G. PULLA REDDY COLLEGE OF PHARMACY

Mehdipatnam, Hyderabad

Affiliated to Osmania University; Approved by PCI, AICTE; Accredited by NAAC;

Phone: 8297511177; E-mail : gprcphyd@gmail.com; Website : www.gprcp.ac.in;

ABSTRACTS

One Day Seminar on

"INNOVATIONS IN PHARMACEUTICAL RESEARCH-2022

ORAL & POSTER PRESENTATIONS"

24th December 2022

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VISION

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

MISSION

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

COURSES OFFERED

B. Pharm

M. Pharm - Pharmaceutical Chemistry
Pharmaceutics
Pharmacology
Pharmaceutical Analysis
Pharmaceutical Regulatory Affairs

Pharm. D

EAMCET CODE: GPRP

PGECET CODE: GPRP1

One Day Seminar on
"INNOVATIONS IN PHARMACEUTICAL RESEARCH-2022
ORAL & POSTER PRESENTATIONS"
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SPEAKERS PROFILE

Dr. Krishna Bhagavatula
Director - Business Development
The Jackson Laboratories, Australia

Dr. Bhagavatula Mani Ragava Sai Krishna also known as Krishna is currently working as Director, Business Development for The Jackson Laboratory - India, Australia and Singapore. He spear heads The Jackson Laboratory vision of expanding its presence by providing required scientific and business development expertise to clients and distributors/partners. He supports scientific community and channel partners by offering integrated solutions towards enhancing scientific needs of research community.

Krishna has over two decades of experience working in the Life Sciences and Healthcare industries, with global experience working in India, Australia and USA. He has worked in senior level roles with multinational organizations such as Agilent Technologies, Taconic Biosciences (as Country Manager – India), Intertek and Global Value Web (GVW) Technologies (as Managing Director-India).

He has significant experience in various domains of life sciences such as Food Testing, Molecular Diagnostics, In-vivo Models and Services, Data Analytics and Personalized Medicine.

Krishna recently completed his MBA in General Management from The University of Adelaide, South Australia. He has Ph.D. from Cleveland State University in the area of Clinical Bio-analytical Chemistry with specialization in Molecular Medicine and a Masters in Microbiology from Osmania University, India.

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SPEAKERS PROFILE

Dr. Wahid Khan
General Manager - NDDS
NATCO Research Centre, Hyderabad

Dr. Wahid Khan did his Master's and Ph.D from National Institute of Pharmaceutical Education and Research (NIPER), Mohali, Punjab, India. He was associated as a Postdoctoral Associate for more than 2 years at Schoo¬l of Pharmacy and Center for Nanoscience and Nanotechnology, The Hebrew University of Jerusalem, Israel.

Thereafter, he worked as an Assistant Professor in the Department of Pharmaceutics, NIPER, Hyderabad. Currently, he is working as General Manager & Head NDDS Department at NATCO Pharma Limited, Hyderabad, India.

He is having experience of working in areas of drug delivery, drug targeting, nanomedicine and biodesign of drug eluting implantable medical devices. He has more than 110 publications in high impact factor journals. He has also filed several patents apart from editing a book Entitled "Focal Controlled Drug Delivery- Advances in Delivery Science and Technology" Springer Publications.

He is the recipient of the Medal for the first position in B. Pharm. and has also received various international awards and fellowships including PBC Fellowships, Valazzi-Pikovsky Fellowship, and Lady Davis Fellowship.

For the last three consecutive years (2019, 2020 & 2021), he is also featured as the World's top 2% scientist in the field of Pharmacology and Pharmacy, by Stanford University, USA.

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SPEAKERS PROFILE

Dr. Ashish Chauhan
MD Internal Medicine
APOLLO Hospital, Secunderabad

Senior consultant - specialist in Diabetes & an Adult Immunization Expert- Apollo hospitals Hyderabad.

Specialized training in Adult Immunization

Fellowship in Diabetes under aegis of Dr Nihal Thomas from CMC Vellore

Has been an active speaker in various media platforms –

- **Health Talk on National Hindi Channel Shubsandesh where he has interviewed Padma Awardee Dr D Nageshwar Reddy , Dr Sunil Chandy Director CMC Vellore , Padmashree Dr Omesh Bharti.**
- **How to avoid Law Suits & Stress Management for Doctors have made him popular Globally**

Actively Engaged in teaching students from medical fraternity , his blessed lectures have been well liked by medical students world wide as well as nursing graduates.

Dr Ashish Chauhan is an avid reader and a socialite where along with Olympian Saina Nehwal & Gagan Narang he has Speer headed vaccination camps among orphans along with countless food distribution camps .

His organization Nathan's Learning Forum works in the field of academics where through collaboration medical, nursing and other educational institutions have been enormously benefitted

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G. PULLA REDDY COLLEGE OF PHARMACY, HYDERABAD

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24th December 2022

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ORAL PRESENTATIONS

OP-PCU-001

NOVEL INVENTIONS AND THEIR DEVELOPMENTS FOR A BETTER WORLD

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Technological advances are widely spread out in every sector and its main vision is to make life of individual smooth and smart. It has invaded pharmaPCUtical sector for years to innovate and develop formulations. The primary objective of this study is to describe new inventions in medical field using advanced computer technology and helps in research and treatment to patients. The abstract focuses on certain innovations as Bionic eye, Nanobots and 3D-BioPrinting. Bionic eye uses Microchip Technology, Nanobots uses Nanotechnology and Bioprinting uses 3D printing technology.The Implementation of the mentioned innovations with Artificial Intelligence would make a breakthrough in future and have better impact on large scale of patients. The Goal of this study is to develop research processes in more efficient way and helps in drug development. This study also aims at Diagnoses, Prevention and to Eradicate diseases as quick and precise as possible and to help patients to get the treatment in an advanced way. The use of Artificial Intelligence in medicine would be a Futuristic technology and the treatment based on A.I technology would have good patient compliance.

Keywords*:* Bionic eye, Nanobots, 3D-Bioprinting, Futuristic technology

OP-PCU-002

DESIGN OF LOPINAVIR LOADED NANOSTRUCTURED LIPID CARRIERS (NLCs) AND OPTIMIZATION OF FORMULATION USING DoE.

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The objective of the present work is to design and optimize Lopinavir nanostructured lipid carriers by employing response surface methodology via Design expert software. Nanostructured lipid carriers were formulated by melt-emulsification ultrasonication technique. This nanocarriers help overcome oral administration associated limitation and promote administration of single drug. The 3-factor 3-level Box-behnken design was selected for optimization wherein the independent variables include lipid concentration, surfactant and sonication time while dependent variables include entrapment efficiency and percent drug release. Optimized formulation contains stearic acid, myristic acid and Captex 350 as lipid constituent and Tween 80 and Span 80 as emulsifiers. FTIR studies indicated good compatibility of the excipients used. The particle size, zeta potential, PDI, entrapment efficiency and %drug loading for optimized formulation were 273 nm, -42.03mV, 0.42, 83.86 ± 0.15% and 12.052 ± 0.12% respectively. The *in-vitro* drug release profile showed initial burst release which is attributed to higher liquid lipid part with 96.23 ± 0.08 % drug release at the end of 6hrs while plain lopinavir suspension gave only 30.83 ± 0.17 % drug release at the end of 6hrs. The reduced particle size contributes to the enhanced dissolution profile due to larger surface area. The release data fitted into kinetic models implied optimized formulation follows Higuchi model kinetics with fickian diffusion as the drug transport mechanism. Optical microscopy displayed particles which are homogenously distributed. Stability studies conducted over a period of one month did not show any characteristic variations when formulation was stored at 4 ± 2^{o}C.

Keywords: Lopinavir, Nanostructured lipid carriers, Box-behnken design, Design expert® software, Melt-emulsification ultrasonication.

OP-PCU-003

QBD APPROACH FOR NANOSPONGES HERBAL GEL OF DUTASTERIDE.

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QbD approach for dutasteride loaded nanosponges was implemented in order to get quality end product. Nanosponges in gel enhance skin retention. Dutasteride is a 5–azasteroid derivative (class II drug), used in the treatment of Benign Prostate Hyperplasia and also Androgenic alopecia (off label use). The main purpose of research is to formulate Dutasteride nanosponge gel incorporated with onion extract / garlic extract for androgenic alopecia. Dutasteride nanosponges were prepared using emulsion solvent diffusion technique using ethyl cellulose and PVA by Box-Behnken design. Drug excipient compatibility studies with FTIR, DSC, and XRD concluded that the drug and excipients are compatible with each other. The formulations according to the design were prepared and based on physico-chemical properties they were optimized. Optimized dutasteride nanosponges formulation (PNS) was formulated into gel formulation with 10% onion and 10% garlic extract and evaluated for physico-chemical properties. The optimised gel formulation (G5) showed viscosity of $4.1487x10^5$cps & ex-vivo drug release of 95.45±0.32% after 4hrs, follows first order kinetics & anomalous release mechanism. The gel formulations were compared with marketed minoxidil solution 5% (Tinfal-5) for hair growth studies for one month using rat animal model. Optimized G5 (Dutasteride nanosponge with 10% garlic gel) formulation hair length after one month was 2.6±0.42cm when compared with Tinfal-5, 1.6±0.43cm. In present study Dutasteride nanosponge herbal gel containing 0.5mg of Dutasteride equivalent was prepared which can be recommended for treatment for Androgenic alopecia.

Keywords: Dutasteride, Nanosponges, Androgenic alopecia, Box-behnken design, Rat animal model, Hairgrowth studies.

OP-PCU-004

DESIGN OF EXPERIMENT: A REVIEW

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The DOE methodology is an effective tool for upgrading the level of measurement and assessment. In any design, planning or control problem the designer is faced with many alternatives. He/she is challenged to develop design approaches that can meet both quality and cost criteria. The way experiments are designed greatly affects the effective use of the experimental resources and the easiness with which the measured results can be analysed. It does not present new evidence based on designed experiments. Its objective is solely to show how useful application of multi-factor experiments is in a variety of circumstances and decision making scenarios. The physical experiment has been carried out to improve the quality of a special type of batteries. The simulation experiment has been carried out to investigate the impact of several flexibility factors in a flexible manufacturing system. The numerical value of a complex analytical expression representing a customer oriented logistics performance measure has been calculated for different values of its parameters, i.e. the given numerical values of the investigated factors. It enabled a methodical examination of all factor effects and especially their interactions, thus shedding light on complex aspects of the logistics decision problem. In these examples, cases from different contexts were presented, enabling to view design of experiments as a powerful ingredient for improving decision making in a variety of circumstances.

OP-PCU-005

NANOTECHNOLOGY: A REVIEW

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

OP-PCU-006

INNOVATIVE TECHNOLOGIES FOR GASTRO- RETENTIVE DRUG DELIVERY SYSTEM

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Gastro-retentive drug delivery is most likely utilized by many pharmaPCUtical industries in view of its commercial success. Drugs that are primarily absorbed in the stomach, short half-life and poorly soluble at alkaline pH are the most suitable candidate for the development of gastro-retentive drug delivery systems. Traditional approaches have been followed to encourage gastric retention of an oral dosage form. However, over the past decades the pursuit and exploration of devices designed to be retained in the upper part of the gastrointestinal (GI) tract has advanced consistently in terms of technology and diversity. A number of major drug companies have focused efforts on the design of gastric retention technologies such as Oleotec, Soctec, Accordion Pill, GRID, Multiple Polymers Hydrophilic Matrix, Acuform, GIPET, GIRES, Micropump and Gastrodose. This highlights the recent commercially available gastro-retentive technologies in the field of GRDDS.

OP-PCU-007

BIO ELECTRONICS MEDICINES AN INNOVATION

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Every organ in the human body is innervated by the nervous system and communicates with the brain via electrical signals. Various devices can be used to modulate these electrical signals and elicit changes in organ function with the aim of treating injury or disease. This approach is the basis of the rapidly emerging field of bioelectronic medicine, which has the potential to diagnose and treat medical conditions more precisely and effectively than ever before, these devices are a potential alterative therapeutic approach for rheumatoid arthritis and inflammatory bowel disease, epilepsy, asthma, hypertension etc.

In arthritis which treatment has become a huge challenge, bio electronic medicines have come as a better solution. Signals from bio electronic device pass through the efferent vagus nerve and are relayed directly to the intestine, and across the celiac ganglion, traversing the splenic nerve to terminate in the spleen , Neurotransmitter release in the end organs results in reduced activation of resident immune cells, as well as reduced production of inflammatory mediators and activation of circulating immune cells , These effects should result in attenuation of inflammation with improvement in signs and symptoms, and reduction in joint and intestinal mucosal damage. Bioelectronic is growing field, where major advancement in treatment and diagnosis are being achieved. Therapies based on neural stimulation and applicant of electric field are currently used to improve patient quality. However, these therapies still require a multidisciplinary approach to produce less invasive technique

Keywords: bio-electronic medicines, vegus nerve, electric signals, arthritis, inflammation

OP-PCU-008

ZIP DOSE 3DP TECHNOLOGY

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3D printing is an emerging field that can be found in medicine, electronics, aviation and other fields. With its personalized and highly customized characteristics, it has great potential in the pharmaPCUtical industry.

This technology has the following applications in medicine , firstly it can print pills on demand according to the individual condition of the patient making the dosage more suitable for each patient's own physical condition , secondly it can print tablets with specific shape and structure to control the release rate , thirdly it can precisely control the distribution of cells, extracellular matrix and biomaterials to build organs or organ on a chip for drug testing , finally it could print loose porous pills to reduce swallowing difficulties.

OP-PCU-009

FORMULATION AND EVALUATION OF FLUCONAZOLE OINTMENT

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The key focus of this research study was to develop a fluconazole ointment using polyethylene glycol (water soluble) ointment base. Five formulations where each contains 0.5%w/w of fluconazole and 25%w/w of PEG 4000 with varying concentrations of PEG 400 were formulated by the method of fusion. The prepared fluconazole ointments were examined visually, pH, Viscidus, Drug content, In-vitro drug release and Antifungal potency where dermatophyte fungi strain was used. Upon evaluation the formulation F5 showed highest % of drug content and antifungal activity and satisfactory results in all assessment parameters and best expressed by Higuchi model indicating that optimum concentration of PEG 4000 and PEG 400 form a potent ointment base for azole antifungals. Through this research study we intend to show PEG ointment base as a safe, efficacious ointment base for Fluconazole and similar azole antifungals that can prove to be effective against fungal dermatological infections.

Keywords: Fluconazole, Polyethylene glycol, Dermatophyte fungi, Antifungal activity

OP-PCU-010

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING-A NEW BREAK THROUGH IN DRUG DISCOVERY

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Artificial Intelligence (AI) is the broadest term applied to any technique that enables computers to mimic human intelligence using logic, if then rules, decision trees.Whereas machine learning includes statistical techniques that enables machines to improve tasks with experience. Various applications of AI in pharmaPCUtical field includes research and development, drug discovery, drug design, drug adherence, clinical trials and diagnosis etc. Drug discovery has always been more of a guessing game a game of trial-and-error often scientists can only guess the mechanism that's causing an illness from initial molecule discovery to bringing a new drug to market it takes at least 10 yrs to complete the process with high cost. There is a huge need to speed up the process where AI has come into play. AI can be implemented in almost every aspect of pharmaPCUtical industry, right from the drug discovery and development to manufacturing and marketing and also in diagnosis purpose. These are designed to deliver better outcomes as they continually learn from new data and experience, they can be a powerful tool in research and development. AI have many advantages including reduced cost and development time which promise to bring new therapeutics to market in a more responsive manner. Industries can be revolutionized by utilizing the power of AI in drug discovery, development and diagnosis.

Keywords: Artificial intelligence, machine learning, diagnosis, therapeutics, clinical trials

OP- PAQA 001

"NATURE TO NEW": SPONDIAS PINNATA LEAVES GREEN ENGINEERED SILVER NANOPARTICLES AS POTENTIAL ANTICANCER AGENTS & ANALYTICAL FINGERPRINTING STUDIES – AN ECOFRIENDLY APPROACH FOR NATURAL PRODUCTS DRUG DISCOVERY

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WHO estimates that 80% of the world populations currently use herbal drugs for major health care. Fingerprinting is a process that determines the concentrations of a set of characteristic chemical substances in an herb. Knowing the relative concentrations is a means of assuring the quality of herbal preparations. It can serve as a tool for identification, authentication and quality control of herbal drugs. Nanotechnology has changed the outlook of researchers towards science and technology. The enhanced surface area of the particles due to their nano size is contributing to the wide range of applications are used. No reports on synthesis of silver nanoparticles and isolation. Biosynthesis of silver nanoparticles was done by hot plate method and synthesized silver nanoparticles are characterized by SEM, TEM, XRD, Nanoparticle analyzer, FTIR and UV (Size and morphology, crystalline nature & size , zeta potential & charge, Functional groups and confirmation of synthesis of silver nanoparticles) respectively. Extraction by soxhelt apparatus and column chromatography for isolation of compounds. GC-MS analysis of extracts. Structure elucidation was confirmed by IR, NMR ,MASS spectra's. Anticancer activity was performed on MCF7 cells by In-vitro (MTT Assay). -sitosterol was isolated from n-hexane fraction and GC-MS analysis shows the new components present in spondias pinnata. Preliminary confirmation from UV-Visible peak around 424 nm , SEM(50 nm), TEM(Spherical), XRD(22.5nm), zeta potential(-21.2mV & -ve charge) and FTIR C-H,O-H,C=C stretching and bending of alkane, alkene and aromatic groups of lipids proteins, etc. Anticancer activity IC50 value was 58.410.864 more than standard drug (IC50 is 6.360.317 **)**An eco-friendly, rapid & convenient method was reported for synthesis of silver nanoparticles. -sitosterol was isolated .Anticancer activity was more than the standard anticancer drug.

Key words: Spondias pinnata, Silver nanoparticles, -sitosterol, Column chromatography, GC-MS, SEM, Anticancer, etc.

OP -PAQA 002

A REVIEW ON ANALYTICAL TECHNIQUES FOR STEROID ESTROGENS IN WATER SAMPLE

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In recent years the influence of various compounds and hormones like estrogens that exert an adverse impact on the endocrine system has been posing a growing concern. The overall estrogenic activity is often due to the presence of a mixture of chemicals and their degraded products which can induce synergistic effects. Estrogens alter hormone levels and the homeostasis system of living organisms, they increase the risk of cardiovascular diseases, prostate cancer and breast cancer in humans and they may induce reproductive disorders, fetal malformations and feminization of males. Estrogens have been shown to be present in the water sample, mainly due to the inefficient removal in wastewater treatment plants (WWTP). The concentrations of these compounds, although very low, are sufficient to induce estrogenic responses and alter the normal reproduction. The compounds have been determined, by a variety of analytical procedures, in the influents and effluents of WWTP, fresh waters, rivers, and even drinking waters. Determination of natural and synthetic Estrogens in natural water is, however, a difficult analytical task, because of the very low detection limits required and the complexity of the matrix. Here, we review on analytical techniques for steroid estrogens in water samples.

Key words: Analytical techniques, Estrogens, Fetal malformations, Feminization.

OP- PAQA 003

ANALYTICAL TECHNOLOGIES FOR IMPURITY PROFILING IN PHARMACEUTICAL DEVELOPMENT

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Pharmaceutical impurities are unwanted chemicals that remain with active pharmaceutical ingredients or drug product formulations. The impurities observed in drug substances may arise during synthesis, or may be derived from sources such as starting materials, intermediates, reagents, solvents, catalysts, and reaction by-products. An impurity profile is a description of the identified and unidentified impurities present in a drug substance. Impurity profiling processes usually begin with the detection of impurities, followed by their isolation and characterization. For all three types of impurities, it is critical to develop a robust method during process development that can eventually be validated and transferred for use in QA/QC. Developing reliable methods for impurities regulated at very low levels, such as genotoxic impurities, adds further challenges to this process. To better detect, identify, quantify, and characterize the impurities present in drug substances and products, pharmaceutical scientists rely on robust analytical tools with high sensitivity and specificity. Major analytical tools for impurity analysis include spectroscopy, chromatography, mass spectrometry, and various combinations of these, that is, tandem techniques. The appropriate technique is selected based on the nature of the impurity and the level of information required from the analysis. There are various complex analytical problems in pharmaceutical development that require the use of more than one analytical technique for their solution. Analytical techniques such as LC/UV, LC/MS, GC/MS, CE/MS, and LC/UV provide the orthogonal detection and complementary information that can address these challenges in a time-efficient manner. As a result, they play a vital role in impurity profiling of pharmaceuticals from identification to the final structure elucidation of unknown impurities.

Key words: Analytical techniques; Titrimetric; Chromatography; Spectroscopy; Electrochemical methods.

OP- PAQA 004

A REVIEW ON GAS CHROMATOGRAPHY

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Gas chromatography is a term used to describe the group of analytical separation techniques used to analyze volatile substances in the gas phase. In gas chromatography, the components of a sample are dissolved in a solvent and vaporized in order to separate the analytes by distributing the sample between two phases: a stationary phase and a mobile phase. The mobile phase is a chemically inert gas that serves to carry the molecules of the analyte through the heated column. Gas chromatography is one of the sole forms of chromatography that does not utilize the mobile phase for interacting with the analyte. The stationary phase is either a solid adsorbent, termed gas-solid chromatography (GSC), or a liquid on an inert support, termed gas-liquid chromatography (GLC). Gas chromatography is an instrumental technique used forensically in drug analysis, arson, toxicology analyses of other organic compounds.

OP- PAQA 005

PLANT-DERIVED NATURAL PRODUCTS FOR DRUG DISCOVERY: CURRENT APPROACHES AND PROSPECTS

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Nature is a rich source of medicines that need to be identified and purified for use as vital biologics in contemporary medicine, either singly or in combination. Small biomolecules, biologics produced by plants, and a recently added third group of medications called phytopharmaceutical medications make up this class of medications. The ethnopharmacological approach, which is based on the traditional medical system, is the foundation for the development of phytopharmaceutical drugs. The idea of "one disease, one target drug" is losing favor, and the usage of plant fractions, extracts, and molecules is the new paradigm that offers hope for developing effective medications. This led to the development of a novel idea known as polypharmacology, which describes the ability of natural products to interact with a variety of human physiological targets. This article addresses the advancements in systems biology and computational methods for discovering pharmacological targets, as well as different methodologies for developing phytopharmaceutical drugs. We look at the already employed medication delivery methods in order to make it easier for pharmaceuticals to be delivered to the targets effectively. We also go through various analytical methods for identifying and fingerprinting plant materials. Finally, we emphasize the importance of biopharming in the creation of biologics derived from plants.

Keywords: Natural products, Phytopharmaceutical drugs, Ethnopharmacology, Bioavailability, Biopharming, fingerprinting.

OP- PAQA 006

ANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR SIMULTANEOUS ESTIMATION OF CARBIDOPA AND OLANZAPINE IN PHARMACEUTICAL DOSAGE FORMS BY RP-HPLC

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High performance liquid chromatography is at present one of the most sophisticated tool of the analysis. The estimation of Carbidopa and Olanzapine was done by RP-HPLC. The Phosphate buffer was p^H 4.5 and the mobile phase was optimized with consists of Phosphate buffer:Methanol P^H 4.5 (20:80 v/v). Kromosil C_{18} Column (250mm x 4.6mm)5µg or equivalent chemically bonded to porous silica particles was used as stationary phase. The detection was carried out using UV detector at 254nm. The solutions were chromatographed at a constant flow rate of 1ml min^{-1}. The linearity range of Carbidopa and Olanzapine were found to be from 100-500 µg/ml of Carbidopa and 1-5µg/ml of Olanzapine . Linear regression coefficient was not more than 0.999.The values of % RSD are less than 2% indicating accuracy and precision of the method. The percentage recovery varies from 98-102% of Carbidopa and Olanzapine. LOD and LOQ were found to be within limit.The results obtained on the validation parameters met ICH and USP requirements .it inferred the method found to be simple, accurate, precise and linear. The method was found to be having suitable application in routine laboratory analysis with high degree of accuracy and precision.

OP-PAQA 007

SIMULTANEOUS ESTIMATION OF GEFITINIB AND CAPECITABINE BY UV SPECTROPHOTOMETRIC METHOD

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A UV spectrophotometric method has been developed for the simultaneous determination of Gefitinib and Capecitabine. The spectroscopic method for estimation of Gefitinib and Capecitabine employed simultaneous estimation method using Methanol as solvent. Gefitinib has absorbance maxima 302 nm and Capecitabine has absorbance maxima 333 nm and both these drugs obey Beer's law in concentration range of 2-12 µg/ml for Gifitinib and 2-12 µg/ml for Capecitabine. The recovery studies ascertained the accuracy of the proposed method and the results were validated as per ICH guidelines. The results were found satisfactory and reproducible.

OP-PCH-001

APPLICATIONS OF CADD TOOLS IN RECENTLY APPROVED ANTI TUBERCULAR DRUGS

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In a study the applicability and scope of descriptor based QSAR models to complement virtual screening using molecular docking approach have been applied to identify potential virtual screening hits targeting DNA gyrase A from Mycobacterium tuberculosis. Initially QSAR models were developed against M. fortuitum and M. smegmatis using a series of structurally related fluoroquinolone derivatives as DNA gyrase inhibitors.

To aid the creation of novel antituberculosis compounds, combinatorial library was developed on fluoroquinolone template to derive a data set of 5280 compounds whose activity values have been measured by the above models. Highly active compounds predicted from the models were subjected to molecular docking study to investigate the mechanism of drug binding with the DNA gyrase A protein of M. tuberculosis and the compounds showing similar type of binding patterns with that of the existing drug molecules, like sparfloxacin, were finally reported. It is seen that hydrophobic characteristics of molecular structure together with few hydrogen bond interactions are playing an essential role in antimicrobial activity for the fluoroquinolone derivatives. A representative set of seven compounds with high predicted MIC values were sorted out.

OP-PCH-002

COMPREHENSIVE COMPUTATIONAL TARGET FISHING APPROACH TO IDENTIFY PUTATIVE TARGETS FOR 4-AMINOQUINAZOLINE DERIVATIVES

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Background: 4-aminoquinazoline is one of the important pharmacophores in the field of medicinal chemistry and exhibits a wide spectrum of biological potentials. A study was carried to identify the target protein of 4-aminoquinazoline derivatives using a reverse docking program. PharmMapper, a robust online tool was utilised for identifying the target proteins based on the technique of reverse pharmacophore mapping.

Methods: An open web based server PharmMapper was employed to identify the possible target of the selected compounds through reverse pharmacophore mapping. The results were analyzed and validated through docking with Autodock 4.2 tools using EGFR and phosphoinositide dependent protein kinase 1 as possible targets. The docking studies with Autodock validated the binding behavior of 4-aminoquinazoline compounds within the targets binding pocket.

Results and Discussion: Molecular property prediction study demonstrated the significant selectivity of most active compounds 6a,6b for target prediction. EGFR and 3-phosphoinositide dependent protein kinase 1 were found crucial to be targeted for competing cancer.

Conclusion: From the results, we may conclude that EGFR and PDK1 as possible targets for studied 4-aminoquinazoline derivatives where the retrieved information may be quite useful for rational drug designing.

OP-PCH-003

DYNAMIC COMBINATORIAL SYNTHESIS

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Dynamic combinatorial chemistry makes use of reversible reactions between functionalized Monomeric building blocks to generate a mixture of products (dimers or oligomers) under thermodynamic equilibrium. This system reorganizes upon addition of a target so that species that binds to, and or therefore stabilized by the target, are favorably formed, and are thus amplified.

Since the mid-1990's, dynamic combinatorial chemistry has been successfully applied to the identification/selection of ion receptors, enzyme inhibitors, catalyst, materials, and nucleic acid ligands.

Although it is now established as a powerful tool with broad applications some limitations appeared when working on systems of increasing complexity. We present here the most recent advances in the field of dynamic combinatorial chemistry that have been developed to overcome these limitations and explore new area of application.

OP-PCOL 001

SYNTHETIC EMBRYO

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An embryo that is developed without the involvement of egg and sperm in a lab ex utero is called as synthetic embryo instead stem cell is used, stem cell with distinct developmental capacities can contribute to embryonic and extra-embryonic tissues. Both embryonic and extraembryonic compartments start solely from naive embryonic stem cell. This was achieved by co-aggregating embryonic stem cells with transiently expressing CDX2 or GATA4 to promote priming leads to the development of organ progenitor within complex extraembryonic compartments the findings highlights are the potential of naive pluripotent cells to self organize and functionally reconstitute and model the entire mammalian embryo beyond gastrulation, synthetic embryo self-assembled from embryonic stem cells in an ex utero setup, naive ECS give rise to all embryonic and extra-embryonic compartment in s embryo applications of synthetic embryo-synthetic organs can be developed and can be transplanted who are in need of a transplant, new drugs can be tested on it, as the embryo grows in the lab scientists can observe organ development and what things hamper aur fail the pregnancy by which pregnancies can be prevented from failing and its treatment can be developed.

OP-PCOL 002

ANTISENSE MOLECULES: A REVIEW

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An improved understanding of disease pathogenesis leads to the identification of novel therapeutic targets. Diseases are often connected to the insufficient or excess production of certain "Proteins". If the production of these proteins is disputed many diseases can be treated or cured. This method can dispute protein production. It may be used to design new therapeutics for diseases in whose pathology the production of a specific protein plays a critical role. This tool is used for the Inhibition of gene expression. The principle behind it is that an antisense nucleic acid sequence base pairs with its complementary sense RNA strand and prevents it from being translated into a protein. Ten RNA-targeted drugs including eight single-strand antisense drugs and two double-strand antisense drugs have now been approved for commercial use. These are delivered by multiple routes of administration and focused on both rare and common diseases. In addition to cancer, cardiovascular outcome studies include predominant trials on infectious and non-infectious diseases, such as chronic inflammatory and metabolic conditions. Interest in technology continues to grow.

OP-PCOL 003

EXTRACTION, PHYTOCHEMICAL ANALYSIS AND IN SILICO ANTIDEPRESSANT STUDIES OF AQUEOUS EXTRACT OF LEAVES OF HIBISCUS SABDARIFFA L

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The study aims is to extract Hibiscus sabdariffa L. leaves, evaluate their phytochemical properties, and screen in silico antidepressant effects. It is commonly called roselle and belongs to the family Mallows or Malvaceae. This family has more than 200 genera and more than 4000 species. H. sabdariffa leaves are collected and extracted by using different solvents, viz., petroleum ether, chloroform, ethyl acetate, ethanol and water. Extracts obtained are explored for their characteristic features. Among these extracts, AEHS was selected for further analysis by FTIR, HPLC and GC-MS techniques. Further, four phytoconstituents from H. sabdariffa, viz., beta-pinene, cyanidin, delphinidin, and P-cymene are subjected to in silico antidepressant evaluation by using MAO-A, 2z5y protein. All the extracts obtained are brown to black in color and semisolid in nature. % Yield was highest for AEHS (12.4%). Phytochemical analysis showed the presence of various constituents like alkaloids, glycosides, tannins, flavonoids, anthocyanins, and phytosterols. AEHS FTIR spectrum showed the functional groups, viz., 1111 cm-1 and 1053 cm-1 corresponding to anthocyanins. HPLC analysis of AEHS also revealed the delphinidin and cyaniding-related peaks with a retention time of 22.81 min and 24.97 min, respectively. GC-MS analysis of AEHS showed the presence of different phytoconstituents. Docking studies reported ligand-protein interactions. Beta pinene and p-cymene have not shown interaction with amino acids of 2z5y protein. Therefore, these molecules are reported with weak dock scores and low EModel energy. Whereas, cyanidin and delphinidin showed interaction with GLN (215), MET (445), and TYR (69) amino acids of MAO-A, 2z5y protein indicating their inhibitory action. Delphinidin with the highest EModel energy shows maximum in silico antidepressant effect by inhibiting MAO-A, 2z5y protein.

OP-PCOL 004 NEW INNOVATIONS IN BREAST CANCER TREATMENT

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Cancer is a disease in which; abnormal cells divide uncontrollably and destroy body tissue. Cancer that forms in the cells of the breasts is known as breast cancer. Breast cancer can occur in women and rarely in men. Breast cancer arises in the lining cells (epithelium) of the ducts (85%) or lobules (15%) in the glandular tissue of the breast. Initially, the cancerous growth is confined to the duct or lobule ("in situ") where it generally causes no symptoms and has minimal potential for spread (metastasis). In this presentation, we will be discussing the major causes of breast cancer, genes that are involved in provoking breast cancer, conventional detection methods and general methods of treatment. Along with that, we will be discussing fewer innovations and new technologies that are developed in treating breast cancer and improving patient surveillance. A few of them may include; 3D mammography, Biozard, MAG seed, Biomarkers, Immunotherapy used, ultrasound systems, Robotic mastectomy, Liquid biopsy, and Diffraction enhanced imaging etc. The chance that a woman will die from breast cancer is about 1 in 39 (about 2.5%). Breast cancer is the second leading cause of cancer death in women (Only lung cancer kills more women each year). According to American Cancer Society, About 287,850 new cases of invasive breast cancer will be diagnosed in women. About 43,250 women will die from breast cancer. The rate of new cases of female breast cancer was 128.3 per 100,000 women per year. The death rate was 19.6 per 100,000 women per year. Breast cancer treatment can be highly effective, achieving survival probabilities of 90% or higher, particularly when the disease is identified early. Systemic therapy (anti-cancer medicines given by mouth or intravenously) to treat and/or reduce the risk of the cancer spreading (metastasis). Anti-cancer medicines include endocrine (hormone) therapy, chemotherapy and in some cases targeted biological therapy (antibodies)... Etc

Keywords : Breast cancer, gene proteins, mammography, mastectomy, biopsy, metastatic, chemotherapy, immunotherapy.

OP-PCOL 005

EMPAGLIFLOZIN A SGLT2 INHIBITOR IN PATIENTS WITH ACUTE HEART FAILURE

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The sodium-glucose cotransporter 2 inhibitor empagliflozin reduces the risk of cardiovascular death or heart failure hospitalization in patients with chronic heart failure, but whether empagliflozin also improves clinical outcomes when initiated in patients who are hospitalized for acute heart failure is unknown. In this double-blind trial (EMPULSE; NCT04157751), 530 patients with a primary diagnosis of acute de novo or decompensated chronic heart failure regardless of left ventricular ejection fraction were randomly assigned to receive empagliflozin 10 mg once daily or placebo. Patients were randomized in-hospital when clinically stable (median time from hospital admission to randomization, 3 days) and were treated for up to 90 days. The primary outcome of the trial was a clinical benefit, defined as a hierarchical composite of death from any cause, the number of heart failure events and time to a first heart failure event, or a 5-point or greater difference in change from baseline in the Kansas City Cardiomyopathy Questionnaire Total Symptom Score at 90 days, as assessed using a win ratio. More patients treated with empagliflozin had a clinical benefit compared with placebo (stratified win ratio, 1.36; 95% confidence interval, 1.09–1.68; P= 0.0054), meeting the primary endpoint. Clinical benefit was observed for both acute de novo and decompensated chronic heart failure and was observed regardless of ejection fraction or the presence or absence of diabetes. Empagliflozin was well tolerated; serious adverse events were reported in 32.3% and 43.6% of the empagliflozin- and placebo respectively. These findings indicate that initiation of empagliflozin in patients hospitalized for acute heart failure is well tolerated and results in significant clinical benefit in the 90 days after starting treatment.

OP-PCOL 006

ANTIBODY BASED DRUG DELIVERY SYSTEM

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Antibody-Drug Conjugates **(ADCs)** are now amongst the fastest growing drug classes in oncology, as they **combine the best features of mAbs and small molecule drugs via a chemical linker**, creating a single moiety that is **highly specific and cytotoxic to cancer cells**. These therapeutic entities are considered the **"homing missiles"** of cancer therapy. After decades of preclinical and clinical studies, a series of ADCs have been widely used for treating specific tumor types in the clinic. This presentation shows the basis of **FDA Approved ADCs** as anticancer therapeutics and **highlights their Applications and Challenges for Clinical applications**. It also describes how Antibody Directed Enzyme Prodrug Therapy **(ADEPT) is used in the treatment of Cancer.** Although there has been extensive research in the area of ADCs over the past few decades, there is still much that can be done to improve efficacy and reduce side effects.

OP-PCOL 007

CELL BASED THERAPY

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Cell therapies offer the promise of treating and altering the course of the disease which cannot be addressed adequately by existing pharmaceuticals. Cell therapies are a diverse group across cell types and therapeutic indications and have been an active area of research for many years but now strongly emerging through translation and towards successful commercial development and patient access. This presents a description of cell-based therapy, the history of cell therapy, strategies of cell therapy like allogeneic, autologous and types of cells used in therapy. As well as a description of the classification of cell therapy based on underlying technologies. The technologies develop over time, new methods are added and sometimes technologies become disruptive for an application, such as cell therapy. Cell therapies used in cancer treatment such as CART-T cell: Engineering patient's immune cell to treat their cancer. Increasing the awareness of technologies in basic science may help to trigger early adoption by translational scientists which could spark the development of new cell therapies.

OP-PCOL 008

PATCH CLAMP TECHNIQUE IN ION CHANNEL RESEARCH

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The patch clamp technique is a laboratory technique in electrophysiology that allows the study of single or multiple ion channels in cells. Ion channels are integral membrane proteins that allow ion current to flow across the cell membrane. They are involved in almost all physiological processes and their malfunction underlines many disease states and human disorders called channelopathies making them important pharmacological targets. Based upon the formation of a high resistance (gigaohm) seal with the membrane of the cell being studied. These "patch clamp" techniques have improved our understanding and are especially useful in the study of excitable cells such as neurons, cardiomyocytes, muscle fibers, and pancreatic beta cells. The technique was developed through a collaboration between *Erwin Neher* and *Bert Sakmann*. Conventional patch-clamp approaches to investigate cellular electrophysiology suffer from low throughput and require considerable experimenter expertise. Automated patch-clamp (APC) approaches are more experimenter independent and offer high throughput, but by design are predominantly limited to assays containing small, homogenous cells. To enable high-throughput APC assays on larger cells such as native cardiomyocytes isolated from mammalian hearts, it employs a fixed-well APC plate format. Over the last few decades, single cell patch-clamp recordings have been further combined with multi-electrode paired recordings, optogenetic approaches, and various other techniques, each allowing for further isolation and study of individual neurons and their behavior in the neural circuit.

OP-PCOL 009

DRUG REPURPOSING

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Drug repurposing (DR) also known as drug repositioning is a process of identifying new therapeutic use for old/existing/available drugs. It is an effective strategy for discovering or developing drug molecules with new pharmacological/therapeutic indications. In recent years, many pharmaceutical companies developed new drugs with the discovery of novel biological targets by applying the drug repositioning strategy in drug discovery and development programs. This strategy is highly efficient, time-saving, low-cost, and has minimum risk of failure. It maximizes the therapeutic value of a drug and consequently increases the success rate. Thus, drug repositioning is an effective alternative approach to the traditional drug discovery process. It is therefore, believed to be an emerging strategy where existing medicines, that have already been tested safe in humans, are redirected based on a valid target molecule to combat particularly, rare, difficult-to-treat diseases and neglected diseases.

OP-PCOL 010

SCINTILLATION PROXIMITY ASSAY

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Scintillation proximity assays (SPAs) have become a powerful tool for **high throughput screening (HTS)** because they can measure the activity and binding of very diverse classes of drug targets. By applying the **basic principles of ligand-receptor binding and enzyme kinetics**, it is possible to build a large variety of miniaturized, high-throughput assays and screen millions of compounds. SPAs are enabled by the **diversity of radiolabel molecules and affinity tags that are commercially available**. These synthetic radiotracers allow for minimal disturbance of the natural binding interactions.

OP-PCOL 011

RECENT DEVELOPMENTS IN MONOCLONAL ANTIBODIES

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Antibodies are immunoglobulins they seek out the antigens and stick to them to eliminate them from the body. Monoclonal antibodies are made from identical B-cells which stimulate the immune system and are used for diagnosis, disease, treatment, and research. Several mABs target the spike proteins of severe acute respiratory syndrome coronavirus 2(SARS-CoV-2).tixagevimab/cilgavimab are the long-acting monoclonal antibody combination used as pre-exposure prophylaxis against Covid-19 in certain immunocompromised adults and pediatrics since 2021. And recent development of Anti HER2 MABs in the treatment of cancer has shown an extended survival rate. The high specificity of mABs will ensure they remain useful tools against effective treatments.
Further understanding of the immune response will also contribute to the research of monoclonal antibodies in the future.

OP-PCOL 012

CAN METFORMIN REDUCE NEED FOR TOTAL JOINT REPLACEMENT IN DIABETES?

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Metformin is an oral hypoglycemic agent belonging to the class biguanides. Its benefits with glucose-lowering are complex and not yet fully understood. At the cellular level, metformin activates AMP kinase. Metformin has been shown to decrease hepatic glucose production. Additionally, Metformin's effects may be partially related to enhanced insulin sensitivity in peripheral tissues. The anti-diabetic effects of metformin are mediated mainly via the activation of adenosine monophosphate (AMP)-activated protein kinase (AMPK), which is an energy-sensing enzyme activated directly by an increase in the AMP/ATP ratio under conditions of metabolic stress. Metformin is the drug of choice in patients with type 2 DM due to its high efficacy, positive or neutral effects on weight. Osteoarthritis is a common co-occurrence with Diabetes Mellitus. The link between OA and T2DM is attributed to common risk factors, including age and obesity. For every 5 unit increase in BMI, the risk of knee osteoarthritis increases by 35%. Obesity often precedes osteoarthritis and contributes to its development. Total joint replacement surgery can be recommended for osteoarthritis patients with functional disability and/or severe pain unresponsive to medical therapy. Although total knee arthroplasty can decrease pain and improve function for many patients, patients who are obese are less likely to have an improvement in symptoms from knee arthroplasty. The occurrence and development of OA are deemed to be associated with the impaired mitochondrial functions of articular chondrocytes. Metformin effectively alleviated cartilage degradation and aging through regulation of the AMPK/mTOR signaling pathways to protect the mitochondrial function of chondrocytes thereby promoting osteoblast production, suggesting that it could be an effective treatment for OA.

Keywords: Metformin; Diabetes Mellitus type 2; Osteoarthritis; AMPK; Obesity; Total Joint Replacement Surgery.

OP-PCOG-001

EVALUATION OF HEAVY METAL PROFILE OF "*DIOSPYROS LANCEIFOLIA*" LEAVES.

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Heavy metals such as Arsenic, Cadmium, and Lead are the most common elements which are responsible for heavy metal toxicity in herbal drugs or preparation. Lead is responsible to cause the toxicity of the liver in high doses and in general concentration can lead to problems associated with kidney damage, low sperm count, miscarriage, anaemia, and neurological damage to name a few. In contrast, Cadmium is associated with toxicity of the respiratory system, hemorrhagic problems, CVS, and Cancer of the breast. When we discuss about Arsenic it is mainly related to arteriosclerosis, skin diseases, and neurotoxicity. Atomic absorption spectrophotometer (AAS) was used to determine the heavy metals in the plant *Diospyros lanceifolia*.

The present work was carried out to screen the heavy metal content of the leaves of *Diospyros lanceifolia.* The plants were collected and heavy metal content was determined according to AOAC Guidelines using digestive methods. The results indicated that the plant is accumulated with a few heavy metals such as Mercury, Arsenic, Cadmium, and Lead. But all the heavy metals are either the below the WHO limits or at the acceptable level.

Keywords: *Diospyros lanceifolia,* heavy metal content, AOAC Guidelines, WHO limits.

OP-PCOG-002

FORMULATION AND EVALUATION OF HAIR CARE POLYHERBAL SHAMPOO

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A Polyherbal shampoo is a cosmetic hair care product meant for washing of hair and scalp. In these present study we formulate five polyherbal shampoo by using Bringraj, Amla, Shikakai, Hibiscus, Neem, Lemon, Betel, Ashwagandha, Flax seeds, Kalanji. The combination of these ingredient of herbal origin had made it possible to secure high effective shampoo. These polyherbal shampoo were evaluated by number of parameters such as physical appearance, pH, washability, dirt dispersion, skin irritation test, Foaming index, nature of hair, antimicrobial activity to ensure its safety and efficacy. Current study focused to formulate and evaluate the polyherbal shampoo by using herbal products.

OP-PCOG-003

NANOPARTICLE

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Herbal nanomedicines (HNMs) are nanosized pharmaceuticals that comprise extracts, concentrated fractions, or biomarker elements of herbal medications. Because of their higher bioavailability and lower toxicities, HNMs have certain advantages. The usual problems with herbal nanoformulations, such as choosing the right kind or class of nanoformulation for an extract or a phytochemical, choosing and refining the preparation technique, and choosing and optimising the physicochemical parameters, are only briefly discussed in the literature. There is still need for a systematic investigation of HNMs, despite the increased interest that academics have exhibited in this area over the past ten years. Recent advancement in various herbal nanomedicines like polymeric herbal nanoparticles, solid lipid nanoparticles, phytosomes, nano-micelles, self-nano emulsifying drug delivery system, nanofibers, liposomes, dendrimers, ethosomes, nanoemulsion, nanosuspension, and carbon nanotube. Different strategies for optimising preparation methods for various HNMs to ensure reproducibility in context with all the physicochemical parameters like particle size, surface area, zeta potential, polydispersity index, entrapment efficiency, drug loading, and drug release, along with the consistent therapeutic index. Almost all active components from plants are less absorbing as because of their hydrophobic behaviour. This character reduces the bio-availability and augmented complete approval and hence frequent administration or improved dosage is essential, and therefore restricts the medical usage of herbal drugs is necessary. As a result, innovative transporters have to deliver the bioactive molecule in sufficient amount throughout treatment and takes it on the way to the particular target, since these necessities are not entirely attained by conservative treatments. They permit elements possessing diverse characteristics to be applied in similar dose and may even alter the physical properties of componentsand behaviour in natural environs for an in effect delivery.

Key words: Herbal medicines, Nanoparticles, Drug delivery, Nano herbal formulations.

OP-PPR-001 CONCEPT OF UNIVERSAL BLOOD CREATION

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Fast dissolving tablets are disintegrating and/or dissolve rapidly in the saliva without the need for water. Some tablets are designed to dissolve in saliva remarkably fast, within a few seconds, and are true fast-dissolving tablets. Fast dissolving tablets are those when put on tongue disintegrate instantaneously releasing the drug which dissolve or disperses in the saliva. The faster the drug goes into solution, quicker the absorption and onset of clinical effect. Fast Dissolving Tablet (FDT) of Salbutamol Sulphate was prepared by direct-compression method by incorporating super disintegrants like crosscarmellose sodium and sodium starch glycolate. The study was performed by incorporating the super disintegrants in 2 % and 4 % concentration for each and 2 % and 2 % in combination of both super disintegrants. Five formulations having super disintegrants at different concentration levels were prepared to assess their efficiency. Different types of evaluation parameters for tablets were performed. Tablets containing super disintegrants in combination showed excellent in vitro dispersion time and drug release as compared to other formulations.
Keywords: Fast dissolving tablets, direct compression, salbutamol sulphate.

OP-PPR-002

COMPLEMENT COMPONENT 3 GLOMERULOPATHY – A RARE COMPLEMENT DRIVEN RENAL DISEASE.

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Complement Component 3 Glomerulopathy is a recently defined entity that encompasses a group of renal diseases, comprising of dense deposit disease (DDD) and C3 glomerulonephritis. It is characterized by complement dysregulation occuring in the fluid phase and in the glomerular environment ,which results in prominent complement C3 accumulation with scanty or absent immunoglobulins within the glomerulus. Apart from dysregulation of the complement alternative complement pathway, disease is driven by acquired factors in most patients namely autoantibodies that target the C3 or C5 convertase. The key histological feature is the presence of isolated C3 deposits with scanty or absent immunoglobulins often masquerading as some of the common glomerulonephritides this is prototype disorder occuring from dysregulated alternative complement pathway with recently identified genetic defects and autoantibodies.It is diagnosed based on clinical presentation, histological patterns in a kidney biopsy and tests of the complement pathways. Accurate treatment is not available, treatment relies on renoprotective measures, occasional immunosuppressive medication and experimental novel complement inhibitors. This paper includes an overview of a rare renal disease C3 Glomerulopathy.

Keywords : C3 glomerulonephritis , autoantibodies, complement pathway, masquerading.

OP-PPR-003

ATT INDUCED HEPATIC DISORDER – A CASE STUDY

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About the importance of lab investigations before starting the att treatment in patients. How to stabilise the liver affected by att treatment. The exact mechanism of antituberculosis drug-induced hepatotoxicity is unknown, but toxic metabolites are suggested to play a crucial role in the development of hepatic disorders. Pyrazinamide_causing hepatotixicity:pyrazinamide is a first line antituberculosis medication, but is used only in combination with other antituberculosis medications such as isoniazid or rifampin. Pyrazinamide is associated with transient and asymptomatic elevations in serum aminotransferase levels and is a well known cause of clinically apparent, acute liver injury that can be severe and even fatal.

OP-PPR-004

ARTIFICIAL INTELLIGENCE FIGHTS CANCER

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The AI is developed to aid screening tests for several kinds of cancer, including breast cancer too. This is based on the computer programs have been used to help doctors interpret mammograms for more then 20 years, but research in this area is quickly evolving. We can utilize the power of AI to improve accuracy, speed and safety of cancer diagnosis. To gain insights into cancer biology that drives disease initiation, progress and relapse. To personalize treatment for the individual patient. To connect data sources to leverage the power of big data in cancer research.

OP-PPR-005

NA-NOSE MEDICAL , NEW DIAGNOSTIC TEST– POWER OF NANOTECHNOLOGY & ARTIFICIAL INTELLIGENCE .

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The performance of this artificially intelligent nano array was clinically assessed on breath samples collected from 1404 subjects having one of 17 different disease conditions:_chronic kidney failure (CKD), idiopathic Parkinson's Disease (IPD), atypical Parkinsonism (PDISM), multiple sclerosis(MS), Crohn's Disease(CD),ulcerative colitis (UC),irritable bowel syndrome (IBS), pulmonary arterial hypertension (PAH), preeclampsia in pregnant women (PET), head and neck cancer (HNC), lung cancer (LC), colorectal cancer(CRC), bladder cancer (BC), kidney cancer (KC), prostate cancer (PC), gastric cancer (GC), and ovarian cancer (OC). Breath samples collected in a controlled manner from 1404 eligible subjects collected between January 2011 and June2014 from 14 departments in nine clinical centers in five different countries (Israel, France, USA, Latvia, and China).

OP-MIC 001

RISK OF ACUTE EPIGLOTTITIS IN PATIENTS WITH PRE EXISTING DIABETES MELLITUS

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Studies have revealed that 3.5% - 26.6% of patients with epiglottitis have comorbid diabetes mellitus. However, whether pre-existing diabetes mellitus is a risk factor for acute epiglottitis remains unclear. The aim was to explore the relationship between pre-existing diabetes mellitus and acute epiglottitis in different age and sex groups. Many studies have demonstrated epiglottitis to occur predominantly in men but not in women, but the the underlying mechanism remains unclear , may be due to lifestyle changes. Physicians should pay attention to the signs and symptoms of acute epiglottitis in diabetes mellitus patient particularly in men aged 35-64years.
Keywords:- Acute epiglottitis, pre-existing diabetes

OP-MIC 002

WHOLE- GENOME SEQUENCING USED TO SCREEN NEW BORNS FOR RARE DISEASES

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New born screening is the practice of testing every new born for some harmful or possible fatal disorder that are not otherwise obvious at birth. New-born screening involves the use of various devices for the screening procedure. Diseases such as phenylketonuria, congenital hypothyroidism, galactosemia, sickle cell disease, cystic fibrosis, tyrosinemia and other such disorders can be screened using new-born screening devices. Whole-genome sequencing reads out the entire DNA code. It is already being used in the NHS to diagnose rare diseases and could be used to screen for mutations that are linked to a wider range of treatable serious diseases that affect babies' growth. Genetic testing is only offered in certain cases, such as if there is a concern that the baby might be at risk of an inherited disorder. A key advantage is the data for entire genome is already being collected. Such a large dataset of genomic and linked health records would also allow scientists to learn more about genetic predictors of health and diseases and potentially help develop new treatment. Whole- genome sequencing can be less efficient at predicting some conditions than biochemical tests. This means that WGS would need to be combined with the existing screening process, rather than replacing it. There are also some conditions that are not currently screened for, such as spinal muscular atrophy, which may be detected more readily using a targeted gene test, optimised to pick up certain mutations.

OP-MIC 003

OSTEOARTHRITIS: NEW TREATMENT TARGET DISCOVERED THAT HALTS OSTEOARTHRITIS

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Osteoarthritis is currently a major public health problem and the impact of the ageing baby boomers will further increase the burden to society. We anticipate, that with the current major research initiatives driving a better understanding of the course of symptomatic and structural change in the disease, that new treatments to retard the progress of osteoarthritis will be developed in the medium term. At present clinicians should manage patients with osteoarthritis with a combination of methods. And in mouse study researchers used nanotechnology and previous knowledge of protein pathway to significantly reduce new cartilage degeneration and pain.There is a great unmet medical need for a disease modifying osteoarthritis drugs . Hope research could lead to a novel drug that improve the well being of Osteoarthritis patients.

Keywords : osteoarthritis , symptomatic and structural change, nanotechnology.

OP-MIC 004

THE MUCOSAL IMMUNE SYSTEM AND IgG NEPHROPATHY

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The precise pathogenesis of immunoglobulin A nephropathy (IgAN) is still not clearly established but emerging evidence confirms apivotal role for mucosal immunity. This review focuses on the key role of mucosa-associated lymphoid tissue (MALT) in promoting the onset of the disease, underlying the relationship among microbiota, genetic factors, food antigen, infections, and mucosal immune response. Finally, we evaluate potential therapies targeting microbes and mucosa hyperresponsiveness in IgAN patients.

Keywords : IgA nephropathy, Mucosal immunity. Gut-kidney axis. Tonsil-kidney axis, Microbiota. Diet.

OP-MIC 005

HIDRADENITIS SUPPURATIVA: EtioPathogenesis, Clinical aspects, Diagnosis, Comorbidities and Treatment.

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Hidradenitis Suppurativa [HS] is a chronic, Inflammatory , Debilitating Skin disease characterized by deep tender subcutaneous nodules, complicated by fibrosis and extensive sinuses affecting primarily the apocrine gland bearing areas. It is a multifactorial disease in which genetic and environmental factors play a key role. It affects all races in early 20s with greater prevalence seen in women (3 to 5:1). The estimated disease prevalence is 1-4%. The disease is speculated to be caused by follicular structural abnormalities with associated risk factors as smoking, obesity, and positive family history. The primary defect in HS pathophysiology involves follicular occlusion of the folliculopilosebaceous unit, followed by follicular rupture, and immune responses (perifollicular lymphohistiocytic inflammation), finally leading to the development of clinical HS lesions. Certain comorbidities can also be seen such as IBD, Spondyloarthropathies, Epithelial tumors, Pyoderma gangrenosum etc. Treatment modalities include counseling of the patient to lose weight if obese, to wear loose clothes, stop smoking and maintain good hygiene. Topical antibiotics, like 1% clindamycin, have shown to give good results along with benzoyl peroxide wash. Orally cocktail of antibiotics can be given, though biological remain the best treatment option. Surgical excision can be done in later stages and in recalcitrant cases.

Keywords: Acne inversa, Acne triad, Adalimumab, Apocrine gland Hidradenitis Suppurativa, Hurley's staging, Etiopathogenesis, Sartorius system.

OP-MIC 006

ARTIFICIAL INTELLIGENCE IN PHARMACEUTICAL INDUSTRY

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Artificial intelligence use in pharmaceutical technology has increased over the years, and the use of technology can save time and money while providing a better understanding of the relationships between different formulations and processes parameters. The main objective of this artificial intelligence to identify useful information processing problems and give an abstract account of how to solve them.Artificial intelligencecompasses many branches of statistical and machine learning, pattern recognition, and clustering, similarity-based methods. AI is a flourishing technology which finds application in multiple aspects of life and industry.Artificial intelligence deals with the problem-solving by the aid of symbolized programming. It has greatly evolved in to a science with the hug applications in business, health care, and engineering. It describes the drugs discovery ,tools of AI, manufacturing execution systems automated control processes systems ,AI to predict new treatment ,development of novel peptides from natural foods, treatment and management of rare diseases, drug adherence and dosage ,challenges to adoption of AI in pharma.

Keywords: Drug Discovery, tools of AI, MES, ACPS, treatment and management of rare diseases, drug adherence and dosage, challenges to adoption of AI in pharma.

OP-MIC 007

NOVEL THERAPEUTIC APPROACHES FOR SPINAL MUSCULAR ATROPHY

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Spinal muscular atrophy is a genetic neuromuscular disease. It is a very rare condition where nerve cells in the spinal cord die prematurely and this causes the muscles which are normally controlled by these nerves to atrophy or wither away which leads to muscle weakness. The incidence of SMA is 1 in 11,000 live births. Even though there are different types of SMA, Type1 SMA is the most common and the severe type which accounts for about 95% of cases. Initially only supportive therapy was possible, but now drugs like Zolgensma, Nusinersen, and Risdiplam are approved and many more therapeutic approaches are in clinical trials. The drugs like Nusinersen and Risdiplam target SMN2 gene, where this gene can produce only 10% of functional SMN proteins, whereas the Zolgensma drug actually works by replacing the abnormal SMN1 gene with a healthy one through gene replacement therapy. Other therapeutic approaches are involved in up regulation of muscle growth, improving the muscle strength and some drugs are involved in neuroprotective action.

KEYWORDS: Spinal Muscular Atrophy, SMN gene, Nusinersen, Risdiplam, Onasemnogene abeparvovec, Riluzole, Reldesemtiv, Olesoxime.

OP-MIC 008

GROWTH OF NUTRACEUTICAL MARKET DURING COVID-19

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Nutraceuticals are pharmaceutical products that along with supplementing diet are also used as medicines, they are made up of ingredients that provide additional nutrition to the body. With the increase in lifestyle changes, there has also been an increase in 'lifestyle diseases' which are related to nutritional deficiencies, Nutraceuticals in turn play an important role in controlling them. During and post COVID-19 pandemic a surplus increase was seen in the consumption of nutraceuticals all around the world, in the grips of the global pandemic people sought additional protection from viral infections in the form of nutraceuticals, the sales of vitamin C, zinc, melatonin, vitamin D were up 60-80% compared to their usual sales. It is a great time to be in the nutraceutical market as consumers now believe they didn't get sick during the pandemic when they took more supplements, so they'll continue to take more supplements, the growth is expected to be continued in the foreseeable future.

OP-MIC 009

PHARMACEUTICAL QUALITY MANAGEMENT BY ROOT CAUSE ANALYSIS

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In every company failures can happen. It can have reflective impact on an organization's attractiveness. Every organization wants to achieve success in business, so, it focuses on the way to prevent letdowns in their processes. to stop the loss, to scale back the loss, the sole way out is to investigate their cause and prevent it from reoccurrence. Rootcause analysis is an efficient method to achieve this particular goal. Root cause analysis maybe a technique to address a non-conformance or problem to find out the real cause of particular problem. Various RCA tools are used for investigation. The most aim of root cause analysis is to discover the actual cause of an observed problem, defect, or failure so on utilize this particular information to correct it. After the search and identification of appropriate root cause the execution of CAPA (Corrective Action and Preventive Action) should be done.

Keywords: Root cause analysis, steps of RCA, tools of root cause analysis, Ishikawa (Fishbone) Diagram.

OP-MIC 010

PREVENTION AND MEDICATION OF CARDIOVASCULAR DISEASES

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Cardiovascular disease is a significant and ever-growing problem in theworld wide , accounting for nearly one-third of all deaths and leading to significant morbidity. It is also of particular and pressing interest as developing countries experience a change in lifestyle which introduces novel risk factors for cardiovascular disease, leading to a boom in cardiovascular disease risk throughout the developing world.Cardiovascular disease is ranked 1st in the cause of mortality of world population.The burden of cardiovascular disease can be ameliorated by careful risk reduction and, as such, primary prevention is an important priority for all developers of health policy. Strong consensus exists between international guidelines regarding the necessity of smoking cessation, weight optimisation and the importance of exercise, whilst guidelines vary slightly in their approach to hypertension and considerably regarding their approach to optimal lipid profile which remains a contentious issue. Previously fashionable ideas such as the polypill appear devoid of in-vivo efficacy, but there remain areas of future interest such as the benefit of serum urate reduction and utility of reduction of homocysteine levels.

Keywords: Primary prevention, cardiovascular disease, statins, exercise, diet, hypertension, smoking, alcohol, polypill, uric acid

OP-MIC 011

ARTIFICIAL INTELLIGENCE IN PHARMACEUTICAL RESEARCH INNOVATION

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Artificial intelligence (AI) is the combination of science and engineering to mimic human intelligence including learning, reasoning, and perception. The use of AI in the drug development process has proven to be one of the most significant technological achievements of the 21st century. Given the ability of AI to generate accurate data collection and efficient data management, it is poised to play a major role in pharmaceutical research

The process of discovering and developing a drug has become increasingly competitive, expensive and can take over a decade with high chances of failure which can be addressed by AI. Several biopharmaceutical companies, such as Bayer, Roche, and Pfizer, have teamed up with IT companies to develop a platform for the discovery of therapies in areas such as immuno-oncology and cardiovascular diseases and other complex diseases. One of the best examples is covid -19 vaccine Different applications of AI in drug discovery involves drug screening ,drug design ,polypharmacology ,repurposing

AI in advancing pharmaceutical product development by selecting the excipients ;monitoring and modifying development process

AI in pharmaceutical manufacturing by automated and personalized manufacturing. AI helps in clinical trial by patient selection, reducing the time required cutting down the expenses with the help of vast digital medical data available. With the perfect blend of revolutionary advances in computational technology and previous constraints of the collection of large volumes of data, AI techniques can enhance and elevate the existing pharmaceutical processes to new heights.

OP-MIC 012

ASSOCIATION OF OBSTRUCTIVE SLEEP APNEA (OSA) WITH NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) IN OBESE PATIENTS: An Observational Study

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Purpose:
Obstructive Sleep Apnea (OSA) is associated with the presence and severity of Non-Alcoholic Fatty Liver Disease (NAFLD). The study aimed to investigate the relationship between the severity of OSA and NAFLD.

Methods: Total of 334 patients (Body Mass Index, BMI 44.78±8.99 kg/m2), divided into classes according to severity of OSA evaluated with Apnea Hypopnea Index (AHI): OSAS 0 or absent (17%), mild OSA (26%), moderate OSA (20%), severe OSAS (37%). We studied polysomnographic,

biochemical data and FIB-4. A multiple regression model was computed to identify a polysomnographic independent predictor of FIB-4 among those parameters previously simple correlated with FIB-4.

Results:

The severity of OSA was associated with a decrease in High-Density Lipoprotein–cholesterol (HDL) and an increase in BMI, triglycerides, Homeostasis model assessment insulin-resistance index (HOMA), liver transaminases and FIB-4. FIB-4 correlated with sex, age, BMI, AHI, mean percentage oxyhaemoglobin (meanSaO2%), number of desaturations, platelets, transaminases, HDL, triglycerides and HOMA.

Conclusion:

MeanSpO2% represented an independent determinant for the worsening of FIB-4 and increased liver transaminases in patients with severe obesity and OSA. Hence, this establishes a clinical role of mean SaO2% in recognizing patients with obesity and OSA and higher risk of developing advanced lcirrhosis.
Keywords: Obstructive Sleep Apnea Syndrome · Non-Alcoholic Fatty Liver Disease · FIB-4 · Obesity Fibrosis.

OP- MIC 013

ANTI MICROBIAL ACTIVITES OF GARLIC AND GINGER EXTRACTS ON SOME CLINICAL ISOLATES

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This study investigated the antimicrobial activity of ginger (Zingiber officinale) and cloves of garlic (Allium sativum) extracts on six pathogenic microorganisms using the agar well diffusion method. These bacteria include; Pseudomonas aeruginosa, Staphylococcus aureus, Proteus mirabilis, Escherichia coli, Bacillus subtilis and Salmonella typhi. Four different extracts were obtained from the rhizomes of ginger and garlic (water-soluble and ethanol-soluble extracts). There were zones of inhibitions around the wells which indicate that the organisms were sensitive to both water and ethanol extracts of ginger and garlic. Newly obtained rhizomes of Zingiber officinale and Cloves of Allium sativum were put together, leaved nearly at 250C to permit air-drying, milled to fine powder and then these powders would be extracted (each alone) using water and ethanol as solvents for the extraction. After that, the extracts were examined for its antimicrobial (inhibitory) effect toward some clinical isolates of Staphylococcus aureus, Staphylococcus epidermidis, Streptococcus pyogens (G+ve) and Pseudomonas aeruginosa, Klebsiella pneumonia, Proteus mirabilis (G-ve). In this study, the antimicrobial

(inhibitory) effect of the extracts of both ginger and garlic has been determined toward six clinical bacterial isolates . Two kinds of extracts for ginger and two kinds of extracts for garlic have
been obtained and then examined separately and in combination of these extract. In the present study, some antibiotics (cloxacillin, cefepime, cefoxitin, clindamycin and tobramycin) were used to compare their effect with the effect of the extracts obtained. Disc diffusion method (Kirby-Bauer method) was used to determine the

antibacterial activity of extracts. The test isolates showed variable susceptibility to the garlic and ginger extract and to other antibiotics. The outcomes of susceptibility experiment depicted that ethanolic extract of garlic and ginger (each alone and in combination) showed more inhibitory effect than aqueous extract and also the combination of ethanolic extract of both ginger and garlic resulted in inhibitory effect greater than each extract alone. Both ginger and garlic extract have anti microbial activity (especially the ethanolic extract) against some pathogenic G+ve and G-ve bacteria, staphylococcus aureus, streptococcus pyogenes etc.

Keywords: Ginger, Garlic, Ethanolic extract, Pseudomonas aeruginosa, Staphylococcus aureus, Proteus mirabilis, Escherichia coli, Bacillus subtilis and Salmonella typhi.

POSTER PRESENTATIONS

PP-PCU-001

FORMULATION AND EVALUATION OF LAMIVUDINE NIOSOME

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Niosomes are generated from self –assembly of hydrated amphiphilic surfactant monomers. Various non ionic surfactants belonging to different chemical classes have been found to be useful alternatives to phospholipids in assembling vesicular carriers. The terminology does suggest that distinctions exist between niosomes and liposomes. They may differ in their chemical composition, but have similar physical properties. However, niosomes may also be prepared with ionic amphiphiles like negatively charged diacetyl phosphate (DCP) or positively charged stearylamine(SA) to achieve a stable vesicular suspension. The concept of incorporating the drug into niosomes for better targeting the drug at appropriate tissue destination is widely accepted by researchers and academicians. Niosomes represent a promising drug delivery module. They present a structure similar to liposome and hence they can represent alternative vesicular systems with respect to liposomes, due to niosomes ability to encapsulate different type of drugs within their multi environmental structure. Niosomes are thought to be better candidates drug delivery as compared to liposomes due to various factors like cost, stability etc. Lamivudine is one of the most effective drug in the treatment of HIV. My objective of this study is for treatment HIV with lamivudine niosomes; they inhibit the HIV reverse transcriptase enzyme competitively and acts as chain terminator of DNA synthesis. Lamivudine niosomes containing different concentration of surfactant were formulated by thin film Hydration Technique using Rotatory evaporator.

PP-PCU-002

FORMULATION AND EVALUATION OF SUMATRIPTAN BUCCAL PATCHES

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The purpose of this study was to develop and optimize formulations of mucoadhesive buccal patches of Sumatriptan using SA and Carbapol as the base matrix. The patches were prepared by the solvent casting method. PG was incorporated into the patches , to improve film properties of the patches and allows the drug to directly enter the systemic circulation by passing first pass metabolism . Buccal route of drug delivery provides direct access to the systemic circulation through the internal jugular vein bypassing first pass metabolism leading to high bioavailability. Other advantages such as excellent accessibility, low enzymatic activity, painless administration, easy drug withdrawal, versatility in designing .

In the present study, mucoadhesive buccal patch of sumatriptan for buccal administration was developed and optimized aiming to studying various formulation variables and its affect on patch properties. Also attempts were made to improve buccal penetration of the drug. For development of mucoadhesive, buccal patches of sumatriptan. Because of the properties such as hydrophobicity, low water permeability, drug impermeability, and moderate flexibility, ethyl cellulose was used as a backing layer polymer. Hence results of present investigation would help to establish the suitability of buccal route for administration of sumatriptan and influence of matrix. Polymers like sodium CMC, HPMC and SA on the physiochemical properties of buccal patches of sumatripan.

PP-PCU-003

PROGRESSIVE 3D PRINTING IN PHARMACEUTICAL TECHNOLOGY

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This poster delineates the overview of three-dimensional printing technology, a revolutionary technique that uses CAD software and programming to create three dimensional objects by placing material on a digital design platform. In recent years, 3D printing has become growing demand for customized formulations in pharmaceutical industry: Firstly, it can print pills on demand according to the individual condition of the patient, making the dosage more suitable for each patient's own physical condition; secondly, it can print tablets with specific shape and structure to control the release rate; thirdly, it can precisely control the distribution of cells, extracellular matrix and biomaterials to build organs or organ-on-a-chip for drug testing; finally, it could print loose porous pills to reduce swallowing difficulties. There are number of techniques in 3D printing- Ink jet printing, Fused deposition modeling, Extrusion 3D Printing, Zip dose, Hot melt extrusion, 3D printer, Selective laser sintering, etc. The emergence of third-generation 3D drug printing can boost the creation of new drugs with maximized efficacy and minimized toxicity, upgrading precision medicine practice. The current achievements include multifunctional drug delivery systems with accelerated release characteristic, adjustable and personalized dosage forms, implants and phantoms corresponding to specific patient anatomy as well as cell-based materials for regenerative medicine. This digital technology has gained considerable attraction when the first commercial 3D tablet SPIRATAM^{R} (levetiracetam) was approved by FDA in August 2015. New innovations in 3D printing may open huge opportunities for pharmaceutical research.

Keywords: Three-dimensional printing, CAD, Spiratam, Drug delivery, Regenerative medicine.

PP-PCU-004

FORMULATION AND EVALUATION OF PALIPERIDONE FLOATING TABLETS

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The aim of present work was to develop and evaluate the floating tablets of Paliperidone. The effect of polymer concentration and type of polymer were examined. The floating drug delivery system (tablets) was prepared by direct compression method using Gum Copal, Isapgol husk and Fenugreek extract as polymer and sodium bicarbonates as gas generating agent. All formulations were evaluated for the pre compression and post compression, *In vitro*buoyancy and *In-vitro* dissolution studies. Pre-compression studies revealed that there was no sign of any interaction between drug and polymers and all formulation showed good flow properties. Results of post compression parameters were found within the limits for all formulations. Among all the formulation F6 showed better buoyancy and drug release profile. The release of drug from the prepared formulations (F6) was found to follow zero order. It was concluded that drug release rate was increased as the concentration of polymer decreased. Isapgol husk showed greater drug release rate as compared to Gum Copal and Fenugreek extract.

Keywords: Paliperidone; GumCopal; Isapgolhusk; Fenugreek extract; buoyancy; *in-vitro* evaluation and floating drug delivery system.

PP-PCU-005

FORMULATION AND EVALUATION OF HERBAL PEEL OFF MASK.

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Objective: The present study is aimed to develop a peel off mask for the treatment of acne using guava leaf extract.

Method: The present work deals with the development and evaluation of the topical peel-off gel mask containing guava leaf extract.The peel-off mask was formulated by using different polymers (gelling agents) like poly vinyl alcohol (PVA), carboxymethyl cellulose (CMC), hydroxypropylmethylcellulose (HPMC),and Xanthan gum,in different ratios. Three different formulation batches were prepared and evaluated for various parameters like colour, odour, consistency, spreadability, drying time and peeling time.

Results:The organoleptic properties showed that the peel-of gel mask was green and had a soft texture.The variation concentrations of polymers affects the viscosity and film drying time of the peel-off mask significantly.

Conclusion: The obtained peel-off gel formulation could be the safe and efficacious remedy for treating the dermatological disorders like acne and helps in improving the patients compliance, satisfaction towards anti-acne therapy. Therefore, this peel-off gel mask would be a good alternative to the synthetic anti-acne medications.

Keywords: peel off masks, Carbopol 934, Xanthan gum.

PP-PCU-006

SMART DRUG DELIVERY SYSTEM IN TREATMENT OF RHEUMATOID ARTHRITIS - CURRENT, FUTURE PERSPECTIVES

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Rheumatoid arthritis (RA) is a progressive autoimmune inflammatory disorder characterized by cellular infiltration in synovium causing joint destruction and bone erosion. The heterogeneous nature of the disease manifests in different clinical forms, hence treatment of RA still remains obscure. Treatments are limited owing to systemic toxicity by dose-escalation and lack of selectivity. To overcome these limitations, Smart drug delivery systems (SDDS) are under investigation to exploit the arthritic microenvironment either by passive targeting or active targeting to the inflamed joints via folate receptor,CD44, angiogenesis, integrins. This review comprehensively deliberates upon understanding the pathophysiology of RA and role of SDDSS, highlighting the emerging trends for RA nanotherapeutics.

Key words: Rheumatoid arthritis, Angiogenesis, Nanotherapeutics, Smart drug delivery systems, Toxicity.

PP- PAQA 001

MODERN ANALYTICAL METHODS FOR DETECTION OF FOOD FRAUD AND ADULTERATION BY FOOD CATEGORY

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This review provides current information on the analytical methods used to identify food adulteration in the six most adulterated food categories : animal origin and seafood, oils and fats, beverages, spices and sweet foods (e.g. honey), grain-based food, and others (organic food and dietary supplements). The analytical techniques (both conventional and emerging) used to identify adulteration in these six food categories involve sensory, physicochemical, DNA-based, chromatographic and spectroscopic methods, and have been combined with chemometrics, making these techniques more convenient and effective for the analysis of a broad variety of food products. Despite recent advances, the need remains for suitably sensitive and widely applicable methodologies that encompass all the various aspects of food adulteration. Analysis of historical incidents and changes in the underlying fraud opportunity factors is important to reduce vulnerability of food fraud. Risk analysis, vulnerability assessments and prioritization will facilitate a strategy that is proactive and can prevent food fraud before it occurs. With this imperative for consumer protection and food safety, food researchers have engaged in the research and development of rapid and accurate analytical techniques for food adulteration and fraud. This comprehensive review documents food adulteration and fraud events in several categories of food products, describes the common characteristics of incidents that have allowed the adulteration and its detection, and encourages the strengthening of our capabilities for the detection of adulteration in a globalized food environment.

Keywords : Food authentication; adulteration; fraud; food categories; analytical methods; geographical origin.

PP- PAQA 002

DEVELOPMENT AND VALIDATION OF STABILITY INDICATING RP-HPLC METHOD FOR THE ESTIMATION OF AMOXICILLIN, OMEPRAZOLE AND RIFABUTIN IN BULK AND FORMULATION AND ITS APPLICATIONS IN DISSOLUTION STUDIES

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Analytical methods development and validation play important roles in the discovery, development, and manufacture of pharmaceuticals. The current good manufacturing practice (CGMP) and Food Drug Administration (FDA) Guidelines insist for adoption of sound methods of analysis with greater sensitivity and reproducibility. Development of a method of analysis is usually based on prior art (or) existing literature, using the same (or) quite similar instrumentation. It is rare today that an HPLC-based method is developed that does not in the same way relate (or) compare to existing, literature based approaches. Today HPLC is the method of choice used by the pharmaceutical industry to assay the intact drug and degradation products. The appropriate selection and chromatographic conditions ensure that the HPLC method will have the desired specificity. UV spectroscopy is also a simple analytical tool widely used for routine assay of drugs. Hence for the assay of the selected drugs HPLC and UV spectroscopy has been chosen for these proposed methods.

Aim and objective: The purpose of this research work was to Develop and validate a sensitive and accurate stability indicating RP-HPLC method for the estimation of Amoxicillin, Omeprazole and Rifabutin in bulk and formulation and its applications in dissolution studies.

Methods: Separation of ALN, RBN & OMP was conceded using 5.0 µm C18, Waters column (at 27 °C), with 60:40 vol/vol mix ratio, NaHSO4 (0.1M, pH 4.5) & methanol like mobile phase and movement rate of 1.0 ml/min, sensed at 246 nm.

The above method is applied in dissolution studies.

Keywords- RP-HPLC, amoxicillin, omeprazole, rifabutin, dissolution studies.

PP -PAQA 003

DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR THE SIMULTANEOUS ESTIMATION OF EMPAGLIFLOZIN, LINAGLIPTIN AND METFORMIN EXTENDED RELEASE TABLET

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A new, simple, precise, accurate and reproducible RP-HPLC method for Simultaneous estimation of Metformin, Empagliflozin and Linagliptin bulk and pharmaceutical formulations. Separation of Metformin, Empagliflozin and Linagliptin was successfully achieve Dona: Thermo 250X4.6mm, 5µm, C18 or equivalent in an isocratic mode utilizing Na2SO4: Methanol (60:40) at a flow rate of 1.0 mL/min and eluate was monitored at 256 nm, with a retention time of 2.604, 3.570 and 4.482 minutes for Metformin, Empagliflozin and Linagliptin respectively. The method was validated and there response was found to be linear in the drug concentration range of 50µg/ml to150 µg/ml for Metformin, Empagliflozin and 50µg/ml to150 µg/ml for and Linagliptin. The values of the correlation coefficient were found to 1.000, 1.000 for Metformin, Empagliflozin and 0.999M for Linagliptin respectively. The LOD and LOQ for Metformin, Empagliflozin were found to be 1.521, 5.071 and 0.080, 0.268 respectively. The LOD and LOQ for Linagliptin were found to be 0.026 and 0.085 respectively. This method was found to be a good percentage recovery for Metformin, Empagliflozin and Linagliptin were found to be 100 ,100 and 100 respectively, indicating that the proposed method is highly accurate. The specificity of the method shows good correlation between retention times of standard with the sample so, the method specifically determines the analyte in the sample without interference from excipients of tablet dosage forms. The method was extensively validated according to ICH guidelines for Linearity, Accuracy, Precision, Specificity and Robustness.

Keywords: Metformin, Empagliflozin and Linagliptin, High performance liquid chromatography.

PP-PCH -001

DEVELOPMENT OF POTENTIAL INHIBITORS AGAINST SARS-COV-2: IN SILICO DOCKING STUDY OF ROSACEAE FAMILY

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The coronavirus disease 2019 (COVID-19) pandemic is the universal life frightening epidemic disease, elicited by SARS-CoV-2, is an incomparable world health disaster. Therapeutic choices for treatment are still very scant and a challenging one. The drug discovery and design by conventional methods comprises the painstaking research time with a vast economy that is not simply met by present pandemic conditions. The main aim of this study is to discover and identify the most effective and capable molecules from herbals against the RdRp target of SARS-CoV-2 via in silico docking screening of various species belonging to the Rosaceae family. The binding affinities were determined by structure based molecular docking study and the reports revealed that all phytochemical constituents showed better affinity towards the target than standard N3 inhibitors. Among all the docked phytochemicals Multiflorin B showed good interaction with RdRp with a docking score value of -5.471 kcal/mol. Based on the docking studies, MD simulations study was performed for protein-ligand complexes. The pharmacokinetic and the toxicity studies were performed that showed the safety of the constituents. The present study indicated that the various active phytochemical constituents from the Rosaceae family could inhibit SARS-CoV-2 and they can be repurposed against SARS-CoV-2.

Key Words: SARS-CoV-2, RdRp, Rosaceae, Insilico docking studies, MD Simulation, ADMET studies

PP-PCH -002

PERSPECTIVES OF 3D PRINTING IN CONTEMPORARY DRUG DELIVERY SYSTEM

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The drug industry is moving forwards at a rapid step. Current technology has enabled the development of novel pharmaceutical dosage forms for targeted therapy. Still,3D printing technology in the pharmaceutical industry has opened new perspective in the research and development of printed materials and devices,3DP allows the potential for printing dosage forms on demand, with low cost and case of use,3D printing can print pills with complex structures to control the release rate, or it can print pills on demand to make the dosage more accurate and also promote drug absorption or reduce adverse drug reactions, In the last several years there have been many 3D printing application in the world of medicine. They range from bioprinting where biomaterials such as cell and growth factors are combined to create tissues like structures imitating their natural counterparts to medical devices like prosthetics. 3D printing application in medicines used for producing metal orthopedic implants, artificial organs and also pills can be produced.

Key Words: 3D printing, pharmaceutical dosage forms.

PP-PCH -003

STUDIES OF ISOXAZOLE SYNTHESIS, BIOLOGICAL EVALUATION AND MOLECULAR DOCKING SYNCHRONIZED QUINAZOLINONE DERIVATIVES

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Quinazolinones and Isoxazoles derivatives acts as potent VEGFR-2 inhibitors hence, in the present study isoxazole heterocycle is conjugated with Quinazolinone scaffold in order to obtain new hybrid molecules with potent VEGFR-2 inhibitor activity. Twelve Novel isoxazole synchronized quinazolinone derivatives were designed and synthesized by the condensation of different 3-aryl-5-methylisoxazole-4-carbohydrazides (5a-h) with 2-phenyl/2-methyl-(4H)-3, 1-benzoxazin-4-ones to give the target compounds that act as anti- inflammatory agents and anticancer agents. The synthesized compounds were characterized on the basis of spectral and elemental analysis data. Antiinflammatory activity results showed that compounds 6b, 6f and 6i exhibited significant protection against at the concentration of 20 mg/kg. . In anti proliferative assay MCF-7 Breast cancer cell line, compounds and 6i and 6j exhibited potent activity with IC50 values in nanomolar concentrations as well as in silico docking studies also reveal that compounds 6d, 6f, 6g, 6h and 6j have good dock score,binding affinity and binding energies towards epidermal growth factor receptor tyrosine kinase

PP-PCH -004

SYNTHESIS AND EVALUATION OF BIOLOGICAL ACTIVE SUBSTITUTED TRIAZOLES ON CHALCONES

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1,2,3-triazoles have a wide range of biological functions, they are significant five-membered Heterocyclic scaffolds. Using "Click" chemistry, a numerous 1H-1,2,3-triazole analogues (9a-e) were Produced. A number of distinctive compounds of coumarin and chalcones integrated with 1,2,3-Triazole for the production of (E)-7-((1-(4-Cinnamoylphenyl)-1H-1,2,3-triazol-4-yl)methoxy)-4-Methyl-2H-chromen-2-one (9a-9e) scaffolds starting from Hymecromone(3) through key Intermediate 4-methyl-7-(prop-2-yn-1-yloxy)-2H-chromen-2-one(4) and (E)-1- (4-azidephenyl)-3-Phenylprop-2-en-1-one (8a-e) involoving a multistep reaction. All compounds were characterized by Means of IR,NMR and Mass spectroscopy. Subsequently, compounds (9a-e) four cancer cells were Examined sequentially for anti-cancer activity, including A-549,HeLa, PANC-1and HT1080 cell lines Using doxorubicin as reference drug. Comparing 9c to 9a, 9b, 9d, and 9e, the studied compoundsActivity towards conventional drugs was superior. A significant interaction with interleukin-6 Cancerous cells was observed in the docking studies investigations of molecules 9a, 9b, 9c, 9d, and 9e

PP-PCH -005

ANTIBIOTIC RESISTANCE BREAKERS: NEW HOPE TO OVERCOME ADR

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Antibiotic resistance pathogen becomes an ever increasing threat to mankind. Many bacteria develop resistance towards the antibiotic due to over use of that antibiotic by developing certain enzymes like beta lactamase for beta lactam antibiotics .This can be overcome by using antibiotic resistance breakers. Antibiotic resistance breakers (ARBs) sometimes referred to as antibiotic adjuvants , are non-antibiotic moieties which do not have any antimicrobial activity on their own, but in combination with antibiotics enhance their antimicrobial activity and help overcome resistance barriers.

Keywords: Antibiotic, Beta lactam, Enzymes , Antimicrobial resistance breakers, Adjuvants.

PP-PCH -006

SCOPE AND FUTURE OF DIGITAL PROMOTION IN PHARMACEUTICAL INDUSTRY

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The Indian pharmaceutical industry has been lacking enthusiasm in adapting digital tools for product promotion and in reaching out to the health care providers, they were heavily dependent on this sales representatives for connecting with the health care providers and channel partners. The pandemic disrupted their normal functioning and the companies were forced to adapt digital tools for product promotion. Here we explore the scope of digital promotion and its acceptance among the mid and senior level marketing professionals.Digital tools are the future of product promotion in the pharmaceutical industry and by which industry will be able to take the issue of accessibility and availability.

Key Words: Product promotion, digital tools, healthcare providers

PP-PCOL-001

THE EMERGING ROLES AND THERAPEUTIC POTENTIAL OF EXOSOMES IN CANCER

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Exosomes are a class of extracellular vesicles that are secreted by most cells and contain various bioactive molecules reflecting their cellular origin and can have significant impact on the local microenvironment as well as on distant tissues in the body. . Exosomes encapsulate several biomolecules including lipids, proteins, and nucleic acids, and these vesicles can be isolated from different body fluids and their small sizes make them attractive in various biomedical applications. Exosome-facilitated messages can regulate cellular growth, division, and apoptosis, changes in gene expression in recipient cells . Exosomes carry proteins and nucleic acids from their cell of origin, and these contents can be delivered to a different recipient cell leading to intercellular communication that can impact different physiological process. Their unique strengths include enhanced passive targeting due to their size, indigenous nature, and the ability to cross biological barriers. Studies of these exosomal features in tumor pathogenesis have led to the development of therapeutic and diagnostic approaches using exosomes for cancer therapy. On one hand, exosomes role in the different hallmarks of cancer has been widely described, highlighting the urge to understand the potential to target communication mediated by exosomes as a novel therapeutic approach in cancer. On other hand, exosomes stability in circulation and tumor targeting capacity shows their applicability in the delivery of anti-cancer molecules.This review will discuss the dual applicability of exosomes in cancer focusing on their usage for therapy improvement, or their targeting to block their supportive role in tumor progression and response to therapy , and highlight the current developments and the strategies used to enhance the potential of exosomes to become clinical partners in the treatment of cancer.

Keywords : Exosomes ,Therapeutic vehicle , MSCs, malignant tumors.

PP-PCOL-002

RISK FACTORS OF POSTPARTUM DEPRESSION

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Postpartum Depression (PPD) is a widespread mental health problem and one of the prime causes of maternal suffering and ill health. On a global level, the prevalence of the disorder is about 10-15%. Symptoms generally appear within the first four to six weeks, which is the high-risk period. However, it may develop upto one year post delivery. PPD presents with symptoms of classical depression including mood fluctuations, bouts of crying, lack of interest in the child and suicidal thoughts. The social environment of the infant during the first few months is primarily provided by the mother, and PPD may thus impact the child's development. It also increases the child's susceptibility to malnutrition. The factors identified spanned sociodemographic, biological, sociological, and obstetric domains. These include socioeconomic standing, marital relationship, history of psychiatric illness, gestational diabetes, vitamin D deficiency, delivery method, violence, abuse, birth experience, biological and epigenetic markers. A previous history of depression or psychiatric illness, depressive symptoms during pregnancy lack of spousal and social support are the most powerful risk factors. Other significant factors include complications during pregnancy, low socioeconomic status, and stressful life events. Postpartum Depression is treated differently depending on the type and the severity of the symptoms. Treatment options includes anti-anxiety or anti-depressant medicines, psychotherapy, or cognitive behavioral therapy. In some cases, electroconvulsive therapy (ECT) can be effective.

Keywords: Sociodemographic, Psychotherapy, Obstetric Anxiety, Electroconvulsive.

PP-PCOL-003

A SYSTEMATIC REVIEW STUDY ON KERATOCONUS

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Keratoconus is a bilateral and asymmetric disease which results in progressive thinning and steeping of the cornea leading to irregular astigmatism and decreased visual acuity. Traditionally, the condition has been described as a non-inflammatory disease; however, more recently it has been associated with ocular inflammation. Keratoconus normally develops in the second and third decades of life and progresses until the fourth decade. The condition affects all ethnicities and both sexes. The prevalence and incidence rates of keratoconus have been estimated to be between 0.2 and 4,790 per 100,000 persons and 1.5 and 25 cases per 100,000 persons/year, respectively, with highest rates typically occurring in 20- to 30-year-olds and Middle Eastern and Asian ethnicities. Progressive stromal thinning, rupture of the anterior limiting membrane, and subsequent ectasia of the central/paracentral cornea are the most commonly observed histopathological findings. A family history of keratoconus, eye rubbing, eczema, asthma, and allergy are risk factors for developing keratoconus. Detecting keratoconus in its earliest stages remains a challenge. Corneal topography is the primary diagnostic tool for keratoconus detection. Keratoconus severity and progression may be classified based on morphological features and disease evolution, ocular signs, and index-based systems. Keratoconus treatment varies depending on disease severity and progression. Mild cases are typically treated with spectacles, moderate cases with contact lenses, while severe cases that cannot be managed with scleral contact lenses may require corneal surgery. Mild to moderate cases of progressive keratoconus may also be treated surgically, most commonly with corneal crosslinking.

PP-PCOL-004

MECHANISMS OF DRUG RESISTANCE IN MYCOBACTERIUM TUBERCULOSIS UPDATE 1995 TO 2022

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Drug-resistant tuberculosis (DR-TB), including multiband extensively drug-resistant TB, is posing a significant challenge to effective treatment and TB control worldwide. New progress has been made in our understanding of the mechanisms of resistance to anti-tuberculosis drugs. This review provides an update on the major advances in drug resistance mechanisms since the previous publication in 2009, as well as added information on mechanisms of resistance to new drugs and repurposed agents. The recent application of whole genome sequencing technologies has provided new insight into the mechanisms and complexity of drug resistance. However, further research is needed to address the significance of newly discovered gene mutations in causing drug resistance. Improved knowledge of drug resistance mechanisms will help understand the mechanisms of action of the drugs, devise better molecular diagnostic tests for more effective DR-TB management (and for personalized treatment), and facilitate the development of new drugs to improve treatment of disease.

PP-PCOL-005

DOSTRALIMAB- AN END TO CANCER

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The 19 million cancer cases reported worldwide and cancer is a second leading cause of death colorectal cancer (CRC) has 9.4% mortality. Immunotherapy is one of the four pillars of cancer treatment that has recently emerged as a beacon of hope for cancer patients.In the era of rapid development, dostarlimab, an anti-programmed cell death protein (PD-1) monoclonal antibody has mesmerized the medical profession by showing complete (100%) cure of patients with colorectal cancer. Not only this, the results obtained from clinical trials revealed no major side effects in any of the participants in the study. Dostarlimab has also shown promising results in endometrial cancer, ovarian cancer, melanoma, head and neck cancer, and breast cancer therapy. This review focuses upon the action of immunotherapy, extensively emphasizing the miraculous therapy to activate T-cells for cancer treatment. According to the New York Times, 18 patients took a medicine named Dostarlimab for six months in a limited clinical trial done by Memorial Sloan Kettering Cancer Center, and all of them saw their tumours shrink at the end.Experts stated that the malignancy is undetectable by physical examination, endoscopy, positron emission tomography or PET scans, or MRI scans. This shows that Dostarlimab has the potential to be a 'possible' cancer cure for one of the most lethal tumors. The recent clinical trial has opened up doors for future clinical trials perhaps with bigger sample sizes and ones that also include CRC patients.

Keywords: monoclonal antibody, PD-1, Immunotherapy.

PP-PCOL-006

ARTIFICIAL INTELLIGENCE IN THE TREATMENT OF ALZHEIMER'S DISEASE

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Artificial intelligence the ability of digital computer or computer controlled robot to perform tasks commonly associated with intelligence beings. It's use in pharmaceutical technology has increased over years. Alzheimer's disease is one of the most prevalent dementia types effecting the elderly population. Artificial intelligence is an effective technique for Alzheimer's disease detection as these methods are employed as a computer aided diagnosis (CAD system).They play a crucial role in clinical practices and In identifying variations in the brain images to detect AD. AI techniques have been taking significant consideration in the neuro imaging research community because of its advantages over conventional diagnostic techniques which utilize mass-univariate statistical methods. The methods of AI applied to AD detection are image processing, feature extraction, machine learning methods. Annual brain scanning and computer vision assisted early diagnosis is encouraged, so that disease modifying drug therapy could begin earlier in the progressive pathology. AI technology represents a promising approach to investigate the pathological mechanisms of AD by analyzing such complex data.

PP-PCOL-007

LONG-TERM IMPACT OF MYOSITIS – NEW INSIGHTS ON THE TREATMENT STRATEGIES

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Myositis is defined as chronic, progressive inflammation of the muscles, whereas few types are associated with skin rashes. Myositis is thought to be an autoimmune condition that causes the body to attack muscles. Researchers pinpoint the etiological factors of the disease and found them to be the infection and injury. Once it gets diagnosed with different relevant tests, the treatment starts. In fact, there is no cure for myositis, but if left untreated it causes death. However, some people are able to manage their symptoms well. Some may even experience partial or complete remission. In regard to the treatment, there are no specific medications that are available for the treatment of myositis. However, corticosteroids such as prednisone are often prescribed. This drug is prescribed in combination with immunosuppressant drugs such as azathioprine and methotrexate. Currently, numerous immunosuppressive and immunomodulatory therapeutic agents are available for the treatment of myositis. Glucocorticosteroids and immunosuppressants remain first-line therapy. Due to the nature of this disease, it may take several changes in therapy to find the right treatment plan. It is always better to work with the physician for the best course of action. Non-pharmacological treatments such as physical therapy, exercise, stretching, and yoga can help keep muscles strong and flexible and prevent muscle atrophy. Additionally, further research on the pathogenesis of myositis is required to understand it in a better way and predict the response to a specific treatment

PP-PCOL-008

TREATMENT OPTION IN TUBERCULAR ABSCESS IN THE CHEST WALL

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The tubercular abscess of the chest wall remains one of the differential diagnoses of a chest wall tumour and the management strategy is controversial. We are reviewing the medical records of 22 patients treated at an institution . Two patients were managed by anti tubercular medications Alone, eight patients managed by medication and open drainage ,five patients underwent open drainage with subsequent radial surgery at a constant interval of time . Seven patients underwent radical surgery without prior open drainage.

Anti tubercular drugs were administered basically for more than six months . Regardless of surgeries management including for more than one month prior to radial surgery . Post operative emphysema were seen in one patient after radical surgery . The main follow up duration was 32.8 months and there were no recurrence. Complete resection of the tubercular abscess with sufficient anti tubercular therapy resulted in satisfactory outcome . Anti tubercular therapy with or without open drainage can be viable.

Keywords: Tubercular abscess , chest wall , Open drainage , Polymerase chain reaction.

PP-PCOG-001

UPDATED REVIEW OF NATURAL PLANTS FOR THE PREVENTION AND MANAGEMENT OF KIDNEY STONES (2019 TO TILL DATE)

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Formation of hard deposits made of salts and minerals (calculi)in the **k**idneys stones is one of the familiar and common disorders known as urolithiasis. Various risk factors, including food, excess body mass index, obesity, certain medication, and lifestyle result in the formation of stones in the Urinary Tract (UT). Several studies have recommended that a diet with a higher intake of vegetables, fruits, water, and regular yoga practice plays a major role in the prevention of kidney stones disease (KSD). In the current review, we enlighten about natural plants and their chemical constituents with mechanisms of action used for KSD from 2019 to 2022. Bryophyllum pinnatum, Cissus adnata, Cissus discolor, Anacardium occidentale, Ficus carica, Euphorbia hirta, Tribulus Terrestris, Ananas fruit, Allium siculum, Daucus carota, Raphanus sativus, Benincasa hispida, Banana tree, Mangifera indica, Boldo purpurascens, Hybanthus enneaspermus, Piper nigrum have received considerable interest based on proven scientific evidence as treatment options. Following the appropriate diet can inhibit the formation of kidney stones and decrease the burden of surgical procedures for the treatment of KSD.

PP-PCOG-002

IN- VITRO PHARMACOLOGICAL INVESTIGATION AND MOLECULAR DOCKING VALIDATION OF CISSUS QUADRANGULARIS AGAINST BACTERIAL INFECTIONS

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The present study's objective was to identify the phytoconstituents present in n-hexane extract of *Cissus quadrangularis* (*C. quadrangularis*) with a help of Gas chromatography-Mass Spectrometry (GC-MS). The extract was subjected for the antibacterial (*Escherichia coli*) activity followed by the validation of the same by subjecting the bioactive compounds obtained in GC-MS analysis to molecular docking studies for antibacterial protein targets. Three compounds with molecular formula $C_{20}H_{42}O_2S$, $C_{14}H_{25}O_3N_2Cl$ and $C_{30}H_{50}O$ were identified in GC-MS analysis. Different extract concentrations 100 ,150 and 200 µg/ml for anti-bacterial activity were used. For antibacterial protein target, results of molecular docking (presented by 3D & 2D model) revealed that the identified compounds' binding affinities were in the range -4.49 to -6.68 Kcal/mol, while chlorobiocin was found to be -4.75 Kcal/mol. The extract exhibited dose-dependent antibacterial activity (75 and 100 µg/ml). Finally concluded that the identified bioactive compounds from *C.quadrangularis* have the potential antibacterial activity as justified by *in-vitro* biological evaluations and molecular docking studies.

Keywords: *Cissus quadrangularis, Escherichia coli,* GC-MS, Molecular Docking

PP-PCOG-003

CURCUMIN - A REVIEW ON CANCER THERAPY

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Cancer is the second leading cause of death in the world and one of the major public health problems. Despite the great advances in cancer therapy, Therefore, the quest for more efficient and less toxic cancer treatment strategies is still at the forefront of current research. Curcumin, the active ingredient of the *Curcuma longa* plant. The review article Six independent searches, one for each antioxidant, anti-inflammatory, antimicrobial, antiviral domain, were performed in parallel using three independent scientific library databases: PubMed, web of sciences and Scopus, among which its anticancer potential has been the most described and still remains under investigation. The present review focuses on the cell signaling pathways involved in cancer development and proliferation, and which are targeted by curcumin. Curcumin has been reported to modulate growth factors, enzymes, transcription factors, kinase, inflammatory cytokines, and proapoptotic (by upregulation) and antiapoptotic (by downregulation) proteins. This polyphenol compound, alone or combined with other agents, could represent an effective drug for cancer therapy.

Key words: Curcumin, Anticancer, PubMed, Scopus.

PP-PCOG-004

IN - VITRO PHARMACOLOGICAL INVESTIGATION AND MOLECULAR DOCKING VALIDATION OF CEIBA PENTANDRA AGAINST HELMINTHIASIS INFECTIONS

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The objective of the current work was to identify the phytochemicals present in the n-hexane extract of *Ceiba pentandra* (*C. pentandra*) with an analytical technique, Gas Chromatography-Mass Spectrometry (GC-MS). The extract was evaluated for the anthelmintic (adult Indian earthworms-*Pheretima posthuma)* potentials followed by the substantiation of the same by subjecting the bioactive compounds obtained in GC-MS analysis to molecular docking studies for anthelmintic protein targets. Seven bioactive compounds having molecular formula $C_{28}H_{56}O_2$, $C_{20}H_{38}O_2$, $C_8H_{14}O_2$, $C_9H_{16}O$, $C_5H_{11}O_3N$, $C_{14}H_{13}O_3$ and $C_{28}H_{46}O$ were identified by GC-MS technique. Different concentrations of extract viz 50, 100, 150 and 200 mg/ml were used for anthelmintic activity. For anthelmintic protein target, the 3D & 2D model representation of molecular docking results indicated that the identified compounds (binding energy -5.05 to -7.84 Kcal/mol) marked a comparable binding affinity as of albendazole (binding energy -8.75 Kcal/mol) except C3 compound (binding energy +32.84 Kcal/mol). The extract showed dose-dependent *in-vitro* anthelmintic (150 and 200 mg/ml). The 100 µg/ml was observed as minimum lethal amount of extract for anthelmintic activity. At this concentration, the death of *Pheretima posthuma* was observed in 31.09 ± 1.36 min while with a standard dose of albendazole, the lethal time was found to be 34.84 ± 1.47 min. The study concluded that the identified bioactive compounds of *Ceiba pentandra* possess the anthelmintic activity as justified by *in-vitro* biological studies and molecular docking technique.

Keywords: *Ceiba pentandra*, Earthworm, GC-MS, Molecular Docking.

PP-PCOG-005

NOVEL DELIVERY SYSTEMS OF PHYTOCONSTITUENTS IN CHEMOTHERAPY

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Phytoconstituents are non-nutrient active plant chemical extracts or bioactive compounds, these phytoconstituents have emerged as a great therapeutic action for many diseases. Phytochemicals have been extensively used for their anticancer properties, despite their excellent anticancer abilities, phytochemicals are limited by their low water solubility and poor oral bio-availability. Bio-availability is considered a notable challenge to improving bio-efficacy in transporting phytoconstituents. Several methods have emerged to improve the delivery of phytoconstituents into the body. To deliver phytochemicals, common carriers such as micelles with a polymeric base are used. Nevertheless, the novel drug delivery system is proven to be more efficient because of novel delivery system dose requirement is reduced to half and increased bio-availability. The effect of phytochemicals increases by manifolds due to this method and we can avoid undesired side effects in chemotherapy .Novel delivery systems that manipulate the pharmacokinetics of existing drugs, such as nanovesicles (nanoparticles), cyclodextrins, neosomes, liposomes, and implants could be used to deliver phytoconstituents to the target sites.

PP-PPR-001

A STUDY ON CLINICAL OUTCOMES OF SEPTIC SHOCK PATIENTS RECEIVING INTRAVENOUS VITAMIN C

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Background: Sepsis, a potentially fatal organ dysfunction brought on by an unbalanced host response to infection, is a major cause of morbidity and mortality on a global scale. In the intensive care unit, it is a typical critical illness. It is the leading cause of hospital deaths and the hospital condition that costs the most to treat. The mortality rate for patients with septic shock is 25–40% despite standard treatment. The goal of the current study is to determine whether high-dose intravenous vitamin C is effective in treating septic patients, making it an adjuvant treatment for septic shock.

Methods: This prospective and interventional study compared the outcomes and clinical courses of consecutive septic shock patients treated with intravenous vitamin C along with noradrenaline, vasopressin, and hydrocortisone (test group) and a control group over the course of six months in the Critical Care Unit of a tertiary care hospital in Hyderabad, India.

Results: In our department, fifty patients with sepsis and septic shock were divided into two groups at random: the control group (25 cases) and the test C group (25 cases). The test group received intravenously 1.5 g of vitamin C dissolved in 100ml of normal saline every eight hours, while the control group received essential therapy with an intravenous drip of 0.9% Normal saline 100ml/hr or DNS 125ml/hr (0.9% Sodium chloride and 5% Dextrose) as a placebo. The efficacy and mortality were statistically analyzed and compared between the two groups. The data was analyzed using Microsoft Excel and SPSS version 26. This software also obtained descriptive statistics, frequencies, and several graphical data. The clinical data were summarized using summary statistics, which were appropriately presented as means or percentages.

Conclusion: The APACHE II and SOFA scores show improvement, indicating that the septic shock resolves more quickly in the experimental group than in the control group. This study's data are constrained by its briefer duration and smaller sample size. Therefore, more investigation is needed to establish vitamin C's function in septic shock patients.

PP-PPR-002

DEVELOPMENT OF PLANT BASED HAIR GEL TO OVERCOME ALOPECIA- A GLOBAL CONCERN FOR YOUTH

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Alopecia areata, Telogen effluvium is the current major issue in younger population. Hair loss could be due to various underlying conditions or due to stress and environmental factors. The aim of the study is to make an evidence based formulation that can manage alopecia without the occurrence of adverse effects. The study involves the screening of ligands obtained from plants and perform molecular docking and selection of the compounds which are effective against the disease targets causing the progression of alopecia. Based on the docking results plant derivatives were separated using HPLC and various solvent extraction methods. Using the extracted compounds a gel formulation was made for topical use. The compounds selected are thought to be acting by inhibiting various targets which can cause the progression of alopecia and baldness.

Keywords: Hair remedy, molecular docking, ligands, Alopecia areata, baldness, solvent extraction method.

PP-PPR-003

VIRTUAL REALITY IN PHARMACY

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Virtual Reality is very common for an ordinary man, to get into the world of computer graphics. Virtual reality (VR) is a technology where it works on computer – stimulated environment, whether the environment is imaginary or a real world. It is the key for experiencing, feeling and touching the past, present and future. It is the medium where we could create our own world, our own customized reality. Virtual reality is a mind-body interaction which is based on real science. It distracts the mind's attention as such blocks the pain signals from reaching the brain. And virtual reality has many applications in pharmacy, as it is used in adjunctive or replacement treatment for pharmacotherapy in pain management, pharmacological modeling for drug discovery and patient counseling and behavior modification.

PP-PPR-004

A SYSTEMATIC REVIEW OF HUTCHINSON GILFORD PROGERIA SYNDROME

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Hutchinson-Gilford progeria syndrome is an ultra-rare, sporadic, autosomal dominant, segmental, premature aging diseaseThe disorder occurs because of aberrant splicing of the LMNA gene (OMIM 150330) resulting in accumulation of a permanently farnesylated, uncleavedlamin A isoform called progerin. Accumulation of progerin causes abnormalities in nuclear morphologic features and function as well as cellular stiffening. The clinical manifestations are characterized by characterized by the dramatic, rapid appearance of aging beginning in childhood. Affected children typically look normal at birth and in early infancy, but then grow more slowly than other children and do not gain weight at the expected rate. They develop a characteristic facial appearance including prominent eyes, a thin nose with a beaked tip, thin lips, a small chin, and protruding ears. Hutchinson-Gilford progeria syndrome also causes hair loss (alopecia), aged-looking skin, joint abnormalities, and a loss of fat under the skin. This condition does not affect intellectual development or the development of motor skills such as sitting, standing, and walking. As the incidence of this rare condition is increasing in the present world it is the need in time for pharmaceutical and therapeutical advancements for this condition

PP-MIC 001

NEUROHACKING- A NEW INNOVATION IN BIOHACKING TO IMPROVE THE HEALTH CARE

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Body hacking is the application of the hacker ethic in pursuit of enhancement or change to the body's function through technological means, such as do-it- yourself cybernetic devices or by introducing biochemicals. Biohacking can also refer to managing one's own biology using a combination of medical, nutritional and electronic techniques. This may include the use of nootropics, nontoxic substances, and cybernetic devices for recording biometric data. The grinder movement is strongly associated with the body modification movement and practices actual implantation of cybernetic devices in organic bodies as a method of working towards transhumanism. This includes designing and installing implants and biochemicals. This research work will enable us to explore new artistic work and how live interfaces are essential to their core concepts. This research may explore using the concept of hacking the body to re-purpose and re- imagine internal signals from the body. Neurohacking is a subclass of biohacking focused specifically on the brain. Neurohackers seek to better themselves or other by "Hacking the brain" to improve reflexes, in studying the faster diagnosis and the treatment for psychological disorders. However, herbal supplements have been used to increase brain function for hundreds of years. Simple uses of neurohacking include the use of chemical supplements to increase brain function. This technique will enable us to develop advanced instruments in collaboration with artificial intelligence which could help in the study of various psychological disorders with the help of bio-chemicals.

Key words: bio- hacking, neuro hacking, bio- chemical markers, psychological disorders

PP-MIC 002

APPLICATIONS OF BIOSTATISTICS IN PHARMACY

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The current poster discusses the applications of biostatistics in pharmacy. Biostatistics is defined as the methodical collection, tabulation, presentation, analysis and interpretation of quantitative data or facts through the use of statistical techniques. The usage of biostatistics is spread through different fields from nursing, health, midwifery, physical therapy, medical technology, dentistry, biology, microbiology to many others. It is said to be the tool of all the health sciences. A hypothesis defines statements which may or may not be true. It gives a brief explanation bout peoples, objects, and events etc. T-test is any statistical hypothesis test in which test statistics follows a student's t-distribution under the null hypothesis.chi²test is non-parametric tests are those which do not involve any parameters such as mean, variance. Chi² test is defined as the quantity used to describe the magnitude of discrepancy or difference between observed and expected frequencies. It is also known as distribution free test. ANOVA (analysis of variance) is a collection of powerful statistical models and their associated techniques.

Keywords: T-test, null hypothesis, ANOVA, Chi²test.

PP-MIC 003

ARTIFICIAL INTELLIGENCE IN PHARMACY

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Artificial Intelligence simplifies tasks by making machines learn from past experiences, mapping efforts and actions to results, identifying errors, correcting them, adjusting to new and random input values, and effortlessly performing human-like tasks through in-depth scenario analysis. AI simplifies work by analyzing, filtering, sorting, predicting, scoping, and determining large data volumes to follow the best implementation procedures for producing an optimal solution. The major pharmaceutical industry applications of AI as of 2019 are; Discovery and development of new drugs; AI is helping big pharma create cures for complex and rare diseases such as Alzheimer's and Parkinson, Drug-Adherence and Dosage; Using AI to make sense of clinical data and to produce better analytics; Finding more reliable patients faster for clinical trials; Introducing automated robot pharmacies to fill prescriptions and dispensing; and marketing. A large number of researchers are being carried out to improve the current available AI technology to make the pharmacy profession more efficient. Artificial Intelligence can cut costs down, create new, effective treatments and above all else, help save lives. This article reviews exhaustively the present status and future prospects of Artificial Intelligence in pharmaceutical sciences with specific attention to pharmaceutical industry. In conclusion, the future lies in cooperation between humans and machines, and alongside technological advances, human clinical experts will need to adapt, learn and grow. Although potential experts will have to be both medical and technology experts, it is evolution of medicine, not extinction.

PP-MIC 004

PROSPECT OF HAIR DYES CAUSING CANCER – A FOCUS ON RISKS

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Many people use hair dyes , Which can contain different types of chemicals .Studies have looked at hair dyes a possible risk factor for various types of cancers .There are three main types of dyes :Permanent, Semi Permanent , Temporary permanent hair dyes which make up about 80% of currently marketed hair dyes products use colourless dye intermediate and dye couplers .In the presence of hydrogen peroxide , The intermediate and couplers react with one another to form pigment molecules .Darken colours are formed by using higher concentration of intermediates .Semi permanent and temporary hair dyes do not involve such chemical reactions instead they include colour compounds that stain hair directly .Some of the chemicals in hair dye products have been reported to be carcinogenic .These include aromatic amines which were used as dye intermediate in early permanent hair dye formulations

KEY WORDS: Hair dye, cancer, permanent dye

PP-MIC 005

AUTO-BREWERY SYNDROME

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Auto-brewery syndrome or gut fermentation syndrome is a condition in which ethanol is produced through endogenous fermentation by fungi or bacteria in the gastrointestinal system, oral cavity, or urinary system. Patients with auto-brewery syndrome present with many of the signs and symptoms of alcohol intoxication while denying an intake of alcohol and often report a high-sugar, high-carbohydrate diet. The production of endogenous ethanol occurs in minute quantities as part of normal digestion, but when fermenting yeast or bacteria become pathogenic, extreme blood alcohol levels may result. Auto-brewery syndrome is more prevalent in patients with co-morbidities such as diabetes, obesity, and Crohn disease but can occur in otherwise healthy individuals. Several strains of fermenting yeasts and rare bacteria are identified as pathogens. While auto-brewery syndrome is rarely diagnosed, it is probably under diagnosed. Even rarer are two cases of auto-brewery syndrome identified, one in the oral cavity and one in the urinary bladder.

PP-MIC 006

DRUG DEVELOPMENT AND DISCOVERY

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Drug discovery is a process which aims at identifying a compound therapeutically curing and treating disease. This process involves the identification of candidates, synthesis, characterization, validation, optimization, screening and assay for the therapeutic efficacy . Once a compound has shown its significance in these investigations it will initiate the process of drug development earlier to clinical trials. New drug development process must continue through several stages in order to make a medicine that is safe, effective, and has approved all regulatory requirements. Overall theme is that the process is sufficiently long, complex and expensive that many biological targets must be considered for every new medicine ultimately approved for clinical use and new research tools may be needed to investigate each new target from initial discovery to marketable medicine. It is a long challenging task. It takes about 12-15 years from discovery to the approved medicine and requires an investment of about US $ 1 Billion. On an average, a million molecules are
screened but only a single is explored in late stage clinical trials and finally made obtainable for patients.

Keywords: safety, monitoring, clinical trials, optimization, identification.

PP-MIC 007

SPINAL MUSCULAR ATROPHY (SMA)

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Spinal Muscular Atrophy is rally caused genetically disorder associated with SMN1(Survival motor neuron) gene &SMN2 gene. This SMN 1 gene encodes a protein which is necessary for survival of motor neuron. In this case the person who is suffering with SMA there is an point mutation in the gene of chromosome number 5 location at 5q13, where alternative splicing takes at intron6 to exon8. So that the signaling from brain to site of action will stop and leads to death of motor neuron in the anterior horn of spinal cord and brain .Therefore due to motor neuron death, leads decreased contractile Activity this leads to denervation of muscle and finally this leads to muscle atrophy .
Medications:

- Nusinersen (spinraza)
- Onasemnogene Aberpparvovec (Zolgensma)
- Risdiplam (Evrysdi)

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G. PULLA REDDY COLLEGE OF PHARMACY
HYDERABAD

CAMPUS PLACEMENTS - 2021-22

The following companies have visited the college for the campus recruitment and selected students of B. Pharm & M. Pharm, during June 2021 to May 2022.

Casper Pharma
Criterion Edge
e-Health technologies
Docs Valley
Techmahindra
Techsol
Clarivate Analytics
GD Research Centre
Indian Immunologicals

Number of Companies conducted campus interviews: 09
Number of students selected through Placement cell: 13
Number of students selected for Internship Program: 05 (All M. Pharm)
Package range per annum: Rs. 2, 20,000 –5,00,000/-