mediators and adhesion molecules. Through this mechanism, up-regulation of abundant pro-inflammatory genes is carried out by PARP which plays a pathogenetic role in the later stages of stroke and neurotrauma.

PL-36

A review: Endoplasmic reticulum stress in liver reperfusion injury (LRI)

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ABSTRACT

Liver reperfusion injury is a localized cycle of cellular metabolic disturbances, arising from intake of glycogen, loss of oxygen supply, and depletion of ATP, resulting in initial parenchyma cell death. ER stress is one of the responses to cell stress such as the unfolding of proteins to preserve homeostasis against a wide variety of pathological stimuli that further mediate autophagy like processes that cause programmed cell death. Furthermore, the unfolding of proteins causes the aggregation of proteins leading to the production of the highly unstable ROS activating the inflammatory processes tends to be measured by the elevated levels of the NF-KB and decreased level of the Nrf2 under the cellular stress conditions. The various intracellular cascades such as the activation of the proteins such as the activation of the transcription factor 6 (ATF6), the enzyme 1 requiring inositol (IRE1) and the degradation of p53 and cycline D1 necessary for the normal cell cycle process. Therefore, the present review concluded the role of endoplasmic reticulum stress mediating the various intracellular proteins involved in pathological conditions like Liver reperfusion injury and Ischemia/reperfusion injury causing the cellular death.

PL-37

A Review: Molecular Pathways involved in Neuroprotective Activity of Quercetin

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ABSTRACT

Recently there has been an increased focus on investigating whether several natural compounds, collectively known as nutraceuticals, may exert neuroprotective actions in the aging nervous system. Quercetin and its variants such as isoquercetin have received the most attention in this regard. Several studies in vitro, in animals and in humans, have provided supporting evidence for the neuroprotective effects of quercetin, either against neurotoxic

chemicals or in various models of neuronal injury. It is as yet not completely clear how such protective mechanisms work, though there are a number of hypothesis as to how this happens. In addition to the antioxidant effect, quercetin may also stimulate cellular defenses against oxidative stress .Two potential pathways include the induction of the antioxidant / anti-inflammatory enzyme paraoxonase 2 (PON2) and Nrf2-ARE.In addition, quercetin has also been shown to activate sirtuin, in particular SIRT1 to induce autophagy which may provide neuroprotection. This brief review has focused on mechanisms related to the ability of quercetin to counteract oxidative stress-mediated neurotoxicity and on some additional potential mechanisms of neuroprotection including signal transduction pathways, proteasome function and mitochondrial integrity.

PL-38

Molecular and pathological events involved in the high fructose and high fat diet induced diabetes associated nonalcoholic fatty liver disorders

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ABSTRACT

Diabetes mellitus is a metabolic disorder that occurred widely in most part of the world and affect various organs of the body especially liver. The dietary habits followed by today's world consist of excess amount of fructose and fat which is the main culprit in induction of diabetic liver injury. The release of various proinflammatory mediators like TNFα, interleukin and cytokines occurred due to elevated amount of fructose and fat. Mitochondrial oxidative stress is also increased due to consumption of HFHF diet which decrease intracellular antioxidant Thioredoxin 2 abundance, the major antioxidant that provide protection to liver and required for cell viability. HFHF diet disturb the lipid and lipoprotein clearance by elevating the level of apolipprotein CIII and by impairing the hydrolysis of triglyceride. Due to excess intake of fructose circulation free fatty acid concentration is increased that promote triglycerides and diacylglycerol deposition in liver ultimately result in insulin resistance. Apart from all these factors some of genetic factors also leads to the development of the serious disease known as diabetic liver injury. The present review focus on various pathological and molecular mechanism involved in development of the serious disorder called diabetic liver injury due to excess consumption of high fat high fructose diet. The major culprit in diabetic liver injury is fructose and fat, eliminating these two by lifestyle modification may prove beneficial in dealing with this particular serious disorder.

PL-39

Novel targets for treatment of Alcohol Withdrawal syndrome

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ABSTRACT

Alcohol withdrawal syndrome (AWS) is characterized as termination of heavy and sustained alcohol use that leads to severe symptoms of distress or loss of daily functions when alcohol consumption is diminished or stopped. It is a debilitating manifestation of alcohol dependence and responds poorly to the available clinical therapies. Globally, alcohol drinking is continuously increasing all across the world. It causes 3.3 million deaths every year (5.9% of all deaths), and 5.1% of the global burden of disease. Alcohol Withdrawal syndrome leads to various changes in brain neurotransmitters system such as GABA, glutamate, non-epinephrine, serotonin. These symptoms result from imbalance in brain receptor between gamma aminobutyric acid (GABA) and N methyl aspartate (NMDA) that occurs when the consumption of alcohol stops after long use. Studies from various *in vivo* and *in vitro* animal models of alcohol withdrawal have been conducted to explore new targets for treatment of alcohol withdrawal syndrome. Advancements in the elucidation of alcohol withdrawal syndrome mechanisms have revealed a number of key targets that have been hypothesized to modulate clinical status. The present review discusses the pathophysiology, neurobiology and treatment of alcohol withdrawal syndrome and its novel targets like corticotrophin releasing factor, sigma, melanocortin 4 receptors, opioid, potassium channels, ghrelin, and endocannabinoid receptors and gut microbata. This review discusses about various clinical and pre- clinical studies conducted during last years. The exploration of these targets may provide effective therapeutic agents for the management of alcohol withdrawal syndrome.

PL-40

Significant role of PI3K pathway in Ischemic stroke

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ABSTRACT

Ischemic disorders leading to stroke is the most common causes of disability and death in industrialized cultures. In stroke related research, the focus is on development on strategies that help in reducing neuronal death and attenuate recovery. The fine balance present between PI3K downstream signaling and apoptotic signals determines the rate of cell survival and cell death of tissues after ischemic stroke .The mounting evidences and recent advances have revealed that PI3K and its isomers have a significant role in pathogenesis of ischemic stroke, we discuss the intricate feedback and crosstalk mechanisms between PI3K and other related

pathways. Further this review specifically discuses PI3K downstream navigation and further elucidation of the complex roles, it holds in various body systems and ischemic disorders. Manipulation of PI3K pathway so far has emerged as the most effective way to deal with ischemic disorders. It is therefore with well-grounded optimism that we anticipate that targeting the feedback mechanisms related to this pathway in near future will emerge as a successful therapeutic intervention.

PL-41

Ubiquitin proteasome system in inflammation

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ABSTRACT

Ubiquitin is well established as a major modifier of signalling in eukaryotes. The main characteristic of ubiquitination is the conjugation of ubiquitin onto lysine residues of acceptor proteins. In most cases the targeted protein is rapidly degraded by the 26S proteasome, the major proteolysis machinery in eukaryotic cells. The ubiquitin–proteasome system is responsible for removing most abnormal peptides and short-lived cellular regulators, which, in turn, control many processes. The development of inflammation is mutually affected with damaged DNA and the abnormal expression of protein modification. Ubiquitination, a way of protein modification, plays a key role in regulating various biological functions including inflammation responses. The ubiquitin enzymes and deubiquitinating enzymes (DUBs) jointly control the ubiquitination. The fact that various ubiquitin linkage chains control the fate of the substrate suggests that the regulatory mechanisms of ubiquitin enzymes are central for ubiquitination. In inflammation diseases, the pro-inflammatory transcription factor NF-κB regulates transcription of pro-labour mediators in response to inflam- matory stimuli and expression of numerous genes that control inflammation which is associated with ubiquitination. The ubiquitination regulates NF-κB signaling pathway with many receptor families, including NOD-like receptors (NLR), Toll-like receptors (TLR) and RIG-I-like receptors (RLR), mainly by K63-linked polyubiquitin chains. In this review, we highlight the study of ubiquitination in the inflammatory signaling pathway including NF-κB signaling regulated by ubiquitin enzymes and DUBs. Furthermore, it is emphasized that the interaction of ubiquitin-mediated inflammatory signaling system accurately regulates the inflammatory responses.

PL-42

Role of Nrf2 in Neurodegeneration

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ABSTRACT

A salient pathological feature in many neurodegenerative diseases is oxidative stress, including Alzheimer's disease, Parkinson's disease, Huntington's disease and Amyotrophic lateral sclerosis. An effective way to confer neuroprotection in central nervous system (CNS) is the activation of nuclear factor erythroid 2-related factor 2 (Nrf2), a redox-regulated transcription factor. The expression of phase II detoxification enzymes is mediated by the cis-acting regulatory element known as antioxidant response element (ARE). The transcription factor Nrf2 binds to ARE thereby transcribing multitude of antioxidant genes. Keap1, aculin 3-based E3 ligase, that targets Nrf2 for the degradation, sequesters Nrf2 in cytoplasm. Disruption of Keap1-Nrf2 interaction can increase the endogenous antioxidant capacity of the brain and thereby providing protection against oxidative stress in neurodegenerative disorders. In this review we first introduce Keap1-Nrf2-ARE structure and function with the special focus on the several pathways involved in Nrf2 positive and negative modulation, namely PI3K, GSK-3β, NF-κb and JAK-STAT. Finally, we discuss the potential of Nrf2- related pathways as potential therapeutic targets for the slowdown progression of NDD.

PL-43

Screening models used for Anti- Epileptic activity & various herbal sources beneficial in epilepsy : A Review

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ABSTRACT

Epilepsy involves a group of problems that goes ahead of seizures. The commonness of the disease in developing countries is advanced than that in developed countries the causes of epilepsy embrace chemical imbalance such as low blood sugar or sodium, head injuries, drug abuse or with-drawl, alcohol withdrawal, stroke or conditions that affect the blood vessels (vascular system in the brain, hardening of the arteries (atherosclerosis) in the brain, brain tumour, brain infection, such as meningitis or encephalitis and Alzheimer " s disease. The research for perfect antiepileptic compound with more selective activity and lower toxicity continues to be an area of intensive investigation in medicinal chemistry. Moreover many side effect are reported in many patient treated with present available antiepileptic drugs (AEDs). The anticonvulsant activity of furanocoumarins, coumarin mixture and the essential oil obtained from the fruits of Heracleum crenatifolium was examined against maximal electroshock (MES)-induced seizures in mice. Bergapten showed significant anticonvulsant

activity. This review describes new herbal anticonvulsant agents representing various structures for which the precise mechanism of action is still not known. Here we are providing the review of herbal anticonvulsant agents, which seem to be effective when evaluated for their anticonvulsant activity.

PL-44

Chemotherapy-Induced Peripheral Neuropathy: Current And Future Trends In Management Of Peripheral Neuropathy

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ABSTRACT

Chemotherapy-induced peripheral neuropathy (CIPN) is one of the most serious, life threatening and dose-dependent complication of life saving anticancer drugs including platinums, taxanes, epothilones, vinca alkaloids and newer agents such as bortezomib. Clinically, Chemotherapy-evoked neuropathic pain symptoms initiate from feet and hands followed by progression in the ankles and wrists in a "glove and stocking" distribution. Commonly reported symptoms include paresthesia, dysthesia, allodynia, hyperalgesia, hypoalgesia and spontaneous sensations such as tingling, burning, electric, stabbing, numbness and prickling. The pathophysiology of CIPN is characterised by disrupted microtubule-mediated axonal transport, axonal degeneration, direct damage to dorsal root ganglion and mitochondrial dysfunction. Current treatment strategies include Duloxetine, Tricyclic antidepressants, anticonvulsants, non-steroidal anti-inflammatory drugs, opioid therapy and compounded topical products include baclofen and ketamine. Future trends in managing CIPN include new voltage gated sodium channel blockers that may have less risk of cardiac, motor and central nervous system effects. There is an urgent need for understanding the current and future trends in managing peripheral neuropathy.

PL-45

Coronavirus – What Should We Know?

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ABSTRACT

Coronaviruses (CoV), named by the scientists as 2019-nCoV- is a large group of viruses that cause symptoms from common cold to more severe conditions like Middle East Respiratory

Syndrome (MERS–CoV) and Severe Acute Respiratory Syndrome (SARS-CoV).It is confirmed that the virus originated from a food market in the Chinese town of Wuhan, which sold wildlife illegally. The new coronavirus species- nCoV is the strain which hasn't been identified previously. Studies revealed that it has emerged from bats that was transmitted to humans via different species. Other detailed researches have concluded that the strain, SARS-CoV is transmitted from civet cats while the MERS-CoV stain is from the dromedary camels and there several that have not yet infected humans. It also causes pneumonia, kidney disease and even death in serious cases. Standard recommendations to prevent infection spread include regular hand washing, covering mouth, nose when coughing and sneezing, thoroughly cooking meat and eggs and avoiding contact with the infected ones. The knowledge about this virus is very limited and requires a lot of researches. The main aim behind presenting this paper is to make people aware about this fatal virus.

PL-46

Effects of Bio-molecules on adaptation of β-secretase 1 and β-amyloid in $AlCl_3$ and D-galactose induced mouse model of Alzheimer's disease

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ABSTRACT

Hippocampus and cerebral deposition of β-amyloid$_{1-42}$ monomer is the major hallmark of Alzheimer's disease. β-amyloid$_{1-42}$ monomer deposition enhanced due to increment of β-secretase 1 (BACE-1) enzyme which plays an important role in cleavage of amyloid precursor protein (APP). Aluminium trichloride and D-galactose induces β-amyloid$_{1-42}$ monomer high formation in mouse brain that is why it is used as model of Alzheimer's disease model. $AlCl_3$ and D-galactose is represented as the adaptation of BACE-1 and β-amyloid$_{1-42}$ monomer and bio molecules are found to show the potential effect on alteration of β-amyloid$_{1-42}$ monomer and BACE-1 enzyme. $AlCl_3$ and D-galactose suppressed the low-density lipoprotein related protein -1(LRP-1), therefore it has no effect on receptor for advanced glycation end products (RAGE) in mouse brain. Moreover, $AlCl_3$ and D-galactose decreased the expression of neprilysin (NEP), but no effect on insulin degrading enzyme (IDE). This review study represents that $AlCl_3$ and D-galactose combination can be a useful model for mechanism and biomarker study of bio-molecules and good future prospective in drug development.

PL-47

Recent Advances In Treatment Of Myocardial Infraction

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ABSTRACT

Myocardial infraction is a myocardiac necrosis occur as a critical imbalancement between coronary blood supply and myocardial demand. It is due to formation of occlusive thrombus at a site of rupture of plaque formed in coronary atery.It is very serious complication in heart.
Treatment ranges from lifestyle changes and cardiac rehabilitation to medicine , stent and bypass surgery. MI related to percutaneous coronary intervention (PCI) and MI related to stent thrombosis . The incidence of ST segment myocardial Infraction (STEMI) has gradually declined passed over decades. Coronary Reperfusion strategies , Patient with Presenting with cardiogenic shock ,Routine early angioplasty after successful fibrinolytics Therapy , Adjunctive thrombactomy can be done to manage the MI. Mainly two cardiac injury enzyme are elevated because of heart attack either creatine kinase and Troponin.
So it can be concluded that mainly Advance in the management of STEMI have resulted to overcome the high risk population. If it is feasible then Percutaneous coronary intervention is performed when it is not then thrombolytics therapy to manage the MI.

PL-48

An Integrated Review On Adverse Drug Reaction

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ABSTRACT

Adverse drug reactions (ADR) are an important clinical problem. They account for about 5% of all hospital admissions and cause death in approximately 0.01% of surgical patients. The mechanisms leading to ADR beyond IgE-mediated allergy are still poorly understood. The importance of chemically reactive drug metabolites and the involvement of T-lymphocytes in many drug hypersensitivity reactions have been highlighted in recent years. ADR are diagnosed on clinical grounds and the temporal relation between drug intake and the appearance of the symptoms. Allergy tests are required in the further assessment of the reaction. By means of skin tests, in vitro tests and provocation tests information about the culprit drug, the mechanism involved and possible alternatives can be obtained.

PL-49

Evaluation Of Renoprotective Effects Of Silimarine In Cisplatin-Induced Nephrotoxicity In Mice

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ABSTRACT

Background: Cisplatin is a cytotoxic platinum derivative frequently used in different solid tumors, including gastric, testicular, ovarian, urologic, head and neck and other cancers. One of its several dose-limiting toxicities, which can also force an interruption of treatment, is its renal toxicity. This biochemical and histologic study investigated a possible protective effect of Silimarine, a naturally occurring compound obtained from *Silybum marianum* L., with regard to cisplatin-induced nephrotoxicity in the mice.

Methods: The animals were divided into 4 groups: 60 mg/kg Silimarine + 10 mg/kg cisplatin, 80 mg/kg Silimarine + 10 mg/kg cisplatin, only 10 mg/kg cisplatin and negative control (healthy) group. During 14 days, the treatment and treated control group took drugs, while the healthy animals were given distilled water on the same duration. All animals were sacrificed by high-dose anesthesia at the end of the 14 days of treatment; their kidneys were removed and subjected to histologic and biochemical study.

Results: In both of the doses of Silimarine we used, we find that Silimarine decreased the levels of malondialdehyde, creatinine, blood urea nitrogen and myeloperoxidase activity when compared to cisplatin group. On the other hand, it increased total glutathione level in all doses. Slight histopathological findings were determined in Silimarine groups when compared to cisplatin control group.

Conclusion: In the light of our results and literature knowledge, we can conclude that the cytoprotective effect of Silimarine in cisplatin toxicity originates from its own antioxidant effects.

PL-50

Radiopharmaceuticals: Important Tools For Clinical Diagnosis

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ABSTRACT

Radiopharmaceuticals are unique medicinal formulations containing radioisotopes which are used in major clinical areas for diagnosis and/or therapy. The facilities and procedures for the production, use, and storage of radiopharmaceuticals are subject to licensing by national and/or regional authorities. Radiopharmaceuticals have been labelled with radioactive material for the purpose of diagnosis or therapy. The radioactive material emits radiation that can either act as a "light beacon" which can be externally imaged or as a therapeutic agent to treat a cancerous area. Each radiopharmaceutical is designed based on the physiological function of the target organ. Radiopharmaceuticals are composed of a radioisotope and a carrier molecule. After

administration the radioisotope emits gamma radiation as it decays to a stable form. The carrier molecule has a ligand attached which allows targeting of individual receptors on a cell. Over the past few years, nuclear medicine has undergone impressive growth with the development of positron emission tomography (PET), especially using ^{18}F-fluoro-deoxy-glucose (^{18}FDG), and new approaches in targeted radionuclide therapy. These developments pave the way for personalized medicine by offering practical solutions, especially in oncology, neurology, and cardiology.

PL-51

Evaluation amidst pharmacological, physical and cognitive management in patients with Alzheimer's disease: A general comparison based on literature

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ABSTRACT

Introduction: In spite of the severe community health concern, merely few pharmacological and medical treatment approaches have been permitted aimed at management of Alzheimer's disease (AD) and these indeed regulate symptoms rather than correcting the progression of the disease. Investigation of probable pharmacological therapy have normally been commenced in patients with clinically evident disease, however proof suggests that the pathological variations related with the disease initiate several years beforehand. It is likely that pharmacological treatment may be potential in advance of the clinical stage beforehand establishment of the incurable and devastating degenerative process of neurons. **Results**: Cognitive and physical managements (CT and PT) are two non-pharmacological approaches often utilized in Alzheimer's patients. CT and PT had an effect on some cognitive domains in AD.CT also improves mental flexibility, memory, executive function, processing speed, attention, and fluid intelligence in patients. **Conclusion**: This review gives an insight into major Diagnosis, pharmacological and non-pharmacological approaches in treatment of the Alzheimer's disease and confirms the positive effect of CT and PT on cognitive impairment in AD. Both of them contribute to the fact that there is potentially beneficial relationship between physical exercise and cognition.

PL-52

Photopharmacology

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ABSTRACT

Photopharmacology is an emerging approach in medicine in which drugs are activated and deactivated with light. The energy of light is used to change for shape and chemical properties of the drug, resulting in different biological activity. This is done to ultimately achieve control when and where drugs are active in a reversible manner, to prevent side effects and exposure to the environment of antibiotics. Switching drugs 'on' and 'off' is achieved by introducing photoswitches such as azobenzene, spiropyran or diarylethene into the drug. By introducing the photoswitch, the drug has two different states between which can be switched with light. Since both states have a different structure, the activity of the drug is different hence the 'on' and 'off' state of the drug. An example is photostatin, which is an inhibitor that can be switched on and off in vivo, to optically control microtubule dynamics. The present review gives an insight into the various developments in the field of photopharmacology.

PL-53

Diabetes mellitus: Etiology

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ABSTRACT

Diabetes Mellitus (DM) refers to a group of common metabolic disorders that share the phenotype of hyperglycemia. Several distinct types of DM are caused by a complex interaction of genetics and environmental factors. Depending on the etiology of the DM factors contributing to hyperglycemia include reduced insulin secretion, decreased glucose utilization, and increased glucose production. Diabetes is known as *Prameha*, which has been discussed in Ayurveda since antiquity. *Charaka* has given exhaustive description of the disease *Prameha* which ultimately progresses towards *Madhumeha* or the sweetness of urine in addition to Polyurea.

PL-54

Psoriasis Disease: Symptoms, Treatment & Prevention

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ABSTRACT

Psoriasis is a genetically determined immune-mediated inflammatory disease mediated by T-helper 1 (Th1)/(Th17) T cells. With a prevalence of 0.44-2.8% in India, it commonly affects individuals in their 3rd or 4th decade with males affected two times more common than females.

The most common forms are psoriasis vulgaris, psoriasis arthritis and pustular psoriasis. Psoriasis can have a considerable impact on health, quality of life and professional life as it is a chronic disease and a definitive cure is not possible. Although psoriasis is not contagious, many patients experience a profound stigmatization. Over 10 million persons with psoriasis are treated as outpatients in India every year. About 1.7% of the total world population has psoriasis, which works out to 1 in 59 people. Nowadays, psoriasis is not limited to skin but is connected with several comorbidities like, psoriatic arthritis, Crohn's disease, ulcerative colitis, non-alcoholic liver steatosis, psychiatric disorders and mainly diseases of the socalled metabolic syndrome, like diabetes mellitus type 2, arterial hypertension or dyslipidemia. In the last years, new information is arising which connect psoriasis with sleep apnoe and chronic obstructive pulmonary disease.

PL-55

Alternatives To Animals In Experimentation And Research Studies

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ABSTRACT

As one would imagine, in today's technologically advanced world, in which science has made monstrous steps in many promising directions that many alternatives would exist to animal testing. Still innumerable animals are sacrificed every year in the routine pharmacological screening and toxicological evaluations of the drugs and industrial chemicals. The awareness regarding animal welfare has given further impetus to acceptance of best suitable alternatives. Many alternatives exist to the use of live animals in research. The review also highlights the strengths and weakness of the non-animal alternatives in research and discusses the alternatives to animals. Currently used: "Synthetic skin," called Corrositex, Computer modeling, Improved statistical design and the Murines Local Lymph Node Assay (LLNA). It ends on the positive a tone regarding the utility of the alternative methods.

PL-56

CORONA VIRUS

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ABSTRACT

Coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and

Severe Acute Respiratory Syndrome (SARS-CoV). Coronaviruses are zoonotic, meaning they are transmitted between animals and people. Detailed investigations found that SARS-CoV was transmitted from civet cats to humans and MERS-CoV from dromedary camels to humans. Common signs of infection include respiratory symptoms, fever, cough, shortness of breath and breathing difficulties. In more severe cases, infection can cause pneumonia, severe acute respiratory syndrome, kidney failure and even death. Standard recommendations to prevent infection spread include regular hand washing, covering mouth and nose when coughing and sneezing, thoroughly cooking meat and eggs. Avoid close contact with anyone showing symptoms of respiratory illness such as coughing and sneezing.

PL-57

Spiral CT scans, an innovative molecular and imaging approaches for the detection of lung cancer

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ABSTRACT

Lung cancer is the most common cause of cancer death worldwide. Lung cancer consists of several types including small cell (SCLC and non-small cell (NSCLC). They may arise from the major bronchi (central) or from the peripheral structures (bronchioles and alveoli) of the lung. Squamous cell carcinoma and SCLC usually arise centrally, while adenocarcinoma and large cell carcinoma usually arise peripherally. So it is important to understand the carcinogenesis process and correlate histopathology with the molecular profile and biology to define what constitutes an important early cancer to detect and treat. Now the use of spiral CT scan in lung cancer screening studies has been reported by a number of groups. In comparison to the conventional chest X-ray low dose spiral CT scans detect lung cancer at a smaller size and earlier stage. Currentlythe sputum cytology examination is the only non-invasive method can used to detect early lung cancer and pre-malignant lesions. Although the specificity of conventional sputum cytology is very high (~98%), the sensitivity is very low. To improve the sensitivity of sputum test as a screening tool for the detection of early lung cancer, three approaches are currently under development: immunostaining of transformed epithelial cells, PCR-based assays to detect oncogene mutations or and computer-assisted image analysis of exfoliated sputum cells.Some other newer imaging technologies include autofluorescence bronchoscopy, virtual bronchoscopy, optical coherent tomography and confocal microscopy.

PL-58

Neuroprotective effects of quercetin loaded nanoconstructs in murine neurocognitive model

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ABSTRACT

In the present study, Formulation by Design (FbD) enabled lipidic nanostructured system (NLCs) were formulated for quercetin. They were evaluated for their efficiency in nose-to-brain targeting and biodistribution in a suitable animal model after intranasal delivery. Further, particles size characterization revealed uniform shape with size less than 200 nm. Stability studies indicated refrigeration found to be the preferred storage condition. The intranasal delivery of quercetin nanoconstructs resulted in over 8 folds increase in relative brain *vis-a-vis* pure drug. The brain distribution studies of nanoconstructs exhibited significantly higher C_{max} (825.3±76 vs. 611.23 ±15 µg per gram of brain tissue), delayed T_{max} (4±1 vs.2± 0.5 h), prolonged $T_{1/2}$ (64.1±12 vs.12.62±1 h), MRT (36.80±2 vs. 6.93±0.5 h) and enhanced $AUC_{0-\infty}$ (30914.33±113 vs. 3849.40±20 µg h/L) *vis-a-vis* pure quercetin. Moreover, biodistribution studies revealed lower quercetin concentration in the in non targeted tissues following intranasal delivery of nanoconstructs. Hence, the current investigation demonstrates the potential of nano-antioxidant as a potent therapeutic intervention for HIV associated neurocognitive disorders with improved biopharmaceutical attributes.

PL-59

Updated statistics and clinical manifestation of polycystic ovary syndrome (PCOS)

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ABSTRACT

Polycystic Ovary Syndrome (PCOS) is a complex milieu of hormonal, environmental and lifestyle imbalance progressing women towards infertility and cancer. PCOS was first reported by Stein and Leventhal in 1935. The prevalence of PCOS is highly variable ranging from 2.2% to 26% globally. There are few studies conducted in India and prevalence of PCOS was reported as 9.13% for South India (by Rotterdam's criteria) and 22.5% for Maharashtra (by Androgen Excess Society criteria). There are a large percentage of individuals that remain undiagnosed even after visiting multiple health care providers. Sometimes, socio-economic barriers such as lack of awareness, fear, shyness and misconceptions dwelling in the mind of Indian women disable them to recognize the symptoms of PCOS. Clinical manifestation is diverse that crafts distressing cosmetic and pathological indications such as acne, hirustism, weight gain, alopecia, acanthosis nigricans, menstrual irregularities advancing to infertility, risks of miscarriages and cancers. Early diagnosis of PCOS is important as it has been reported

as an increased risk for developing several medical conditions including insulin resistance, type-2 diabetes, dyslipidemia, hypertension and heart diseases. Health care professionals involving an endocrinologist, dermatologist, psychologist/psychiatrist, dietician and sometimes a bariatric surgeon should be undertaken for long-term management of these patients.

PL-60

Influence of environment on asthma patients in India

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ABSTRACT

Asthma is a globally significant non-communicable disease with major public health consequences for both children and adults, including high morbidity, and mortality in severe cases. This condition is due to inflammation of the air passages in the lungs and affects the sensitivity of the nerve endings in the airways so they become easily irritated. The burning of paddy straw coupled with Diwali festivities has resulted in rise in number of asthma and respiratory infection cases. Despite the ban, some farmers are still burning paddy stubble without thinking about its harmful effects. The consequences of this disease can be clearly understood from the recent scenario of North India. The study in question should provide an impetus to further studies on the subject so as to carve policies to tackle the burden of asthma and its economic costs. The economic burden of asthma can be decreased with access to preventive care, early treatment, and use of primary care health providers instead of emergency departments. Generic barriers to better health such as poverty, poor education and awareness, lack of sanitation and poor infrastructure; low spending on healthcare; inequity in facilities; and some environmental barriers that include tobacco smoking, pollution, and poor nutrition need a response from the public health perspective by way of regional or country programs.

PL-61

CRISPR-Cas9: Tool for genetic engineering

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ABSTRACT

CRISPR- Cas9 system: A method of genome editing where either gene is disrupted or inserted by using Cas9 protein and specific guide RNA's. The technology is used for gene editing in

plant and for treatment of neurological diseases including Huntington disease, Amyotrophic lateral sclerosis, fragile X syndrome.

CRISPR-Cas (clustered regularly interspaced short palindromic repeats and its associated proteins-Cas9) systems are actually a part of bacterial immune system which detects foreign DNAand cleaves it. This system Facilitate targeted gene editing. Method available to deliver CRISPR-Cas9 are viral, non viral & physical method.

This technique allows genetic material to be deleted added or altered at any genomic location. The CRISPR-Cas technique has created lot of excitement in scientific field as it is faster, efficient, more accurate, lower cost than other genome editing techniques.

PL-62

Hepatotoxicity And Hepatoprotective Agents

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ABSTRACT

The maintenance of a healthy liver is vital to overall health of the human beings. Since the liver is involved in almost all biochemical processes and there are many different diseases that will affect it. The liver is often abused by environmental toxins, which are eating habits, alcohol and overdose of certain drugs which can damage and weaken the liver and eventually lead to many diseases. Medicinal herbs are significant source of hepatoprotective drugs. Mono and poly-herbal preparations have been used in treatment of liver disorders. From the literature review near about 178 medicinal plants are reported to possess a hepatoprotective activity. A drug having beneficial effect on the liver is known as hepatoprotective drug. On the other hand, drugs having toxic effect on the liver are better known as hepatotoxic drugs. The most commonly used parameters to assess the hepatoprotective activity are morphological e.g. Liver weight and volume, biochemical estimations, such as measurement of transaminase activity, SGPT, SCOT, alkaline phosphatase, serum bilirubin, total serum proteins, albumin, globulin and prothrombin time, functional parameters, pentobarbitone and hexobarbitone sleeping time and finally histopathological study regarding presence of necrosis, fatty degeneration and cirrhosis.

PL-63

Vasvular Inlammation Into The Cells Due To Hypertension

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ABSTRACT

The purpose of this review is to provide basic understanding of the important relationship between microvascular remodelling, angiogenesis and hypertension, that is, provide an overview of recent experimental and clinical evidence from anti-hypertensive and pro- and anti-angiogenic therapy with respect to hypertension and microvascular structure. Microvascular rarefaction, that is, a loss of terminal arterioles and capillaries, is found in most forms of human and experimental arterial hypertension. This further increases peripheral resistance, and aggravates hypertension and hypertension-induced target organ damage. In some cases with a genetic predisposition, hypertension is preceded by a loss of microvessels. Therefore, new therapies aimed at reversing microvascular rarefaction potentially represent candidate treatments of hypertension. The microvasculature is formed by the continuous balance between de novo angiogenesis and microvascular regression. Imbalanced angiogenesis, in addition to functional shut-off of blood flow, contributes to microvascular rarefaction. Numerous clinical trials assessing anti-angiogenic agents in cancer patients show that this therapy leads to microvascular rarefaction and causes or aggravates hypertension. The development of specific pro-angiogenic treatment to correct hypertension or ischaemic disorders, however, it is still in its infancy. On the other hand, long-term treatment by classic anti-hypertensive therapies that present vasodilator activity can correct for hypertension-associated rarefaction in man.

PL-64

Anti-Ulcer Evaluation Of Hydroalcoholic Extract Of *Ziziphus Nummularia*

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ABSTRACT

Aim: The current study is to investigate the anti-ulcer potential of hydro alcoholic extract of leaves of *Ziziphus nummularia.*

Materials and Methods: The plant was collected at Meera Nagar in state Jodhpur of country India and extract was done using ethanol and water (70:30). The anti-ulcer activity of hydroalcoholic extract (HAZN) was evaluated using aspirin plus pylorus ligation induced ulcer model. The animals were divided randomly in five groups 5 groups; each group consists of 6 rats. Group 1 received vehicle 1% (CMC), Group 2 received 1% CMC+ Aspirin (200mg/kg), Group 3 received Aspirin (200mg/kg) + Ranitidine (20mg/kg) while Group 4 received HAZN (100mg/kg) & Group 5 received HAZN(200mg/kg) + Aspirin(200mg/kg). The treatment was continued for seven days and on seventh day pylorus ligation was done and various parameters were evaluated viz. measurement of gastric acid secretion, pH, acidity and acid output, ulcer index and ulcer inhibition rate, measurement of total protein and carbohydrate in gastric juice

and histological studies.

Results: The HAZN exhibited significant antiulcer activity at dose of 200mg/kg p.o. when compared to ranitidine. The extract significantly reduced the gastric secretions and improves the ulcer index. Moreover the total protein content in the gastric juice is also reduced significantly. The histology also reveals that the plant extract at high dose has a comparable anti-ulcer potential as compared to ranitidine.

Conclusion: It is concluded that HAZN has a potent anti-ulcer potential**.**

PL-65

Anti-Arthritic evalution of active fraction of *Eclipta prostata* Linn.

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ABSTRACT

Aim: The current study is designed to investigate the anti arthritic activity of active fraction of *Eclipta prostrata* Linn.

Material and Methods: The anti-arthritic activity of fractions of chloroform extract was evaluated using CFA (Complete Freund's adjuvant) induced arthritis. The animals were divided in six groups; each group consists of six rats. Group 1 received 1% CMC – water solution, Group 2 received 0.1ml CFA + 1% CMC water solution, Group 3 received 0.1ml CFA + 10mg/kg diclofenac, Group 4 received 0.1ml CFA + 50mg/kg active fraction, Group 5 received 0.1ml CFA + 100mg/kg active fraction and Group 6 received 0.1ml CFA + 200mg/kg active fraction. The active fraction and standard drug was administered from day 1^{st} to 12^{th} day post CFA challenge day. The paw volume and other arthritic, radiographic and histological parameters were evaluated on 21^{st} day.

Result: The active fraction exhibited significant anti-arthritic activity at dose of 200mg/kg p.o. when compared to diclofenac. The active fraction showed significant improvement as depicted by histological as well as radiographic studies.

Conclusion: It is concluded that active fraction obtained from chloroform extract has a potent anti-arthritic potential.

PL-66

Estimation of Arsenic in water by Hydride Generation Atomic Absorption Spectrophotometer (HG-AAS)

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ABSTRACT

The study designed to detect arsenic level in water in the five different locations in Faizabad district of eastern Uttar Pradesh. This exercise was performed to determine the arsenic level in the collected samples from the different locations of the study vicinity by using hydride generation Atomic Absorption spectrophotometer (HG-AAS) technique. Concentrations of arsenic in water were determined with a HG-AAS (Shimadzu model AA-7000) connected to an auto-sampler (ASC-6100, Shimadzu) and a hydride generation system (HVG-1, Shimadzu). The spectrophotometer was operated at 193.7 nm with a slit width of 1.0 nm. The lamp current was 12 mA. The sensitivity for As^{+5} to form hydride is very low (5-10%) so we cannot measure As^{+5} directly but its concentration is calculated as the difference between total arsenic and As(III), so we first measure the samples without and reduction with (KI and Ascorbic acid mixture), and it is As(III) concentration only, then the sample is totally reduced to measure the total arsenic and the As(V) concentration can be calculated.

For analysis of arsenic by HG-AAS, the procedure involves the reaction of As(III) with the reducing agent $NaBH_4$ and HCl to produce volatile hydride arsine AsH_3 which is carried by argon gas flow to the optical cell where the arsine decomposes into As0 atoms and finally is detected by photomultiplier tube detector (PMT). The main advantages of HG-AAS are the separation of the matrix, good reproducibility and increase in the detection limit of arsenic. Water samples (125ml) were collected from different water sources in polyethylene vials, these vials are pre-treated with clean up procedure. 80 samples of water collected from different locations of Faizabad districts were analyzed for detection of arsenic level. Results of water, soil and poultry meat were reported as mean±standard deviation (SD, n=3) of at least three replicates for each sample using Microsoft Office Excel 2007 software for descriptive analysis. Complete randomized design was used. All the water samples have arsenic level ranging from 1.049-13.879µg/l with a mean value of 5.5312±3.0407µg/l. Out of these 80 water samples; 9 i.e. 11.25% samples were shown to have arsenic level above MPL (10µg/l).

PL-67

Kidney Stones

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ABSTRACT

Kidney stone are a common problem worldwide in which mineral deposits in the renal calyces and pelvis that are found free or attached to the renal papillae. It is associated with an increased risk of end stage renal failure. Kidney stones contain crystalline and organic

components which are formed when the urine become supersaturated with respect to a minerals, calcium oxalate is the main constituent of most stone formed at Randall's plaque on the renal papillary surfaces. Mechanism of stone formation is a complex process which results from several physicochemical events including super saturation nucleation, growth, aggregation and retention of urinary stone constituents with in tubular cells. These steps are modulated by an imbalance between factors that promote or inhibit urinary crystallization. The cellular injury also promote retention of particles on renal papillary surfaces obesity, diabetes, hypertension and metabolic syndrome are considered risk factor for stone formation which in turn leads to chronic kidney disease and end stage renal disease. Currently there is no satisfactory drug to cure or prevent kidney stone. There is a great need for recurrence prevention that requires a better understanding of the mechanisms involved in stone formation of facilitate the development of more-effective drugs.

PL-68

Celiac Disease

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ABSTRACT

Timely diagnosis and treatment of celiac disease is important not only to improve the immediate quality of life of the patient but also to decrease the long-term risks of untreated celiac disease. A large Finnish study showed that the 5-year survival among patients who strictly adhered to a gluten-free diet was similar to that of the general population. Growth and development in infants and children proceed normally with continued gluten avoidance, and in adults many of the disease complications including osteopenia are avoided. However, peripheral neuropathy, ataxia, and severe osteopenia, particularly in the setting of secondary hyperparathyroidism, usually persist. Enteropathy associated T-cell lymphoma is widely recognized as a complication of celiac disease, and gluten restriction has been shown to significantly decrease the risk of this malignancy to the level of the general population. Whether gluten restriction is beneficial or should be recommended for patients with asymptomatic disease remains controversial. However, the available evidence suggests that this treatment is always indicated in patients showing celiac enteropathy, at least to prevent the possible long-term complications of this condition. Despite a dearth of evidence presently to support population-wide screening for celiac disease, patients at high-risk for celiac disease should be screened based on symptoms, family history, and associated conditions, as morbidity from subclinical disease in young patients has been demonstrated.

PL-69

Antibiotic Resistance: A Review

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ABSTRACT

Antibiotics are the substances that are mostly active against bacteria. Antibiotics are the 'wonder drugs' to fight with microorganisms. Antibiotic resistance term was reported when a drug loses its ability to inhibit bacterial growth effectively. Bacteria become 'resistant' and continues to multiply. When bacteria replicate in the presence of antibiotics is termed as "resistant bacteria". The disclosure of antimicrobial resistance was observed after the introduction of new antimicrobial compounds. Antibiotic resistance can occur as a natural selection process where nature empowers all bacteria with some degree of resistance . For example, one study confirmed that sulfamethoxazole and trimethoprim (TMP-SMZ), ampicillin and tetracycline that were commonly in use, but now have no longer role in treating non-cholera, diarrhoea disease in Thailand . At the same time, an another study conducted in Bangladesh showed the effectiveness of the same drugs in treating them effectively. Control of infection has long been a serious issue of concern, regardless of the clinical proof that approaches small molecule monotherapy are inadequate in resistance settings. The public health leaders should establish a surveillance system that is coordinated at national and international levels, ongoing analysis and a mandatory reporting system for antibiotic resistance. Both domestic and global policies need to adhered-to to stop the overuse and misuse of antibiotics. Recently marketed new antimicrobial agents with new targets, while a very few are Macrocyclic antibiotic; Fidaxomicin first drug which is effective against Clostridium difficile infection (CDI). And Newer cephalosporinns; Ceftaroline fosamil a prodrug of ceftaroline effective against Methicillin resistant staphylococcus aureus (MRSA) and vancomycin-resistant s.aureus (VRSA).

PL-70

Corona Virus

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ABSTRACT

Corona virus is surging day by day, and it is affecting many nations. The corona virus has symptoms, which we can feel easily like common cold, cough, headache, dry throat. Although, there is currently no vaccination available in the pharmaceutical market to curb the disease,

some countries are trying to make vaccine. Illness from the common cold to more chronic diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). In rare cases, they are what scientists call zoonotic. Detailed study found that SARS-COV was transmitted from civet cats to humans and MERS-COV from camels to humans. On 31 December 2019, WHO was alerted to several cases of pneumonia in Wuhan city, China. After one week, Chinese authorities confirmed that they had identified a new virus. The virus is a corona virus was temporarily named "2019-nCoV." Centers for disease control and prevention (CDC) conducts various different laboratory tests to detect MERS-CoV infections such as Molecular test, serology test to confirm active infection and detecting antibodies to MERS-CoV, respectively. Serology tests are used for surveillance or investigation and not for diagnosis.

PL-71
Long Term Safety, Efficacy And Toxicity Of Contraceptives Intra-Uterines Devices: A Review

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ABSTRACT

The intrauterine device (IUD) is a safe and highly means of contraception, though there is high concern related to safety, efficacy and toxicity issues of different contraception methods. Intrauterine Devices (IUD) are coiled, small-sized-shaped biodegradable devices in the form of LARC (Long –acting reversible birth control). Based on the presence and absence of hormone IUD is fragmented into two types-Non-hormonal IUD and Hormonal IUD. Non-hormonal IUDs are copper containing IUDs, it have T-shaped body which is made up of polyethylene and it contain the thread in the lower end which is made of Monofilament polyethylene polymer. Whereas hormonal IUDs contain progesterone, its T-shaped body is made up of polydimethylsioxane polymer and the steroid is placed in the vertical stem and in the lower portion of the T-shaped body it contain the monofilament polyethylene thread, they help in preventing pregnancies. The key features of these long-term health effects. Risks of utilization include perforation and an increased risk of infection in the first few days following insertion. Overall, the number of adverse events is low, making this a very safe contraceptive method. In the case of Copper-T, the burst release technique causes increasing in bleeding, cramps etc., but it gets better over time. This study summarizes the significant features if each IUD and provides a summary of the differences to aid clinicians in advising women about IUD choices.

PL-72
Coronavirus

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ABSTRACT

Coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). A novel coronavirus (nCoV) is a new strain that has not been previously identified in humans. Coronavirus first identified in Wuhan, Hubei Province, China. Coronaviruses are zoonotic, meaning they are transmitted between animals and people. Common signs of infection include respiratory symptoms, fever, cough, shortness of breath and breathing difficulties. In more severe cases, infection can cause pneumonia, severe acute respiratory syndrome, kidney failure and even death. The novel coronavirus' case **fatality rate** has been estimated at around **2%**, in the WHO press conference held on January 29, 2020. About 80% of those who died were over the age of 60 and 75% of them had pre-existing health conditions such as cardiovascular diseases and diabetes. The novel **coronavirus** (2019-nCoV) is affecting **28** countries and territories around the world. The doctors, from the Rajavithi Hospital in Bangkok, found that a drug cocktail of HIV and flu medication had worked on several patients. This is not the cure, but the patient's condition has vastly improved. The successful treatment combined the HIV medications lopinavir and ritonavir with large doses of the flu drug oseltamivir. Standard recommendations to prevent infection spread include regular hand washing, covering mouth and nose when coughing and sneezing, thoroughly cooking meat and eggs. Avoid close contact with anyone showing symptoms of respiratory illness such as coughing and sneezing.

PL-73

Antibiotic Resistance: A Global Threat

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ABSTRACT

The emergence of antibiotic resistance have been prevalent ever since the development of antibiotics. However, it continues to pose a global threat as common infections like pneumonia, tuberculosis, gonorrhea, and foodborne diseases have become harder and virtually impossible to treat in certain cases. Antibiotic resistance can be attributed to a number of reasons including non-judicial and overuse of antibiotics, their inappropriate use in viral infections and the stall in pharmaceutical development of newer antibiotics due to economic and regulatory barriers. This, if left unchecked, may lead to post

antibiotic era in which common infections and minor injuries can be life threatening. Therefore the steps in managing antibiotic resistance crisis include predicting, detecting and deterring its progression. Moreover, the initiatives taken by WHO, such as The Global Antimicrobial Resistance Surveillance System (GLASS) and Interagency Coordination Group on Antimicrobial Resistance (IACG) serves to address the need of handling antibiotics with care. Nevertheless, the challenge still remains in the development of novel antimicrobial agents with better efficacy and fewer complications. This study focuses on the factors contributing to antibiotic resistance, microbial mechanisms, epidemiology, clinical importance, treatment, and its prevention. In addition, it explores the challenges faced in investigating and developing antimicrobial drugs.

PL-74

Pharmacognostic Standardization & In Vitro Anti-Arthritic Evaluation Of Ziziphus Nummularia

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ABSTRACT

Objective: Pharmacognostic Standardization & In Vitro Anti-Arthritic Evaluation of *Ziziphus nummularia*

Material & Method: The standardization of leaves of *Z. nummularia* was done using various parameters such as total moisture content, ash value, fluorosceence analysis, estimation of aflatoxins, microorganism and pesticides. Further seven extracts i.e aqueous, methanol, ethanol, hydroalcohiolic, ethyl acetate, chloroform and pet ether extract was prepared using soxhlet apparatus and were subjected to phytochemical analysis. All the extract was further investigated for in vitro anti-arthritic activity using protein denaturation method and proteinase inhibitory method.

Result: The phytochemical analysis revealed that leaves contain alkaloids and flavanouids as major secondary metabolites. Moreover, the hydroalcoholic extract at a 5mg/ml concentration shows maximum anti-arthritic activity.

PL-75

Knowledge and attitude of Mothers of Infants Regarding Weaning: A Study in Rural Area of Rohtak

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A**BSTRACT**

Introduction: Weaning is the most critical period for growth of the child. This is the time when growth faltering and nutritional deficiencies manifest in children. Weaning, a traditional period from breast-feeding to adult diet is usually associated with a number of concerns and problems in developing countries such as what foods should be given to the child, how and when they should be given.

Materials and Methods: We have conducted the study using quantitative approach and non-experimental design on 100 mothers of infants by non-probability convenient sampling technique. The knowledge and attitude of mothers of infants regarding weaning was checked by structured questionnaire and attitude checklist, respectively.

Results: None of the mothers of infants had inadequate knowledge; 31% had moderate knowledge and 69% had adequate knowledge regarding weaning. Majority of samples (98% mothers) had favorable attitude and only 2 % had unfavorable attitude regarding weaning. The mean value of test knowledge score and attitude was 15.4 and 9.45, respectively. There was a significant correlation between knowledge and attitude of mothers regarding weaning.

Discussion: The significant correlation between knowledge and attitudeof mothers of rural area of Rohtak (Haryana) showed that they are aware and can understand the importance of weaning.

Conclusion: On the basis of obtained results it can beconcluded that the knowledge of the mothers of infants is adequate in rural area of Rohtak (Haryana).

PL-77

New Era of Disease Evaluation Using Biomarkers: A Systematic Approach

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ABSTRACT

The breakthrough innovation of biomarkers along with the implementation of the same acquiring multi-prolonged approaches and disciplines is now helping to re-shape the various aspects of health and diseases. Biomarker can be defined as the characteristic that are measured objectively and can be used as an indicator of pathological, pharmacological response in return to a therapeutic intervention. These can be general or classical biomarkers, molecular biomarkers,and digital environmental biomarkers. Classical biomarkers are used to study the possible alterations in the blood pressure, blood glucose levels in diabetes mellitus whereas the molecular biomarkers are used to check the specific alterations in the cell or DNA,

RNA.

Biomarkers are mainly used to assess the stage of the disease, to detect the real-time monitoring of the subject, acts as end points in case of clinical trials, and along with this an integrated patient timeline view chart can also be acquired. These biomarkers provide sources either in the form of view charts or data that can be collected from the digital devices.Biomarkers also help in the management of various diseases either by providing or establishing the better understanding and definite diagnosis in case of life-threatening disorders. Furthermore, they are mainly used for the early diagnosis as well as in the stratification and can also be used for the targeted therapy. They are used for detecting the severity of disease along with its proper monitoring with relation to the therapy provided and thus serves as an integral role in the modern scientific domain.

Keywords: Biomarkers; pathology, pharmacological response; targeted therapy

PL-78

Possible Mechanisms for Combating 2019-Novel Corona Virus Infection

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ABSTRACT

There is a large family of virus that causes illness from common cold to more severe diseases such as Severe acute respiratory syndrome (SARS) and Middle east respiratory syndrome (MERS). The causative virus for these infections are SARS CoV(first identified in China, 2002) and MERS CoV(first detected in Saudi Arabia, 2012). Both were declared epidemics and had taken a disastroustoll on human lives. A new strain (similar to SARS) coined as 2019 Novel corona virus (2019-nCoV) has been identified in late December 2019 in Wuhan city of China. The symptoms range from severe fever, cough, shortness of breath, diarrhoea and congestion in nose and throat. There is no specific treatment(s) or vaccine to cure or prevent the infection caused by 2019-nCoV. The entry of virulent strain into target cells of hostis believed to be result of interaction of S1 subunit of spike protein of nCoV with ACE2 host receptor.On the basis of above cited hypothesis it is proposed that ACE2 inhibiting drugs or antibodies can be used to promote the denaturation of viral protein which inhibit viral

multiplication in the host. Antiviral drugs such as interferon alpha, Ribavirin, Lopinavir and Ritonavir can be used to stop the outbreak of this virus due to protease inhibition by these antiviral agent.

PL-79

A Study of Requirement of the Oral H1 Anti Histamine Recommended Byt Aria Guidelines (2008)

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ABSTRACT

Background: Bilastine is a modern non sedative second generation H_1 which has the highest no of desired features according to international ARIA guidelines 2008. It is potent and selective blocking at H1 receptors with rapid onset of action. No interaction with CYP450, no anticholinergic activity. It has no cardiotoxic potential.

Objectives: This study compared the safety and efficacy of an oral bilastine with cetrizinelevocetrizine fexofenadine and desloratadine, and also comparison peripheral and central effects of single and repeated oral dose administration and drug-drug interaction.

Methods: The double blind cross-over study compared the potential of bilastine, cetrizine, and fexofenadine to relives the symptoms of Allergic rhinitis. (75 allergic volunteers).A randomized, double blind study compared the efficacy and safety of bilastine 20mg vs cetrizine 10mg and placebo in relieving the symptoms of SAR. (683 patients of SAR). In a multicentre, randomized, placebo-controlled, Double-blind, parallel group study compared the efficacy and safety of bilastine 20mg vs cetrizine 10mg or placebo in relieving the symptoms of PAR. (650 patients of PAR).A randomized, double blind, multicentre, placebo controlled study compared the clinical efficacy and safety of bilastine 20mg vs levocetrizine 5mg and placebo. (525 male female subjects of CIU).

Results: No drug-drug interaction seen with bilastine, there is nocardiotoxic potential, no dose adjustment required in patients with hepatic and renal failure

PL-80

The biological basis of molecular targeted therapy in cancer chemotherapy

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ABSTRACT

Cancer is the major health problem worldwide. For the treatment of cancer researchers focus on the new approaches. Molecular targeted therapy (MTT) is a new approach to cancer treatment that resulted from the plethora of molecular and biological discoveries into the Etiology of cancer, which took place over the last quarter of a century. Several agents have already been approved by FDA for clinical use. Many such molecules are under clinical trials. Agents in this type of therapy are different from the traditional chemotherapeutic drugs. This article discusses drugs that are already available for clinical use. A particular focus of this review is on the application of molecular targeted therapy in cancer treatment and the potential mechanism that can facilitate further improvement of anticancer.

PL-81

Candida Auris –A Fungal infection

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ABSTRACT

Candida auris (also called c.auris) is a fungus that cause serious infection. Patient with C. auris infectes their family member and other close contact, family member can help stop it from spreading.It cause serious infection : C. auris can cause bloodstream infection even death(for example infection that affect the blood, heart, and brain) .Antifungal drug mainly used to treat candida infection . C.auris was just Discovered in 2009.It has spread quickly more than one dozen countries. In conclusion, C.auris is associated with wide variety of invasive infection and carries a high motality rate. Source control is most effective intervasion to reduce these critically ill patients.

PL-82

Study on High Glycaemic Load Diets Influencing Coronary Heart Disease

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ABSTRACT

Proposed investigation is based on the intake of high glycaemic diets that causes Coronary heart disease. The study is aimed to study the fact that high glycaemicagents are causing Coronary heart disease .CHD biomarkers, which are found on these pathways are only measurable data to link diet with these CHD pathways. They were thus used to simplify the link between diet and the CHD mechanism. The resulting integrated analysis provides insight into the higher order interaction lying under CHD and high glycaemic load diets. A measurable relationship between HGL diets and relative risk attributed important CHD serological biomarkers. It shows that HGL diets not only influences the lipid and metabolic biomarkers, but also the inflammation, coagulation and vascular function biomarkers.Thus, it was concluded that low density lipoprotein cholesterol biomarker for CHD risk has led to traditional guidelines of CHD dietary recommendations.

PL-83

The Breast Cancer- A Deadly Complain In Females

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ABSTRACT

Breast cancer is the second leading cause of cancer deaths among women. The development of breast cancer is a multi-step process involving multiple cell types, and its prevention remains challenging in the world. Early diagnosis of breast cancer is one of the best approaches to prevent this disease. In some developed countries, the 5-year relative survival rate of breast cancer patients is above 80% due to early prevention. In the recent decade, great progress has been made in the understanding of breast cancer as well as in the development of preventative methods. The pathogenesis and tumor drug-resistant mechanisms are revealed by discovering breast cancer stem cells, and many genes are found related to breast cancer. Currently, people have more drug options for the chemoprevention of breast cancer, while biological prevention has been recently developed to improve patients' quality of life. Globally, breast cancer is the most common cancer among women, and the most likely cause of female cancer deaths. High income countries have made the most progress in improving breast cancer outcome. Between 1990 and 2014, breast cancer death dropped by 34% in the US attributable to the combination

of improved earlier detection and effective adjuvant therapies.

Breast cancer is an increasingly urgent problem in low and middle income countries, where historically low incidence rates have been rising by up to 5% per year. Breast Health Global Initiative created and validated Resource Stratified Guidelines(RSGs) as a comprehensive tool set whereby health care system can be evaluated for their capacity to deliver breast cancer care with existing resources

BIOTECHNOLOGY ABSTRACTS

PB-01

Metal bioremediation by *E.coli* and *Enterobacteriaceae* Biofilmand their growth comparison

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ABSTRACT

Industrialization plays a major role in strengthening the economy of any country. However the fact remains the same that the industries directly or indirectly effect the environment. Most commonly the Industrial water has been reported with certain heavy metals such as Chromium, Lead, Cobalt and others which are hazard to the water bodies as well as natural aquatic ecosystem. Biofilm is an applied method in fields of bioremediation for reliving out this emerging problem. Biofilm of microorganisms isolated from petroleum soil sample consisting of mix culture of *Enterobacteriaceae*and laboratory grown *E.coli* were formed in Microtitre plate under *In vitro* conditions. The biofilm of these microorganisms were incubated with the Industrial waste water collected from Pharma Industry consisting of heavy metals. After the incubation of varying period, the microorganisms were able to reduce the amount of heavy metals present in the samples which was confirmed spectrophotometrically. The growth of both the biofilms was compared to detect the best degradation results.

PB-02

Recent Advancement In Monoclonal Antibodies For Cancer Treatment

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ABSTRACT

With the advancement in the genetic engineering techniques there is a development in the treatment of cancer by monoclonal antibodies. Now days, Monoclonal antibodies become the choice of treatment for cancer patients. Monoclonal antibodies are highly specific in nature. They are made to target the specific receptors that resulted in the progression of cancer cells. Monoclonal antibodies target these receptors and allow the immune system to identify them and destroy them. FDA has approved and enlisted various monoclonal antibodies that can be used for the cancer treatment. In recent years from 2015-2017 USFDA has approved various monoclonal antibodies that have therapeutic efficacy and patient safety. In year 2015 the monoclonal antibodies approved by FDA includes Elatuzumab and Daratumumab for multiple myeloma, Nivolumab for metastatic melanoma. In year 2016 Atezolizumab approved by the USFDA for urothelial carcinoma treatment, Olaratumab for soft tissue sarcoma and in year

2017 the approved monoclonal antibodies include Gemtuzumabozogamicin for the treatment of acute myeloid leukaemia, Inotuzumabozogamicin for precursor B-cell acute lymphoblastic leukaemia treatment and Avelumab is recommended formetastatic merkel cell carcinoma. In Recent studies of monoclonal antibodies more focus is being given on their therapeutic efficacy and to decrease their major side effects. Some more new monoclonal antibodies are being developed which are under clinical trial phase.

PB-03

Genomic library preparation and optimization of culture conditions of Protease producing isolates

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ABSTRACT

The study was aim to screen the different bacterial strains isolated from dairy products for protease activity. Several isolates were screened for the protease activity on nutrient agar supplemented with 1% skimmed milk. D2 isolate showed the maximum zone of clearance followed by D2. The various culture conditions has been optimized for D1 and D2 i.e, growth curve, effect of temperature, pH, metal ions, detergents, effect of different carbon and nitrogen sources and solvents. As the D2 strain showed the maximum protease activity, so the D2 isolate was selected to prepare the genomic library in pUC18 vector to screen the protease positive clone having protease producing gene. Clones were confirmed by the blue white screening followed by restriction mapping technique and again the plate assay was performed to screen the clone having protease activity. Only one clone was screened which showed the zone of clearance in nutrient agar media supplemented with skimmed milk.This clone can be further sub-cloned in the expression vector to get the recombinant protein for its characterization and industrial application.

PB-04

Microbial Pigments: A journey from Colour to Medicine

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ABSTRACT

Microbial pigments are the organic compounds having their broad application in a multiple work field there are also novel food colorants used in food industries and are potential alternative to traditional heavy metal industrial dying methods and attracting a great attention

towards pharmaceutical physiological drug advancements and its therapeutic applications are under great pharmacogonosy research umbrella. The use of pigments as colouring agents has been practised since prehistoric times. These natural compounds can serve as potential replacements and alternatives to synthetic pigments, which exhibit toxicity to health and potentially induce mutagens and carcinogens. Microbes can also produce the pigments for their survival so they may have some medicinal properties and can be used as medicines. Studies have shown that changes in medium composition or culture conditions results in enhanced pigment productiontoday multiple effective extraction and characterization method has been originated, aimed for selecting media or their components to increase the yield of these compounds. The successful marketing of natural pigments derived from algae (non-conventional sources) both as food colorants and nutritional supplements, reflects the presence and importance of stereotype markets in which consumers are willing to pay a premium price 'natural healthy' ingredients.

PB-05

Potential application of antioxidants from fruit peels in preventive healthcare

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ABSTRACT

Consumption of fruits and vegetables has been known to be effective in the prevention of various chronic diseases like cancer and diabetes. The search for novel drugs and alternative medicine for such diseases has led to increased research in medicinal properties of plant foods. These benefits are often attributed to the presence of various bioactive compounds, especially antioxidant content in them. Fruits are rich source of antioxidant compounds and interestingly when compared with the fruit pulp, the peels have been reported to have greater content of such bioactive compounds. Research shows that citrus peel extracts had the highest antioxidant activity compared with pulp and seeds. In pomegranate, the 60% of the fruit part is covered by its peels are these peels are highly rich in holding various types of ingredients including proanthocyanidin, ellagitannins and flavonoid compounds. Similarly the total phenolic and total flavanoid content in apple fruit is higher in peels as compared to its pulp and seeds. Thus fruit peels can be used not only as an effective but a cheap source of antixidants as in most of the fruits, peels are left unprocessed and included under the category of waste.

In this context, the present study was designed to estimate antioxidant activity of peels of fruits viz. orange, pineapple and pomegranate and to analyze their synergistic effect. Extraction of bioactive compounds was done by using conventional and non-conventional methods and the resulting extract was analyzed for the presence of phytochemicals that plays roles in antioxidant activity such as terpenoids, flavanoids, tannins, saponins and phenols. The

antioxidant test used to check the antioxidant activity of these fruit peel extract included DPPH, hydrogen peroxide scavenging test, total phenolic content and total antioxidant test. The mixture these peel extract in various concentration ratios, shows synergistic effect on antioxidant activity. This enhanced antioxidant activities can help to reduce the generation of free radicals and can act as an antiproliferative agent, depicting its promising application as food supplement and nutraceuticals.

PB-06

Development of biopolymer nanocomposites in drug delivery and medicine

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ABSTRACT

Constant use and dependence on non-renewable feedstock, such as crude oil has raised economic and environmental concerns leading to the bio-based polymer composite industry offering the possibility of using natural resources and the fact of being environmentally friendly. Biopolymers have been excellent material candidates to be used in medical field with a wide range of applications, having characteristics such as biocompatibility, biodegradation and non-cytotoxicity. Biopolymers and nanocomposites have established themselves as a promising class of hybrid materials derived from natural and synthetic biodegradable polymers. With lot of improvements done in bio polymer nanocomposites as a combination of a polymeric matrix and, an inorganic nanomaterial has created interest in the scientific and industrial research in the recent years. Developing and improving nanostructured drug delivery systems allows the novel platforms for the efficient transport and controlled release of drug molecules in the diseased tissues of living systems, thus offering a wide range of functional nanoplatforms for smart application in biotechnology and nanomedicine.

PB-07

"In-silico evaluation, analysis and screening of a potent polyphenolic herbal drug molecule and its validation as a candidate drug inhibiting p100/RELB domain of NF-kB alternate pathway through molecular docking studies."

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ABSTRACT

Upregulation of various flagging pathways is required for the uncontrolled tumor cell expansion. Mitogen enacted protein and NF-kB pathways have been watched for

demonstrating exceptionally critical impacts by the oxidants. Cell expansion is advanced by the outflow of NF-kB and its restraint squares cell multiplication.A large portion of the herbs utilized as hostile to carcinogenic medications are anticipated to restrain the traditional pathway of the NF-kB for example p65/RELA space. Each one of those herbs have different reactions that might be destructive for future perspectives. Much after restraint of the old style pathway, cell multiplication can go on through the elective pathway. Be that as it may, Silymarin represses the elective pathway of NF-kB by authoritative to p100/RELB space which stifles the kinase compound that phosphorylates the I-kB. The dynamic I-kB hinders the traditional pathway by authoritative to the p65/RELA space and stops its translocation to core further anticipating the DNA translation, which thusly at long last stops cell multiplication.

PB-08

A Temperature Regulated Smart Sterile Transport System

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ABSTRACT

The present invention relates to a system for transport of materials under sterile conditions. In particular it relates to preserving and live monitoring of thermo labile (heat susceptible) specimen from bacterial degradation while transport. Temperature controller and UV filament is used to maintain the sterile condition inside the transport system.

PB-09

Immobilization of alpha amylase using dual matrix entrapment: Method for commercial usability

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ABSTRACT

Industrial development of the enzyme reactors requires the use of immobilized enzyme in order to reduce the cost of the biocatalyst. To a large extent this method prevents enzyme losses and at the same time maintains activity of biocatalyst at a high concentration. α-amylase has been immobilized on different carrier matrix by different methods like entrapment, physical adsorption, covalent binding and ionic binding. In the present study the alpha amylase enzyme is immobilized in dual matrix (matrix constituting carageenan and sodium alginate) and after characterization of dual matrix immobilized beads, the effect of pH and temperature

on efficiency of enzyme immobilization was evaluated by comparing the retained catalytic activity of the immobilized enzyme on dual matrix with that of the free enzyme. Method described for immobilization using sodium alginate: i-carrageenan dual matrix entrapment leads to high stability of α-amylase at low pH. Stability of α-amylase at low pH after immobilization was found to be consistent at 28℃, 37°C and 0°C.Conclusion-The method developed in the present study has been found to be reliable as the enzyme is retained within the matrix and provides stability at high temperature and low pH.

PB-10

Improvement in the quality of wine produced from Mexican Grapes by varying yeast concentration

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ABSTRACT

In the present study, red wine production using baker's yeast was monitored at 0.2g/L and 0.5g/L initial inoculum concentration. It was observed that increasing inoculum concentration results in better growth of yeast. After 15 days, fermented products were filtered using 11µm cutoff filter paper. Analysis was done using ATR for determination of composition and spectrophotometric method for estimation of ethanol concentration. It was found that increasing concentration of inoculum effects the ethanol concentration and the composition of wine. Sensory evaluation of wine samples done on 25 people as subjects showed that 0.2g/L yeast inoculums concentration is better for wine production and best suited for human consumption using Mexican grapes.

PB-11

Over-expression of circulating micro RNA in plasma samples of breast cancer patients

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ABSTRACT

Breast cancer is the second most common malignant disease affecting Indian women and is the leading cause of cancer-related mortality. MicroRNAs (miRNAs) are remarkably stable in blood, which makes them novel and promising biomarkers for cancer detection and diagnosis. In this study, expression levels of circulating specific miRNAs, such as microRNA-21 (miR-21) and microRNA-146a (miR-146a) could be used as potential biomarkers in plasma of breast cancer patients and healthy individuals. The expression levels of breast cancer

associated specific miRNAs — miR-21 and miR-146a in plasma samples of histopathologically reported 14 patients with breast cancer and an controls was compared. The miRNA expression level was determined by TaqMan PCR assay. The miRNA expression level of each sample was normalized to that of miR-16 as reference and expressed as relative expression ($2^{-\Delta Ct}$). The results showed that the circulating level of miR-21 and miR-146a were significantly higher in plasma samples of breast cancer patients, when compared to those of healthy controls ($p<0.0004$ and $p<0.005$, respectively). Thus, analyzing expression of miR-21 and miR-146a from plasma samples of breast cancer patients might be useful in the diagnosis of breast cancer. However, further studies with larger cohort of patients and controls are needed to confirm the results.

PB-12

Microwave assisted enzymatic hydrolysis of kitchen waste for Bioethanol production

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ABSTRACT

Depletion of fossil fuels necessitates the need of alternative fuel which can combat the exhaustive nature of fuel. Bioethanol, a biological fuel, has the added advantage of being having high octane number and producing lesser pollution. Lignocellulosic biomass can be utilized as organic material for the production of bioethanol. Ethanol production from cheaper organic sources will be a solution to make it viable as a gasoline additive. Kitchen waste is routinely produced in great amounts by houses, canteens and restaurants. It contains noticeable amount of sugars which can be converted into ethanol. In the present study, kitchen waste was utilized as raw material at high dry material consistency. The waste was first treated with microwave radiation at 90ºC for 30 minutes and then subjected to enzymatic treatment with amylase from *Bacillus licheniformis* MTCC 1483 to convert starch into glucose. The liquefaction step was optimized using desirability approach based on response surface modeling. Three factors viz. pH, concentration of dry substrate and amylase concentration were optimized. Multi-objective optimization was carried out by using reducing sugar and ethanol yield as response. 65% ethanol was obtained under standardized condition of 7.5 pH, 40% dry material and 15 IU/g of amylase. The process developed in the present study lead to 510.28 g/L yield of ethanol with no acid/alkali hydrolysis of material.

PB-13

Polymorphism of LDL gene in Individuals associated with Cardio Vascular Disease

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ABSTRACT

Cardiovascular disease is very common cancer worldwide. Low density lipoprotein (LDL) is one of the most important factor which play an important role in cardiovascular disease. The aim of this study was to evaluate frequency distribution of LDL gene SNPs in CVD patients to find out any association with risk of disease. Present study was carried out on blood samples collected from CVD suspected patients to study risk of disease. The AA (wild type) and AB heterozygote genotype frequency was lower in cardio vascular cases. In case of Familial Hypercholesterolemia (FH) percentage frequency was higher in heterozygous groups. Percentage frequency of wild type (AA) group was found lower. Allele frequency of B allele was found more prevalent in patients affected with cardio vascular disease. Higher values of total cholesterol, serum triglycerides, HDL, LDL, VLDL showed association with higher prevalence of CVD risk factors. Present results suggest the difference of genotype distribution of LDL polymorphism between cardiovascular patients; hence establish the association with risk of disease. Further validation studies are required on additional LDL SNPs to study the CVD risk using larger cohort.

PB-14

Global Burden of Breast Cancer

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ABSTRACT

Breast cancer in women is a major public health problem throughout the world. It is the most common cancer among women both in developed and developing countries. One in ten of all new cancers diagnosed worldwide each year is a cancer of the female breast. It is also the principal cause of death from cancer among women globally. More than 1.1 million cases are diagnosed and more than 410,000 patients die of it worldwide. Breast cancer is the second most common cancer now, after lung cancer, when ranked by cancer occurrence in both sexes. Around 55% of the global burden is currently experienced in developed countries, but incidence rates are rapidly rising in developing countries. The present review focuses on patterns of disease in terms of incidence and mortality and their geographical and temporal variations in different regions of the world. It is also discuss briefly the sources and methods of estimation, validity and completeness of available data, and possible explanations for the observed patterns of incidence and mortality.

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