Exploring Emerging Techniques in Plant Sciences

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Chapter 18

Applications of Industrially Important Enzymes

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ABSTRACT

Enzymes as industrial biocatalysts offer numerous advantages over traditional chemical and biological processes with respect to sustainability and process efficiency. Although enzyme catalysis has been scaled up for commercial processes in the pharmaceutical, food, and beverage industries, further improvements in stability and biocatalyst functionality are needed for optimal biocatalytic processes in the energy sector for biofuel production and natural gas conversion. Because of the technical challenges associated with the implementation of immobilised enzymes, a multidisciplinary approach is required for the development of immobilised biocatalysts, suitable for such industrial-scale processes. New biotechnology advancements, particularly in protein engineering, have provided critical techniques for the effective development of new enzymes. This has resulted in the development of enzymes with improved properties for established practical applications, as well as the development of new enzymes tailored to entirely new areas. This chapter deals with most important enzymatic preparations, as well as their most recent applications.

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INTRODUCTION

Enzymes are usually obtained from microorganisms, animals, or plants. Microbial sources have specific uses because they can easily be expanded into large colonies and can be stored in vats prior to isolation. Filtration, centrifugation, chromatography, and more commonly, bio-magnetic separations are both used to separate and purify enzymes. Large-scale bio-magnetic separation is a relatively new development in the field. Modern bio-magnetic separation racks, which have a uniform magnetic force across the working volume, are a significant improvement over conventional setups, allowing the technique to be scaled up for large production volumes. Process validation relies on in-batch accuracy to ensure that goods are trustworthy and secure to consume.

It was quickly realized that by introduction enzymes into biological processes, the rate of the reaction is enhanced and the production process could be completed in a fraction of the time, at a lower temperature and pressure, and with less expensive raw materials. The enzyme industry is constantly on the lookout for sustainable processes that are enable higher yields while improving efficiency and dynamic nature. From lactose-free dairy products to fast-acting laundry detergents though innovation is critical development is improved and cost-effective end-products like textiles, foods, detergents, animals, biofuels, and other industries. However, there are other applications that we have not included in the table, such as therapeutic and specialty enzymes, which are not required in bulk but must be free of other enzyme activities.

Enzymes are lucrative in business and are used in the production of a variety of industrial products. Enzymes are proteins that aid in the speeding up of reactions and enhance the yield by manufacturing useful precursors by subsequent reactions. The production of cheese, bread, and alcohol are perhaps the most apparent uses for enzymes in commercial enterprise. Enzymes are a part of the microorganism machinery in those ancient packets, such as bacterium or yeast. Scientists have been able to isolate certain enzymes and gain a sufficient understanding of their chemical exchange roles in order to incorporate them with or without their microorganism hosts into a wide range of truly surprising conditions. Textiles, detergents, biofuels, and pharmaceutical products such as all useful enzymes. These programmes require large amounts of preferred enzymes, which must be available in the purest form possible. The purity of enzymes in the pharmaceutical industry is essentially important for programmes where the products, as

well as the process are subjected to regulatory review and management. In the market, batches of enzymes go through routine technique validation to ensure batch-to-batch consistency. Enzymes are used in a various industries, including detergent, prescription drugs, starch production and so on.

Protease

Protease (also known as peptidase or proteinase) is an enzyme that catalyses (enhances the process) of breaking down of proteins into smaller polypeptides or single amino acids. Hydrolysis, a reaction in which H_2O splits into bonds, is used to cleave the peptide bonds within proteins. Proteases are involved in a various biological process such as digestion of ingested proteins, protease production, and protease degradation.

Enzymatic function and mechanism

Proteases hydrolyze are the peptidic linkages in proteins, making them the most effective form of enzyme in food processing. Proteases are used in a wide range of sectors which includ food science and technology, pharmaceuticals, and detergent production etc. In 1998 Rao *et al.,* suggested proteases are widely distributed in nature and plays an important role in biological processes. Plant-derived proteases are not used widely in industry Aehle (2004), although certain cysteine proteases (CPs) such as papain, bromelain, and ficin are still in use in a variety of processing industries.

Proteases are enzymes that break down long protein chains into smaller pieces by breaking the peptide bonds that bind amino acid residues. Some exopeptidases (such as aminopeptidases and carboxypeptidase A) remove the terminal amino acids protein chain's, while others attack off protein's internal peptide bonds for example endopeptidases, like trypsin, chymotrypsin, pepsin, papain, elastase etc.

Proteases, are also called peptidases or proteinases, these enzymes perform proteolysis. This proteolysis is one of the most significant biological reactions, proteolytic activity has been attributed to protease a class of enzymes, these enzymes are wide distribution and they perform notable biological processes. Proteases also perform these reactions by numerous different mechanisms and classes with completely different catalytic reactions. These proteases are present in animals, plants, bacteria and viruses, these involved in protein processing, regulate the function of the proteins apoptosis, viral pathogenesis, digestion, photosynthesis, and various other vital functions. These mechanism of

action classifies them as either serine, cysteine or threonine proteases (amino-terminal nucleophile hydrolases), or as aspartic, metallo and glutamic proteases (glutamic proteases being the only subtype not found in mammals so far).

Functions of Proteases

Proteases are involved in many functions of human biology, for example, in small intestine, it digest dietary proteins and absorb amino acids, other processes include blood coagulation, immune function, maturation of pro-hormones, bone formation, programmed cell decay and the recycling of cellular proteins that which are no way useful, the proteases also offer in many therapeutic settings such as Alzheimer's disease, cancer, and viral infections MMP-9, a matrix metallopeptidase, it plays a crucial role in angiogenesis and cancer, due to their significance in the field of pathology, proteases are a relevant drug target. In biology the activates are central to diverse physiological cascades, some are essential for coagulation of blood in human beings while others contribute to cancer pathology.

Protease refers to a group of enzymes and their function is to catalise, hydrolyze peptide bonds. They are also called proteolytic enzymes or proteinases, these differ in their ability to hydrolyze various peptide bonds. The functions of proteases was believed to be limited to digestive purposes, extracellular modeling or remodeling of tissues.

Proteases are not merely restricted to digestive purposes and remodeling of extracellular matrix and tissues, but are also key factors for the induction of physiological immune responses. This induction can be direct, through the degradation of pathogens within phagolysosomes, or indirect, through the activation of key pattern recognition receptors (PRRs), such as toll-like receptors (TLRs). Unfortunately, excess production of proteases leads to maladaptive host response and excess tissue inflammation and damage.

Serine proteases

Serine proteases (or serine endopeptidases) are enzymes that cleave peptide bonds of proteins, with serine serving as the active site's nucleophilic amino acid. They are found in eukaryotes and prokaryotes alike Hedstrom (2002). Based on their structure serine proteases are classified as either chymotrypsin-like (trypsin-like) or subtilisin-like.The most extensively studied group of proteolytic enzymes comprises the

serine proteases. As indicated by the name each member of this group have a reactive seryl amino acid residue in its active site. The serine proteases are divided into two families: the trypsins and the subtilisins, the trypsin family is the largest among others, the chymotrypsin, elastase, mast cell tryptase, and many of the factors regulatae blood coagulation and fibrinolysis. Which are trypsin type of enzymes have high similar amino acid content, are found in vertebrates, and other animals, as well as in the fungi and procaryotic cells. In contrast, the subtilisins are found in bacteria. According to the type of amino acid that occurs at the preferred cleavage site the members of the trypsin family are classified.

The three amino acids serine (Ser), aspartic acid (Asp) and histidine (His), of functional importance at the active sites are arranged in the same geometry and the proteolytic mechanisms are very similar.This fact may lead to the suggestion that the arrangement of the three catalytically active amino acids at the active sites are very efficient for hydrolysis of peptide bonds. Mammalian serine proteases are usually synthesized as inactive proenzymes and zymogens with a single peptide chain. Activation happens when the zymogen is cleaved at one or several specific sites, generally such cleavage is accomplished by the action of another protease, serine proteases contain two functional distinct parts.

The region where the catalytically active amino acids are found is very similar in trypsin, chymotrypsin as well as in the serine proteases which involved in blood coagulation. The other region is located in the exterior parts of the enzyme. This region is of considerable size in serine proteases regulating blood coagulation, fibrinolysis and other four types of structures can be distinguished like kringle domains, growth factor domains, vitamin K dependent carboxylated calcium binding domains and domains homologous to the finger structure of fibronectin.

In the living organism, proteolytic enzymes (proteases) are secreted to modify and degrade proteins. Main task for proteolytic enzymes is to degrade proteins into peptides or amino acids to be used either as an energy source or as building blocks for resynthesis of proteins. Furthermore, proteolytic enzymes covert cellular environments and control cell migration in connection with wound repair, cancer, ovulation and implantation of the fertilized egg, embryonic morphogenesis, and involution of mammary glands after lactation. The other important functions of the proteases is their role as regulatory in inflammation

processes, infection and blood clotting. Majority of proteolytic enzymes are highly specific for their substrates. The classification of proteases, is based on their mechanism of action but not of substrate.The four different groups of proteolytic enzymes are generally distinguished, named after the active site amino acid residue and for the catalytic activity. The aspartic proteases is pepsin, the cystein proteases are cathepsin B and cathepsin H, the serine proteases are trypsin, thrombin and plasmin. The metalloproteases are collagenases and gelatinases, the members of each group of proteolytic enzymes have very diverse biological functions, the amino acid analysis shows a high degree of structural similarity between them.

Cysteine Proteases

Cysteine proteases, also called thiol proteases, these are protein degrading enzymes. A nucleophilic cysteine thiol in a catalytic triad or dyad is present in all of these proteases' catalytic mechanisms. Papaya, pineapple, fig, and kiwifruit are examples of fruits that contain cysteine proteases. The unripe fruit contain higher quantity of protease is higher. Many of the plant families contain large number of latices of Cysteine proteases as an ingredient Domsalla and Melzig (2008).

Proteins are destroyed in the lysosomal system by a spontaneously combined by restricted action of several proteases. A variety of different hydrolases, for example proteases, amylases, lipases and nucleases are used to maintain the degradation of biomacromolecules within the lysosomes.

Threonine proteases

The active site of threonine proteases contains a threonine (Thr) residue. The catalytic subunits of the proteasome are the prototype members of this class of enzymes, but acyltransferases have convergently evolved the same active site geometry and its mechanism.

Threonine proteases are a type of protease with a threonine (Thr) residue in the active site. It is control by proteasome, which is a massive protein-degrading apparatus. Primary amines cause the activation of threonine proteases. When the N-terminus of pre-proteins (aminoacids) the catalytic beta subunit are cleaved off and they become active, as a result, threonine becomes N-terminal residue.

Aspartic proteases

Aspartic proteases are one type of catalytic protease enzyme that catalyses peptide substrates by an activated water molecule bound to one or more aspartate residues in the active site, they have two strongly conserved aspartates and are most robust when the pH is acidic.

Pepsins, cathepsins and renins are eukaryotic aspartic proteases. Due to ancestral replication, they have a two-domain structures, retroviral and retrotransposon proteases (retroviral aspartyl proteases) are far smaller than eukaryotic aspartyl proteases and they share a common domain. With an extended active site cleft located between the two lobes of the molecule, each domain contributes a catalytic aspartic residue. A gene duplication occurr in the distant past likely separated one lobe from the other. Though the three-dimensional structures of modern enzymes are very similar, the amino acid sequences are more divergent, with the exception of the catalytic site motif, which is highly conserved, the other conserved characteristics of aspartic peptidases include the presence and location of disulfide bridges.

Glutamic proteases

Glutamic proteases are proteolytic enzymes that have a glutamic acid residue in their active site. This form of protease was first identified in 2004 and it was the sixth catalytic type of protease to be discovered Fujinaga *et al.* (2004).

Members of this protease family were previously thought to be aspartate proteases, but structural analysis revealed that they belong to a new protease family. Scytalidoglutamic peptidase was the first structure of this form of protease, with a catalytic dyad of glutamic acid (E) and glutamine (Q) in the active site, hence the name eqolisin. This protease family is mainly found in pathogenic fungi that affect both plants and humans Oda K (2012).

Metalloproteases

A metalloproteinase are also known as a metalloprotease, is a protease enzyme with a metal catalytic mechanism. The majority of metalloproteases need zinc but a few require cobalt. Three ligands are used to connect the metal ion to the protein, histidine, glutamate, aspartate, lysine, and arginine are some of the ligands that coordinate the metal ions.

Asparagine peptide lyases

Based on the catalytic residue proteases or proteolytic enzymes or peptidases, or proteinases are divided into seven classes. Asparagine peptide lyase is one of the seven groups. The asparagine peptide lyases' catalytic mechanism involves an asparagine residue acting as a nucleophile in a nucleophilic removal reaction rather than hydrolysis to catalyse the breaking of a peptide bond.

The crystal structure of the self-cleaving precursor of the Tsh autotransporter from *E. coli* demonstrated the presence of this seventh catalytic class of proteases, in which peptide bond cleavage occurs by self-processing rather than hydrolysis.

Applications

Proteases are one of the most common classes of enzymes in both industry and academia, accounting for roughly 65 percent of the annual enzyme market Prakasham *et al.* (2005). They have a long history of use in the food and detergent industries, where alkaline proteases account for the majority of the global enzyme demand Gupta and Khare (2007). The most common use of alkaline protease is as detergent ingredient. They are also used in the leather industry, medical diagnostics, silver recovery from X-rays, the food and feed industry.

Detergent industry

Alkaline proteases played a significant role in the production and advancement of industrial detergents. These detergents work well in a different pH values and temperaturs, making them ideal for industrial cleaning. Proteases, lipases, cellulases, and amylases are some of the enzymes used in the laundry industry Kobayashi et al. (1998). In high pH settings, these proteases aid in the removal of stains such as blood, egg, and gravy. Biotechnologists have encountered many challenges while using proteases, one of the most significant of which is compatibility with other detergents. In the presence of such stabilisers such as $CaCl_2$ and glycine, alkaline proteases from *Bacillus cereus, Bacillus pumilus strain CBS, Streptomyces* sp. *strain AB1, Bacillus licheniformis, Aspergillus flavus, Aspergillus niger, Bacillus brevis,* and *Bacillus subtilis* AG-1 showed excellent detergent compatibility Abou Elela *et al.* (2011). Subtilisins involved in thermo stability and chelator resistance can withstand high alkalinity and chelator concentrations, when used in detergents to avoid activity loss, alkaliphilic *Bacillus* strains were used to isolate oxidatively stable serine protease Sundus et al. (2016).

Leather industry

Proteases are important in the tannery's treatment of raw leather. Part of the soaking process the removal of blood stains, dung and dirt from hides, as well as certain structural improvements, the use of alkaline serine proteases is the most effective in leather treatment. At the soaking point, alkaline proteases are essential for solubilizing albumin and globulin, opening up contracted fibrous proteins, and washing dirt and excess fat. The lime-sulfide process is a traditional method for depilation of sodium sulphide and hydrated lime. This process is not in use in this century due to the massive release of toxic chemicals substances in this procedure.

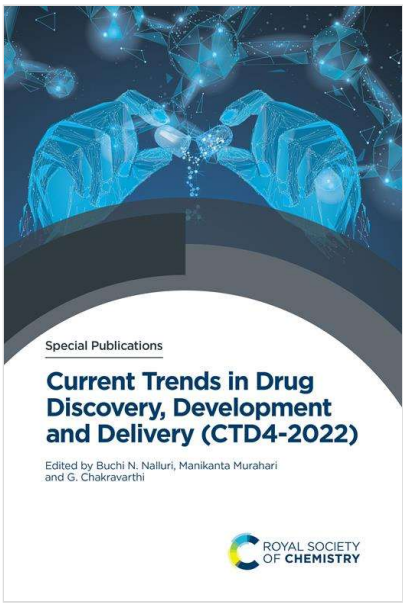
Proteases, which are mostly gererated by bacteria are stable in an alkaline environment, have become increasingly popular for depilation and skin opening. At pH 10-14, these proteases can be used with alkalies like lime and sodium carbonate, as well as reducing agents like sulphides or mercaptans. The treatment will last anywhere from 6 to 24 hours, depending on the quality of the finished product. Enzymatically assisted dehairing processes improve the surface area of the leather and make cleaning and dying easier. Proteases with a high pH activity can more easily penetrate the skin. Bacillus subtilis developed keratinolytic proteases that replaced sodium sulphide in the leather industry's dehairing process. Bating has traditionally been an enzymatic process involving pancreatic enzyme preparations containing trypsin. In recent years it is microbial proteases have largely been replaced by the use of trypsin due to their low cost. The finished leather's quality is largely determined by the bating efficiency. Collagen protein is primarily found in leather shavings and dust created during the finishing and preparation of end goods. Collagenases and oligo peptidases can be used to break it down into amino acids and oligo peptidases Kadler (1993).

Chemical industry

The applications involving biocatalysis in non-aqueous medium for peptide synthesis, high stability in the presence of organic solvents is a feature that is highly desired. Because of their organic solvent stability, alkaline proteases from *Aspergillus flavus, Bacillus pseudofirmus* SVB1, and *Pseudomonas aeruginosa* PseA have shown promising results for peptide synthesis capacity.

Medical uses

The Immobilized alkaline proteases isolated from *Bacillus subtilis* are used in ointment formulations, non-woven tissues, soft gel



SPECIAL PUBLICATIONS

Current Trends in Drug Discovery, Development and Delivery (CTD4-2022)

Edited by Manikanta Murahari; Buchi N Nalluri; G Chakravarthi

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This publication is based on peer-reviewed manuscripts from the 2022 Conference on Current Trends in Drug Discovery, Development and Delivery (CTD4-2022) held at KL University, India. Providing a wide range of up to date topics on the latest advancements in drug design and discovery technologies, this book ensures the reader receives a good understanding of the scope of the field. Aimed at scientists, students, regulators, academics and consultants throughout the world, this book is an ideal resource for anyone interested in the state of the art in drug design and discovery.

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Protective Effect of *Psidium guajava* L. Stem Bark on Aspirin Plus Pylorus Ligation-Induced Gastric Ulcers in Rats

By A. Anka Rao ; G. Jemimah ; M. Sreekanth

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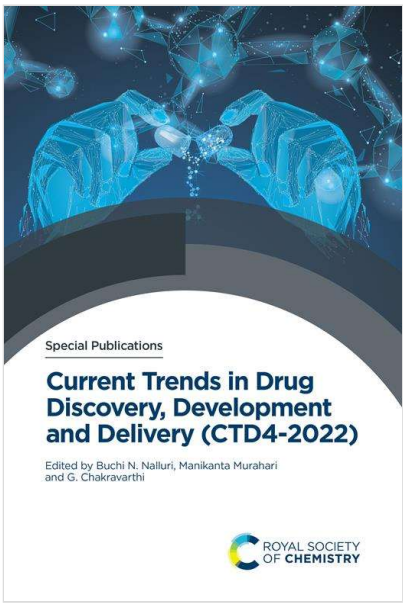
Peptic ulcer is a problem worldwide and its prevalence is quite high in India. Several field studies from different parts of the country suggests its occurrence in 3-10 per thousand population. The present study was intended to evaluate the protective effect of ethanol extract of *Psidium guajava* L. stem bark on aspirin plus pylorus ligation-induced gastric ulcers in rats. The ability of *Psidium guajava* L. stem bark to provide gastric protection was studied at two different oral doses, 200 and 400 mg/kg body weight. Omeprazole (20 mg/kg, p.o.) was used as a standard in the present study. The protective effect was assessed by determining and comparing the gastric volume, pH, free, total and bound acidity; ulcer number and its inhibition, ulcer severity, ulcer index and its protection, and gastric lesion. The ethanolic extract of *Psidium guajava* L. stem bark showed significant ($p<0.01$) reduction in gastric volume, free acidity, ulcer index as compared to control. The results obtained in the present study indicated that the *Psidium guajava* L. stem bark has a protective action against gastric ulcers.



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In Silico Admet Prediction and Molecular Docking Studies in the Design of New Therapeutic Agents Targeting PIM 1 Kinase

By S. Muni Sireesha ; A. Sejal Mudiraj ; A. Varmini ; A. Pallavi ; Afirin Farahana ; T. Saritha Jyostna

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Cancer is a crucial reason for death in almost all emerging nations. Huge anti-cancer agents were recognized are still requiring progress in enduring rates and eminence for cancer-affected life. PIM1 belongs to the serine/threonine kinase family, and has been recognized as a distinct target in oncogenesis. The role of PIM 1 is denotable in survival, cellular senescence, cell cycle regulation, drug resistance, and apoptosis and it appears as a probable biomarker in many human malignancies. Today numerous stimulating inhibitors for PIM1 are expanded and few were withdrawn from clinical trials of phase1 and 2, due to the absence of toxicity and bioavailability. Henceforth the determination of the current work is to invent more effective and to minimize lethal compounds. A sequence of novel 2-oxindoles with dithiocarbamates were outlined as PIM1 inhibitors. All the compounds molecular properties were predicted using softwares like Swiss ADME, Molinspiration, Molsoft and pkCSM that are essential for drug candidate. Additionally, in order to perceive the binding affinity of designed molecules with PIM1 kinase protein and to explain their anticancer activity, molecular docking study was accomplished. Outcomes revealed that all the designed molecules satisfied the drug likeliness and bioavailability conditions with low toxicity. All twenty molecules were docked into the PIM1 kinase active site using AutoDock Vina. The results declared that compounds 16 and 18 exhibit better binding energy values, which are commensurable with formerly reported compounds AZ1208 and SGI1776. This study supports the scholars to get a finer drug for cancer treatment.

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Formulation, Characterization and *In Vitro* Evaluation of Telmisartan Microspheres by Solvent Evaporation Method

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Abstract: **The use of prolonged drug release can help prevent patients from experiencing repeated dosing. For the study, we focused on developing a new and safe formulation of the drug Telmisartan for treating high blood pressure and other condition.We formulated the microspheres using ethyl cellulose as polymerwith emulsification solvent evaporation method. The results of the FTIR tests revealed that the excipients and the drug did not interact. Then evaluated in various ways, such as *in vitro* drug release and SEM. Studies conducted on the microspheres revealed that they were spherical in shape, and the SEM images showed that the particles ranged in size from 120.5 to 243.6 µm. We also noted that the drug's efficiency was at the range of 44 to 84.21%. In addition, the *in vitro* release profiles of the microspheres showed that they were able to release the drug continuously for 12 hours.**

Keywords: **FTIR,Microspheres, Scanning Electron Microscopy, Telmisartan, Solvent evaporation.**

I. INTRODUCTION:

A short half-life of a drug can be very challenging to remove from the gastrointestinal tract and prevent blood transmission. This issue can be solved by developing an oral sustained release formulation [1,2,3]. This method allows the drug to be released steadily into the GI tract and maintain a high concentration of the drug in the serum for a long time[4]. One of the most common methods for delivering drugs is through a microparticulate delivery system. This type of drug delivery involves the use of spherical particles that are usually around a thousandth of a micro meter in size[5]. For instance, the drug Telmisartan is an angiotensin II receptor antagonist that can be used to treat hypertension. Commonly used to treat high blood pressure and heart failure, the drug Telmisartan can also be used to treat diabetes and kidney disease.

ARBs such as telmisartan can bind to the angiotensin II receptor type 1 and prevent its action on the vascular smooth muscle. This can result in a reduction in blood pressure[6,7]. The other effects of this drug include an increase in water and sodium excretion and a decrease in aldosterone production. Due to its ability to reduce blood pressure, microspheres of telmisartan have been developed to provide a longer duration of action. This helps reduce the dosing frequency.

II. MATERIALS AND METHOD:

A. Materials:

Telmisartan was obtained as a gift sample from Suraksha labs Hyderabad; Ethyl cellulose was procured from NR CHEM Mumbai, hydrochloric acid and chloroform were procured from SD Fine Chemicals Ltd Mumbai, sodium carboxy methyl cellulose was procured from LOBA CHEMIE PVT LTD Mumbai.

B. Method:

Preparation of Telmisartan microspheres: The required excipients and drug were acquired. The excipients were then added to the solution. The mixture was thoroughly mixed. An organic phase was then added to the solution, which included a 1% sodium CMC. The solution was stirred at 600 rpm until the organic solvent

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NITIKA

Theme:
"Access to Quality and Affordable Medical Products"

Pfizer

आज़ादी का अमृत महोत्सव

SCIENTIFIC ABSTRACTS

THEME: ACCESS TO QUALITY AND AFFORDABLE MEDICAL PRODUCTS

Organised By
THE INDIAN PHARMACEUTICAL CONGRESS ASSOCIATION

Hosted By
The Indian Hospital Pharmacists Association

In Association with
Department of Pharmaceutical Sciences
Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur

Venue: Department of Pharmaceutical Sciences, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur

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72nd Indian Pharmaceutical Congress 2023

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For any querry please contact on- 9923299918

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Shubham Ghatole	Novel approach for enhancing permeation and sustainability of drug release using ciprofloxacin hydrochloride loaded chitosan nanoparticle gel for improved treatment of acne vulgaris

Rashmi G. Khope	Recent advances in the development of nasal in-situ gelling drug delivery system for the treatment of migraine
Sheelpriya Walde	Formulation and evaluation of herbal hand wash gel of ethanolic extract containing essential oil of cinnamomum zeylanicum bark extract
Divya Prashant Nasare	Virtual screening, computational molecular docking, and adme prediction of some reduced schiff base compounds containing benzoxazole derivatives as a promising antibacterial agent
Prithivirajan.S	Formulation and evaluation of kungiliya parpam ointment for wound healing activity
Anuja Bhande	Preparation and evaluation of herbal hair oil
Gayatri Bholaram Sonkusare	In-silico studies and adme prediction of some novel derivatives of 2-(1h-benzimidazole-2-yl) aniline for its antioxidant activity.
Gouri Dixit	Solubility enhancement by hot melt extrusion using hydrophilic polymer
Niharika Bandi	Impact of zinc supplementation in tuberculosis patients
Shivraj V. Mane	Formulation development and characterization of melatonin based higher spf herbal sunscreen formulation
Shital D. Tiple	Induced-fit molecular docking studies of some novel 2-(1,3-dioxoisoindolin-2-yl) acetic acid derivatives as emerging anti-cancer agents
Shalini Ulhas Rathod	Recent advance in oral delivery of biologics:nanomedicine and physical modes of delivery
Raj Katariya	Agmatine mitigates behavioural abnormalities and neurochemical dysregulation associated with 3-nitropropionic acid induced huntington's disease in rats
Mohammed Talha Akef, Murkute Vikas Shrid	Formulation and evaluation of colon targeted drug delivery system using polysaccharide from aegle marmelos
Harsha Sonaye	Optimization of process parameters for the plant-based synthesis of silver nanoparticles using plackett- burman and 3- level box- behnken design
Rushika Jaiswal	Development and validation of uv-spectrophotometric methods for simultaneous estimation of chlorzoxazone and tramadol in laboratory mixture.
Mangesh D. Godbole	Formulation and optimization of naratriptan hcl bioadhesive nasal in situ gel for the effective treatment of migraine
Shaik Sadik	Synthesis and characterization of silver nanoparticles of kaempferol and their application as an antibacterial and against prostate cancer cells (pc-3)
Vaibhav Maturkar	Histamine h1 and h2 receptor antagonism attenuated the post traumatic stress-induced anxiety-
Gourishetti Apoorva	In vitro pancreatic lipase,alpha-amylase and alpha-glucosidase inhibitory activities of the phytochemical barbaloin
Manjusha Sudhakarrao Doke	Design and development of liposomes containing ferric pyrophosphate by qbd approach
Alka Moje	Pharmacy students perception towards pharmaceutical advertising and promotion with special reference to digital marketing
Yashmi Agwina Xavier	Designing and evaluation of microneedles for the treatment of melasma (hyperpigmentation) using 23 factorial design
Shweta Kulapurath Somanath	Stable essential phospholipids solution for iv injection

Yogita Manohar Charde	Enzymatic disruption of biofilm formation to reduce antibacterial resistance: a review
Deepali Vikas Chaudhary	Formulation, development and evaluation of antidiarrhoeal tablets of racecadotril for pediatric use
Muskan Manoj Vhora	Can fdaâ€™s new kasa tool improve the quality assessment of regulatory drug applications?
Surbhi Rai	Regulatory control over chewable gel and current challenges
Akshay Suresh Mhaiskar	Formulation and evaluation of polyherbal hair oil
Kajal Jagdish Bhede	Formulation and development of omega fatty acid nutraceutical beads
Sarita Anadeo Ukey	Preparation and characterization of mesoporous slilica nanoparticles/nanocarriers containing quercetin for nose to brain drug delivery
Aparna Barange	Revitalising apple serum: it's a way to survive with beauty and health
Himanshi Pramod Nimje	New approaches for targeting to treat tuberculosis
Ashwini D. Uparikar	Rational drug therapy as emerging trend
Swarangi P Udamale	Formulation and evaluation of herbal face pack for acne-prone skin and dull skin
Srajal Saxena	Quality by design approaches for the optimization of oral disintegrating film
Apurva Deshmukh	Formulation and evaluation of orodispersible tablets for paediatric patients.
Pallavi Wadaskar	Liposomes containing azithromycin and green tea as an anti-acne treatment: formulation and characterization
Santosh Sarate	Nanostructured lipid carriers (nlc): a novel approach for transdermal drug delivery system.
Sujata C. Raut Wankhede	Research on development and validation of rp-hplc method for simultaneous estimation and validation of montelukast sodium and rupatadine fumarate
Chetna R.Pardhi	In-silico characterization, admet prediction, and molecular docking studies of withania somnifera (ashwagandha) phytochemicals for the evaluation of cns stimulant activity
Prasanthi Thayi	Development and validation of bio-analytical method for the simultaneous estimation of metformin, vildagliptin and remogliflozin in rabbit plasma by using rp-hplc
Pratiksha Purushottam Varhade	Herbal drugs used on parkinson disease
Himanshu Bankar	A lumpy skin disease virus: a review
Tejashree Deokule	!!Heterocycles as a dwimmer for diabetes!!
Suvarna P Phadtare	Preclinical studies of novel ophthalmic gel for treating keratoconjunctivitis sicca
Dolly	Formulation and evaluation of nisoldipine sublingual tablets using superdisintegrants
Vaishali P. Wasnik	A review: precision medicine - a new era for pharmacy field and new chanllange for pharmacist
Bhawana Rajaram Sonawane	Design and characterization of lipid based freeze dried quercetin nanosuspension with improved bioavailability

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Ghanashyam Arun Girnar	Optimization and evaluation of lacosamide mucoadhesive nanoemulsion for nose to brain drug delivery.
Tejashree W. Idhole	Development and characterization of polymeric nanopartical of cress mucilage containing lornoxicam
Samra Kahn	Formulation and evaluation of micellar gel loaded with azithromycin
Sagar Sudhakar Sanap	Formulation and in-vitro evaluation of mucoadhesive buccal tablet.
Prashant Patankar	Herbal foot deodorizing spray
Chitrakala Rajesh Shahu	The consumer protection act: now and then
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Dipti C. Pirwani	Topical antiseptic film forming liquid for skin injury
Amol Khandu More	Evaluation of naringenin in alcohol withdrawal induced anxiety
Ashwini N Wagh	Prophylactic role of bryophyllum pinnatum against sodium oxalate (naox) induced urolithiasis in rats
Ponnala Pallavi	Clinical assessment of anti hypertensive drugs in pregnancy induced hypertension
Nitin Raosaheb Kale	Hypoglycemic activity of combined dried powder of andrographis paniculata whole plant and gymnema sylvestre leaves in experimental rat model
Omprakash Dubey	Correlation between stress and metabolic syndrome: a systematic review
Pankaja D. Ingle	Evaluation of vitamins and stability study for medical cosmetics.
Sudha R	Phytochemical constituents, antioxidants potential of hydro alcoholic extract of medovrddhi drugs
Malik Kainat	Development of new spectrofluorimetric method for the estimation of domperidone maleate in tablet dosage form
Hari Singh Rathore	Evolving and vital role of clinical pharmacist in india in chronic diabetes: evidence and prevalence report
Pratiksha Kaikade	Formulation & evaluation of grds using amoxycillin trihydrate
Shruti Dhande	Formulation and evaluation of film forming gel of fluconazole
Vishal Ratan Gajbhiye	To study the effect of physical constants on nucleation rate, crystal habit and pharmaceutical utilities of some active pharmaceutical ingredient
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Yogita Ravindra Mohinkar	Formulation and evaluation of solid dispersion based orodispersible tablet
Pranay Lokhande	Enhancement of solubility of anti-diabetic poorly water-soluble drug using solid dispersion technique
Mohammad Sameer Ansari	Formulation and characterization of solid lipid nanoparticle of felodipine by using quality by design approach
Kunika Champanerkar	Design and qbd based development of orodispersible tablet comprising co-crystallized anti-migraine drug

Prism Diak Chimane	Renoprotective assessment of ficus religiosa in devitalising of diabetic nephropathy in rats
Patro Sonali Bhimsenbhai	Evolution of adverse drug reaction in patients during warfarin therapy
A.Shailaja	Evaluating anti-oxidant, anti-diabetic capabilities of morus alba, extracts to target diabetic cardiomyopathy based on inflammatory mechanistic events.
Sunil Sidramayya Mathapati	Diuretic effects of leaf extracts of wedelia chinensis (osbeck) merill in rats
Mrs Ekta Thakor	Mycobacterial atp synthase: an imminent target to overcome drug resistance against anti tubercular drugs
Shrushti Pramod Dhakare	Role of herbal bio-enhancers in cancer therapy
Akshay. Suresh. Mhaiskar	Formulation and evaluation of polyherbal hair oil
Ashish Sahu	Formulation development and evaluation of triphala churna hard candy lozenges
Nilesh Ganpat Dumbre	Low level quantification of potential genotoxic impurity in daclatasvir dihydrochloride by rp-hplc method.
Shinde Namrata Narsingrao	Gsk-3 beta inhibitor : an emerging anti-alzheimer's agent with its insilico scaffold and virtual screening
Tushar Phalke	Management of osteoarthritis and rheumatoid arthritis through diclofenac sodium along with herbal drugs
Suraj Tulshiram Landge	Solubility enhancement of ketoprofen drug by preparing lipids based formulation
Minal Y. Chaudhari	To study the role of relaxin 3 in neurodegenerative disease and its relation in psychological disturbances using experimental animals.
Madhumitha V	A prospective observational study on evaluation of cisplatin induced cardiotoxicity in cervical cancer patients
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Neesha Solanky K	Severe thrombocytopenia from treatment with oseltamivir for viral fever â€“ a case study
Kankanala Pravanith Reddy	Is serum fipbrinogen a biomarker for copd severity
S.Dhivya Bharathi	Therapeutic drug monitoring of 5 â€“ fluorouracil in head and neck cancer patients - a pharmacokinetic based efficacy and toxicity assessment
Kanchan Kohale	Overview of teratogenesis: mechanism and effects at the site of action
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Ranjana A. Gaude	Development and evaluation of a chronomodulated drug delivery system for nocturnal asthma
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Sushma Desai	A brief review on familirizing polymer applications in pharmaceutical & biomedical industries
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Abhishek Raj	A compiled study of a fungal infection 'mucormycosis' a serious health challenges in covid -19
Rakesh Rama Kondhari	Formulation development and evaluation of herbal gel by using a bryophyllum pinnatum leaf extract
Zia Latif Patel	Phytosome : an approach to deliver lawsonia inermis (henna) extract for antifungal activity: formulation and development
Shikha Srivastava	Designing and evaluation of targeted niosome for extenuating oxidative stress in rheumatod arthritis
Harsh Vasant Malkari	Formulation development and evaluation of herbal gel by using a bryophyllum pinnatum leaf extract
Aishi Chatterjee	Evalution of gel formulation of hydro alcoholic extract of paederia foetida leaves for burn wound healing activity against herbal standard
Nimmagadda Srinivas	a cross-sectional survey on mandatory generic prescribing and generic substitution for brand-name medicines in india
Pravallika Munagavalasa	Age group distribution among breast cancer patients at different stages
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Namrata Shailesh Khadake	Formulation, development, and characterisation of nanomicelles loaded with docetaxel for improved treatment of the breast cancer
Amit Sureshrao Sontakke	Anti-diabetic activity of novel polyherbal formulation in streptozotocin induced type 2 diabetic rats
Shailesh Kumar Pandey	A review on recent scenario on osmotic controlled drug delivery system
Nagendra Bhuwane	Metallic nanoparticles loaded in-situ gels for targeting bacterial biofilms: a novel strategies for the management of resistant bacterial keratitis
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Natasha Pathrabe	Formulation and evaluation of liposomes for the treatment of cervical cancer
Anupriya D'souza	Design and development of nanoparticles loaded in-situ gel for enhanced and sustained ophthalmic delivery
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Harshwardhan Bagal	Recent developments of chitosan based nanoparticles for biomedical and biotechnological applications
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Marka Shiva Rama Krishna	A prospective observational study on polypharmacy led inappropriate medication in geriatrics using stopp/start criteria
Adiba Vazirkha Pathan	Transdermal patches for the treatment of angina pectoris: an effective drug delivery systemi.
Rani Shantilal Dhole	Design and development of niosomes for solubility enhancement of poorly soluble drug
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Dhanashri Wabale	Solubility enhancement of nevirapine using b cyclodextrin nanosponges
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Payal Lanje	Access to quality and affordability of medical products
Asawari Bhadange	Superfast synthesis of biogenic silver nanoparticles (agnps) loaded with annona squamosa
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Ramya.K	Development and invitro evaluation of phytosomes of ellagic acid
Swapnay Sherekar	An ayurvedic formulation of psoralea corylifolia linn (bakuchi taila) of different dosage forms for its anti-microbial potential
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Shraddha Prabhu Vairagade	Behavioural modulating studies of thuja occidentalis leaf extracts for memory enhancing in streptozotocin induced alzheimerâ€™s model.
S. Sanjay	Role of cucurbitacins for the treatment of cancer
Aachal Prkash Mendhe	Linear maze apparatus: new improved preclinical model for assessment of anxiety
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Nikita Prabhudayal Pal	Formulation and evaluation of proliposomal gel for acne vulgaris
Homraj Sahu	Awareness of causes & prevention of mouth cancer
Aniruddha Patil	Ocular drug delivery system
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Jayesh Charde	Review: clinical study to evaluate bioequivalence of ammonium locate lotion in patients with severe ichthyosis vulgaris
Chillakuru Varshitha	Effect of atorvastatin in covid-19 hospitalized patients with cvs comorbidities
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Dr. Shilpa Deshpande	Plumbagin and resveratrol alleviate experimentally induced anxiety like condition
E.Athulya Chandran	Evaluation of anthelmintic activity in leaves of pouteria campechiana using pheretima posthuma
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Vishal P. Kakde	study and design of 1-(5-chloro-2-hydroyphenyl)-3-(3-methylphenyl)propane-1,3-dione derivatives as aromatase inhibitors
Lalit Gopaldas Rathi	Synthesis and evaluation of triazoloindole derivatives for the investigation of new cytotoxic agents
Subham Kumar Lenka	Development of a hydrodynamically balanced floating tablet of metronidazole
Somnath Vibhute	Mesoporous drug delivery system: an encouraging platform for cancer management
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Tanaya Kisan Kharat	Sun protection from green tea leaf extraction
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Sejal Pravin Ghyar	Addiction in women's and it's effect in neonates
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Bhumeshkumar E Wanjari	Formulation and evaluation of herbal lipstick from dragon fruit(selenicereus undatus)
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Ankit Kumar Malik	Synthesis and characterization of bimetallic au-ag nanoparticles for the potential treatment against antimicrobial resistance bacteria
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Keshav Shankar Hirave	Design, development and characterization of lentinan loaded novel ultra- deformable transferosomes for skin cancer

Rutuja Dinesh Pimpalkar	Formulation and evaluation of chewable multivitamin herbal tablet
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Sakshi Sangewar	Effect of blending process parameters and polymers on stability of tablets
Sinta Varghese	A review on complications of non-steroidal antiinflammatory drugs in geriatric patients at a tertiary care hospital
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Pavan Sanjeev Dange	Evaluation and quantitative analysis of metalloid using cocoglucoside surfactant
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Pradnya Sable	A comparative study on the synthesis of traditional medicinal agents by green chemistry.
Akshitha Jarathi	Impact of clinical biomarkers' screening in diabetic foot ulcer
Mayuri S. Wadhai	Ai in drug discovery: a review
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Rina Ikhar	Synthesis , charecterization, and anti inflammatory activity of the lornoxicam zinc complex
Sahil Nasirkhan Pathan	Cluster fig : composition,evaluation and analysis of cluster fig plant for anti acne property
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Srushti Ambulkar	Enhancement of pharmacokinetic properties of anticancer agents by curcumin - cyclodextrin
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Samiksha Ghansyam Khudare	Phytochemical testing, tlc and antimouth ulcer activityâ ofâ guajava.
Shradha K Take	Formulation and evaluation of a polyherbal ointment for its wound healing activity
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Shruti Sanjay Deshmukh	Personalized nutraceuticals: need of the hour
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Manish Anant Kamble	Determination of the dissociation constant, log p, and antimicrobial potential of some newly synthesized plant derived compounds.
Munija Pancheddula	Formulation and evaluation of acetohydroxamic acid raft forming tablet
Rucheera Verekar	Double-loaded liposomes encapsulating hesperetin in hydroxypropyl-?-cyclodextrin inclusion complexes: formulation, characterization, and evaluation
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Bairagoni Saipriya	Evaluation of cardioprotective effect of methanolic extract of cassia tora and its active constituent emodin on 5-fluorouracil induced cardiotoxicity in rats.
Dnyaneshwari Hemantrao Ghodkhande	Brief overview on herbal medicine used in the treatment of deep vein thrombosis

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Diksha Dinesh Meshram	In-silico virtual screening and adme prediction of some novel schiff base containing 1,2,4 triazole derivatives for its anti-inflammatory activity
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Narendrakumar D.	Development and validation of hplc method for hydroxychloroquine sulphate in a tablet

Suchita Dubey	Gokhru formulation for immunity booster
Asitya Kumar Sahoo,Md Aspak Ali	Health hazard for cosmetic products
Anshupa Patel Gupta	For your eyes only!
Ram Shivdas Gawande	Rauwolfia serpentina formulation for anti-depression
Salmaan Huzain	Assessment of prospective observational study on drug related problem at tertiary care hospital
Pooja Shantaram Bari	Stem cell transplantation:the lungs barrier
Ayusha Dondulkar	Polyphenols as multitarget modulators against diabetic wound healing: an in-silico perspective
Pallavi Chaudhari	Comprehensive study on pharmacognostic, physico and phytochemical evaluation of terminalia arjuna roxb. Stem bark
Rishita Sanjay Behaniya	Recent development of anticancer agents
Naveen Gupta	Comparative factorial design optimization of naproxen sodium niosomes and transethosome formulations
Omkar S Daware	Latest therapy and drug delivery methods on rheumatoid arthritis
Lisa Patel	Molecular design, synthesis and biological evaluation of novel cytotoxic target - pim1 kinase
Ajinkya Prakashrao Shinde	Orange on boon for the pharmaceutical industries
Nirupama Achariya	Development and evaluation of mucoadhesive buccal tablet of pioglitazone
Satya Swarup Pattanaik	Suppositories in drug delivery system: an unique approach
Abhinav Trivedi	Preparation of orodispersiblefilm of antidepressant agent
Bharti Sahu	Development and characterization of vesicular drug delivery system for topical delivery of anticancerous drug
Kiran Das	Mineral clays: their characteristics properties, novel application as medicine and in drug delivery systems.
Akash Sharma	Flaxseed buccal patch-a novel drug delivery for the treatment of aphthous ulcer
Dengale Abhishek Santosh	Formulation and evaluation of dextromethorphan chewable jelly
Avinash V Dhoble	Formulation, evaluation & comparison of sr matrix tablet of losartan potassium using natural polymerâ€™s
Balasubramanian Arul	Green synthesis and antiproliferative potential of silver nanoparticles of abutilon hirtum (lamp) sweet
Jagtap Chaitanya Ashok	Formulation and evaluation of natural preservative spray
Samiksha Parale	Formulation of hair oil from papaya seed extract
Dipti Atul Bonde	Review on recent approaches in solubility enhancement

Gauri Gopal Vishwakarma	To isolate starch from different wheat sample
Kalam Sirisha	Method development and validation of sparfloxacin and ofloxacin in tablet dosage forms by visible spectrophotometry
Rajeshwari H. Malode	Relationship between neuroinflammation and decrease neurogenesis and neuroplasticity associated with depression
Ujawala Kanthilalji Wasnik	Review of free radicals on human health and various diseases and phytomedicine: current status and future prospect.
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Uma Maheswari	Microbial biotransformation: an effective alternative to the conventional synthesus of compounds
J N Narendra Sharath Chandra	Rational selection of phytochemicals by molecular docking from selected herbs against sars â€“cov-2 main protease
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Porika Sunil	Development characterization mucoadhesive hemispheres of rosiglitazone maleate
Kiran Kanhole	Comparative study of herbal drug tulsi
Amol Basavraj Kore	Formulation development and evaluation of herbal gel by using a bryophyllum pinnatum leaf extract
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Vaibhav Raju Nandekar	Activated charcoal:- its application and properties
Patel Furqan Ahmed Shakil	Solubility enhancement of poorly water soluble drug glimepiride using microwave irradiation
Swati Dongre	Neutraceiticals
Namrata Kanwar	Â€œdevelopment and characterization of metronidazole loaded nano-emulsion using tea tree oil for vaginal candidiasisâ€•
Pranali Atul Belsare	Tetrapack juice preparation from tribulus terrestris fruit for diuretic action and urolithiasis
Glen George Panakal	Hereditary angioedema - a rare and disabling disorder
Ajay Kashinath Gondge	Role of pharmacist in healthcare
Anushree Hari	Evaluation of cutinaâ® hr as a carrier for solid lipid nanoparticles by employing poorly water-soluble drug quetiapine fumarate as a model drug
Chaudhari Piyush Premchand	Neuroplasticity and neurogenesis
Nushrat Jahan	Strategy for implementing quality culture in pharmaceutical organisation
Anupriya D'souza	Design and development of nanoparticles loaded in-situ gel for enhanced and sustained ophthalmic delivery
Diksha Dinesh	Molecular docking and adme prediction of some schiff base containing triazole derivatives for

Priya D Dule	Formulation and optimization of printed ketorolac oral films using qbd approach
Shrutika M. Kambhale	Formulation and evaluation of herbal sunscreen cream containing extract of butterfly pea flower
Prachi Bhujangrao Rode	Formulation and evaluation of novel combination containing polyherbs for polycystic ovarian syndrome (pcos)
Sathish Kumar. M	Chimeric antigen receptor â€“ car-t therapy
Satyendra Garg	In vitro comparative antibacterial activity of methanolic extracts of some traditional plant tinospora cordifolia, andrographis paniculata & ocimum americanum
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Shilpa Vinod Jaiswal	Different targets and preventative strategies for alzheimerâ€™s disease
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Nada Rino	Improved green synthesis of dihydropyrimidine derivatives using one pot biginelli reaction and their biological evaluation
Ms. Jayshree B.Naik	Molecular docking study of novel chalcone derivatives towards pdb: 1cx2
Putrevu Sreelaya	Development of sorafenib loaded hyaluronic acid coated chitosan nanoparticles
Lilima Baghel	Drug delivery assisted by liposomes: advances and challenges
Vishakha Nilkanth Giradkar	In-vitro dissolution study of rosuvastatine-quarcetine solid dispersion
Varda Sunil Joshi	Nano - particulate carrier system to enhanced oral bioavailability of low aqueous soluble drug
Lavanya.S	A case study on lymphedema of post-operative surgery in breast cancer patients
Shipali Gajanan Gowardipe	Formulation and evaluation of topical deliverty system for the tretment of athlete's foot.
Sachin Bhagwat Aglawe	Creating a capsule with an immediate release tablet and an extended release floating tablet to monitor metoprolol release
Parshad Panchal	Formulation of tinospora cordifolia as potent immunity booster
Monika Subhash Ambekar	Formulation development of atazanavir co-crystals using neat grinding technique:exploring it solid state characterization and in vivo performance
Devwati	Development and characterization of luteolin loaded niosome for wound healing
Mayur Gulab Kharat	Anthelmintic and antioxidant investigation of lantana camera
Kalyani Sanjay Shedmake	Virtual screening of coumarinyl chalcone as antimicrobial agent
Sakshi R. Agarkar	Strategic analysis of market potential of medical devices in india

D-358

PRELIMINARY IN VITRO ANTI-PSORIATIC ACTIVITY OF PPARγ AGONIST

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Psoriasis is an inflammatory condition that causes redness, scaling and painful lesions on skin. The aetiology of psoriasis is poorly understood but it mainly occurs due to over activation of immune cells. The systemic and topical medicines used in this disease mainly relieve the patient of symptoms and there is no permanent cure to this disease. Treg cells, specifically expressing the PPAR γ genes are involved in the suppressive control of the over expression of immune response and inflammation at any site. PPAR stimulation by any the PPAR γ agonist increases the Treg cell number and thus improve inflammatory condition. The main objective of this study is to evaluate the anti-psoriatic activity of the PPAR γ agonist. That was done by performing various in vitro assays like heat induced protein denaturation assays and hRBC membrane stabilisation assays. From the heat protein denaturation assays performed, it can be concluded that PPAR γ agonist has significantly more potent anti-inflammatory effect than the standard drug used. Furthermore the compound's effect on hRBC membrane was observed as hRBC membrane is analogous to cell membrane. That study proved that PPAR γ agonist has protective activity on cell. So, it can be said that PPAR γ agonist has anti-psoriatic activity, though further investigation needed to be carried out in animal model.

D-359

EFFICACY OF QUERCETIN ALONE AND ITS COMBINATION WITH DOCETAXEL ON PROGRESSION OF GASTRIC CANCER INDUCED BY N-METHYL-N-NITROSOUREA AND SATURATED SODIUM CHLORIDE IN RAT MODEL

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We reported here the efficacy of quercetin alone and its combination with docetaxel on progression of gastric cancer induced by N-Methyl-N-Nitrosourea (MNU) and Saturated NaCl in rat model. Six weeks old male wistar rats were used for the study and were randomly divided into 6 groups. Control fed with citrate buffer and 2nd group with 25mg/kg quercetin administered PO, daily from 6th week onwards up to 20th week. All other groups (3rd 4th, 5th and 6th group) are treated with 100mg/kg MNU on 0 and 14th day by intragastric intubation and first three days of every week treated with s-NaCl, for four weeks. 4th group treated with docetaxel, 10mg/kg/week (from 6th week up to 20th week), 5th group treated with docetaxel + quercetin and 6th group fed with only quercetin. The experiment was terminated and rats were sacrificed at the end of 20th week. At sacrifice, the mean tumor weights showed significant difference in all of the treated groups compared to the negative control ($p \leq 0.001$). The mean tumor weight showed significant difference between the group 5 in which quercetin combined with the docetaxel group compared to docetxel alone or quercetin alone ($p = 0.038$). Quercetin alone has shown efficacy and in combination with docetaxel showed synergistic effect in suppressing the tumor growth. It has also suppressed the hepatotoxicity induced by docetaxel. The results of the present study showed enhancement of docetaxel efficacy by quercetin in gastric cancer progression suggests the design of clinical trials for this regimen.

D-360

SMART NANODELIVERY SYSTEM FOR TREATMENT OF PATHOLOGICAL HYPOXIA

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Hypoxia is a physiological condition in which the tissues of the body are deprived of adequate amount of oxygen due to restricted blood supply or insufficient level of oxygen in the blood. Oxygen nanobubbles-ONBs are recently engineered nanomaterials which help elevating levels of oxygen in cells forming tumor and are thereby used in numerous treatments for cancer such chemotherapy , Photodynamic therapy, radio therapy etc. These treatments show best therapeutic effect when administered with ONBs in hypoxic patients. O2 carrying nanoparticles containing Hb: The antioxidative enzymes such as SOD, CAT, and GSH have a protective effect on Hb molecules. They prevent it from cell destruction during the circulation of blood in tumor tissues. The enzyme CAT catalyses H2O2 present in the TME to form oxygen and water. Hence providing relief to a hypoxic tumor. Some of the inorganic metal catalysts follow the same route eg: carbon oxide and manganese dioxide. O2 yielding nanoparticles: These NPs work on the principle of decomposition. i.e on reaching the TME H2O2 undergoes decomposition ultimately yielding oxygen. This method is also helpful as it prevents any possible intoxication caused due to oxygen. Nanoparticles regulating gene expression (HIF-1): HIF 1 significantly help the tumor cells adapt to confined oxygen supply thereby funding oxygen levels. Eg: GdW10 Nanosphere. The above mentioned Nanoengineered materials have been proven to be fundamentally useful in dissolving aggressive tumors caused by hypoxia. The developing era of nanoscience has significantly brought grace and delicacy to vulnerable diseases like cancer.

D-361

ADVERSE REACTION IN BLOOD TRANSFUSION: INTERVENTION OF CLINICAL PHARMACIST IN MONITORING ATR

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In the current study, the adverse transfusion reactions (ATRs) reported from both in-patients and out-patients of various departments were assessed and studied. This was a Prospective observational study conducted in tertiary care teaching hospital located in Elayampalayam for a period of 6 months. The adverse transfusion reactions were assessed for their causality using Imputability levels. A total of 14 ATRs were reported during the study period, out of which 8 ATRs were found in males (57.10%) and 6 in females (42.80%). According to age group, 4 ATRs were reported in 51-60 years (28.57%) followed by 3 ATRs each from 71-80 years (21.42%) and 81-90 years (21.42%). Fever (13.6%) was the most common reaction that was seen in almost 6 transfusions. The majority of ATRs were reported from the General medicine department (42.85%) with the blood group O + ve (64.28%). The patients who were transfused with packed cells showed most of the reactions (92.85%). According to the imputability levels, most of the reactions were evaluated as definite (56.25%), 4 ATRs seems probable (25%), 2 ATRs were possible (12.50%) and 1 ATR was doubtful (6.50%). This study suggests that there is a need for reporting the ATR from all the departments of the hospital. Like spontaneous ADR reporting system, ATR reporting system should also be considered equally important. Moreover, the patients should be counseled regarding the possible transfusion reactions and their role in effective reporting of the reactions. Since transfusion reactions are likely to happen even after several precautions, it is imperative to strengthen further the hemovigilance system for better outcome.

D-362

IRRATIONAL USE OF ANTIBIOTICS

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Antibiotics are considered as lifesaving drug but it's irrational use has became the major cause of resistance of many antibiotics from early childhood. It is seen that in most of the cases they have been prescribed though they are not really needed. The aim of our study is to minimize the use of antibiotics and use them is the condition they are really needed. The overuse and misuse of antibiotics is the major cause of increased resistance of bacteria to multiple antibiotics. This can be prevented by prohibiting the use of antibiotics cases like cough, runny nose, sore throat etc. And replacing them with other medications. Measures like completing the course prescribed by doctor, not stopping the use of antibiotics when symptoms are not seen can be taken to minimize the resistance. the Indian Council of Medical Research has issued guidelines against the use of antibiotics for condition like low grade fever and viral bronchitis while advising doctors to follow a timeline while prescribing it. A clinical diagnostic most often helps to predict causative pathogen fitting into a clinical syndrome which would tailor the correct Antibiotics. Antibiotics are the most important weapons of modern medicine but they are losing their therapeutic capacity due to the misuse. Many bacteria have become resistant to multiple antibiotics. The only way to reduce the increasing rate of antibiotic resistance is through proper use and reducing its misuse. There should be proper training program for doctors and parents regarding antibiotic resistance and it's severity.

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RH haemolytic disease of newborn . These treatment do not completely promise to the various negative effect of HDNB. The complication in new born due to HDNB severely high level of bilirubin with accompanying Jaundice, Anemia and Liver ment. There are numerous new technology which are into early stage of research and can be implemented to prevent the disease into maximum level in India. To avoid ication anti Rh D therapies are indicated. Phototherapy, exchange top up transfusion ous immunoglobulin (IVIG). These are some prenatal injection therapies. This review various future possible prenatal treatments that can be developed in pharma field to the chances of EBF. These includes (a) Insensitivity of placental cell receptor for IgG, (b) ew of mammary cells for antigen D in mother after first pregnancy, (c) The antigen D is during 7th week of trimester , so we can prevent the formation of antigen D so that born Rh-ve. The EBF is highly preventable when it is diagnosed at its early stages.

D-408

LUATION OF CARDIOPROTECTIVE EFFECT OF METHANOLIC EXTRACT OF SSIA TORA AND ITS ACTIVE CONSTITUENT EMODIN ON 5-FLUOROURACIL INDUCED CARDIOTOXICITY IN RATS.

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d Objectives: To investigate the cardioprotective effect of methanolic extract of C. tora odin against 5-FU induced cardiotoxicity in rats. Materials and Methods: Male Sprague- rats were divided into six groups. Emodin treatment group received (low dose g/day) & (high dose 20 mg/kg/day, i.p) for 14 days. Methanolic extract of C. tora ent group received (100mg/kg/day& 200mg/kg/day, orally) for 14 days. Cardiotoxicity in s induced by 5-FU administration (20 mg/kg/day, i.p.) at 24hr interval on 10th to 14th sults & Discussion: 5FU administration showed changes in ECG pattern, ST-segment sion. Increased serum levels of LDH, SGOT, SGPT, CK-MB, Cholesterol, TG & decreased dant defense system in heart, altered lipid profile in serum &heart (MDA &NO levels), se in relative heart to body weight &GSH, SOD levels. High dose Emodin group showed ant ($P < 0.01$) decrease in ALT, AST, Cholesterol, CK-MB, LDH, MDA, NO & increase in < 0.001), GSH ($P < 0.01$) levels. Low dose Emodin group showed significant ($P < 0.05$) se in ALT, AST & CK-MB ($P < 0.001$) and increase in GSH ($P < 0.01$), SOD ($P < 0.05$) Methanolic extract of C. tora (100mg/kg) group showed significant ($P < 0.05$) decrease , MDA, CK-MB ($P < 0.001$) & significant ($P < 0.05$) increase in SOD levels. 0mg/kg) methanolic extract showed significant ($P < 0.01$) decrease in AST, CK-MB, erol, TG, MDA ($P < 0.05$), LDH ($P < 0.05$) and increase in SOD, GSH ($P < 0.01$) levels. sion: The methanolic extract of C.tora & Emodin has significant effect on the protection eart against 5-FU induced cardiotoxicity.

D-409

BRIEF OVERVIEW ON HERBAL MEDICINE USED IN THE TREATMENT OF DEEP VEIN THROMBOSIS

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sin thrombosis (DVT) occurs when a blood clot forms in one or more deep veins usually it in the legs. When DVT breaks off and travels through the bloodstream to the lungs it pulmonary embolism. DVT and pulmonary embolism are together known as venous oembolism (VTE) which affects 1 per 1,000 people and contributes 60,000 to 100,000 Symptoms for DVT depends upon the location of thrombus if it occurs in the heart then ervable symptoms are chest pain, sweating, shortness of breath and pain in left arm. e to a vein from surgery or inflammation or due to infection can cause DVT. Overweight sity, atherosclerosis, atrial fibrillation, venous stasis, vascular injury and agulability favors thrombus formation and acts as risk factors for DVT. Blood clots can o the blood vessels in the limbs, lungs, brain, heart and kidney failure or pregnancy problems and operates as the complications for DVT. DVT can be diagnosed by aphy, MRI scan and angiography. To prevent DVT regular exercise is essential. agulation therapy is essential for the treatment of DVT. Warfarin is the vitamin-k ost used as thinner. In some selected cases direct oral anticoagulants (DOACs) are rmeric, ginger, garlic, vitamin E acts as herbal blood thinner can be used to reduce the ms for DVT.

D-410

BRIEF OVERVIEW ON TYPHOID FEVER

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Typhoid is cause by Salmonella typhi bacteria. Typhoid fever is rare in developed countries. It is a serious health threat in the developing world, especially for children. n each year almost 27 million or more person infected by the bacterial aspecialy children. It was found in India,Asia,South America. Fever (104f,40c) Headache, Weakness, Sweating, Diarrheoa, stomach pain are the symptoms of typhoid without treatment it becomes life threating disease. It shows lie motionless and exhaust with your half eyes closed,causes the most people in developed countries pick up thyphoid bacteria while they retraveling once they have been infected.They can spread it to others through the fecal oral route. It can pass through the infected person by the fever or urine infection. If the person cannot maintain the hygiene.In most people infection due to drinking of contamination water. Prevention of typhoid is wash hands, avoid drinking untreated water, avoid raw fruits and vegetables choose hot food. Commonly prescribed antibodies Ciprofloxacin, Azithromycin, cetriaxone etc. Drinking fluids help to prevent the dehydration result from prolonged fever and diarrhea.

D-411

PHARMACOVIGILANCE OF HERBAL DRUGS IN INDIA

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Formulations of herbal origin being broadly accepted therapeutic agents as antidiabetics, cough remedies etc. The recurrent myths regarding herbal medicines are that these medicines are completely safe, and can therefore be safely consumed by the patient on his/her own, without a physician's prescription. This result in extensive self-medication by people all over the world, often leading to disappointing end-results or side-effects. In India, a proper adverse drug reaction monitoring system was started in 1986 with 12 regional centers. In 1997, India became the member of WHO for International Drug watching, managed by the Uppsala Monitoring Centre, Sweden. Promoting safe use of drugs may be a priority of IPC that functions as the NCC for PVPI. The present study examines development, perspective, opportunities or interventions particularly or avertible adverse events which are able to facilitate in promoting safer use of herbal medications and improve the standard of patient care and educate to extend awareness. The "safe if natural" perception of herbal products may have several undesirable side effects. There is foremost need to raise awareness in public order to change this perceptivity and ensure safer use of herbal products. Therefore, currently this point has return to aware the general public too for the reporting the adverse drug reaction to nearest hospital or AMCs or to the health care professionals.

D-412

CONTRIBUTION OF YOGA IN PREVENTION OF RHEUMATOID ARTHRITIS

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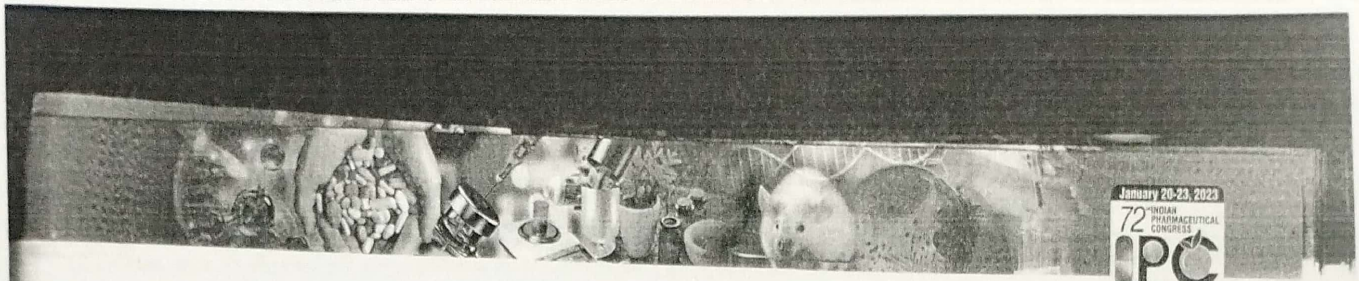
Rheumatoid Arthritis [RA] is T-Cell Mediated Chronic Inflammatory Autoimmune Disorder occurs when our immune system attacks its own body tissue in joints. Rheumatoid Arthritis affects 0.24 to 1% of population & most commonly seen in women. Joint pain, swelling, stiffness & tenderness, fatigue, fever are the symptoms of RA. Person with RA shows the presence of Anti-citrullinated protein antibodies [ACPA]& Rheumatoid Factor [RF]. What triggers RA is unknown, but it is believed to be caused by the combination of genetic & environmental factors & hormones. Risk factors of RA are family history, smoking & obesity. Cartilage protects joints & bones with the help of Synovial fluid. In RA this Synovial fluid gets affected which leads to destruction of bones &joints. Complications includes Osteoporosis, Lymphoma, Abnormal body Composition. ESR, CPR test, X-ray, MRI helps in diagnosing RA. Prevention includes avoidance of food which promotes Cytokines production, regular exercise & certain yoga asanas help in lowering joint swelling, tenderness (as per research conducted by Arthritis Foundation) and provides balance & flexibility to our body. Meditations & Relaxation also help to cope up with stress which may be trigger for disease flare up (based on one study in PLOS) Treatment for RA involves the use of NSAID's, DMARD's, TNF-inhibitor, & Surgery most commonly including- joint replacement, arthrodesis & Synovectomy remains as last options when drugs fail to relief the pain. Janus Kinase [JAK] inhibitors are the new drug treatment for the Rheumatoid Arthritis approved by FDA.



(RP-HPLC) was developed and validated for the determination of Vandetanib, also its major degradants were identified and characterized by Liquid Chromatography- Tandem Mass spectrophotometric method (LC-ESI-MS). Methods and Materials: This method was developed on Nucleosil 100-5, C18 (250 × 4.6 mm, 5μm) column by using Methanol: Ammonium acetate buffer as Mobile phase in the ratio, 90:10 v/v, having flow rate of 1 ml/min. The estimation was carried out at 249 nm. Further Vandetanib was subjected to various stress condition like acidic, alkali, oxidative, thermal and photolytic degradation. The degradation pathways for major degradants were identified. Results: The method was developed and validated for linearity, robustness, accuracy; precision, linear regression analysis data which indicates the good linear relationship, correlation coefficient was found 0.992 in the concentration range of 1-10 g/ml. In the stress results, the degradation of drug in alkaline, as well as acidic medium showed significantly. The product degradation was characterized by the LC-MS technique. Conclusion: The developed method was found to be rapid, sensitive, accurate, precise, and robust for the analysis of Vandetanib by which routine analysis of drugs can be done.

F-61

DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF SERRATIOPEPTIDASE AND ACECLOFENAC IN PHARMACEUTICAL DOSAGE FORM

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Reverse phase high performance liquid chromatography method has been developed and validated for simultaneous estimation of Aceclofenac and Serratiopeptidase in pharmaceutical dosage form. This method uses C18 Agilent column with 4.6 x 250 mm length and 5 m particle size of packing material. Mobile phase is methanol: 0.05% OPA (85:15 v/v) with 1 ml/min flow rate and 20 l volume injected. UV detection was carried out at 271 nm and the column temperature is 250C. The retention time of Serratiopeptidase was 2.820 min. and 6.682 min of Aceclofenac. The method is validated and calibration curve observed was linear in the concentration range of 3-15 g/ml for Serratiopeptidase and 20-100 g/ml for Aceclofenac. The method is validated for linearity, accuracy, precision, limit of detection and quantification, ruggedness and robustness.

F-62

COMPARATIVE STUDY OF CHEMOMETRIC ASSISTED UV AND RP-HPLC METHODS FOR QUANTIFICATION OF LORATADINE, PHENYLEPHRINE HYDROCHLORIDE AND PARACETAMOL IN THEIR COMBINED DOSAGE FORM

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In this work, chemometric assisted UV-Spectrophotometry and RP-HPLC methods were applied for the quantification of Loratadine, Paracetamol and Phenylephrine hydrochloride in their combined dosage form. UV-Spectrophotometric analysis was carried out by applying two chemometric models namely, Principal Component Regression and Partial Least Squares Regression. These two models were successfully validated and applied for resolving the complex UV-spectra in the wavelength range of 225-300 nm with a data interval of 5 nm. Chromatographic analysis was developed and optimized by using Central Composite Design (CCD), a type of response surface methodology. The CCD was applied to study the critical factors and their interactions with the responses. The identified critical factors were mobile phase pH in the range of 2.8-3.2, acetonitrile content in the range of 60-70%v/v and flow rate in the range of 0.6-0.8 mL/min and the responses affected by these factors were retention time of the 1st eluted drug (Rt1), retention time of the 3rd eluted drug (Rt3) and resolution between 1st and second eluted drugs (RS1,2). Derringer's desirability function was used for the optimization of the chromatographic method and the optimization was carried out using a mobile phase of phosphate buffer (pH 3.2) and acetonitrile in the ratio of 64 :36 using 0.7 ml/min flow rate at a detection wavelength of 275 nm. The developed methods showed good accuracy and precision for the quantification of drugs in their combined dosage form.

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PROCESS VALIDATION OF ORAL SOLID DOSAGE FORM: TABLET – AN OVERVIEW

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Establishing documented evidence which provides a high degree of assurance that a specific process for manufacturing of tablets will consistently produce a product meeting its pre-determined specifications and quality attributes. It mainly involves the steps to be followed to evaluate and qualify the acceptability of the manufacturing process of Tablets. The process is limited to the three batches manufactured of specific batch size with specified equipments and control parameters for Tablets. The results suggest providing documentary evidence that all the manufactured Tablets were evaluated as per specifications. The steps involved such as Blend uniformity results between 90% - 110%, compression assay results between 95%-105% were found within acceptable limits. Other tests related to compression such as hardness, thickness, disintegration, dissolution and for coatings such as weight gain, dissolution were found within acceptable limit. The process validation was carried out for the three batches. Which include the validation of critical steps of manufacturing. Such as dry mixing, blending, compression, coating and packing.

F-64

MULTIVARIATE UV-SPECTROPHOTOMETRIC METHODS FOR THE SIMULTANEOUS DETERMINATION OF SIMVASTATIN, RAMIPRIL, ATENOLOL, HYDROCHLOROTHIAZIDE AND ASPIRIN IN CAPSULE DOSAGE FORM

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The UV spectra of Simvastatin (SM), Ramipril (RM), Atenolol (AL), Hydrochlorothiazide (HT) and Aspirin (AS) showed severe overlapping in their UV range, which caused difficulty to analyze by conventional UV Spectrophotometric methods. In this aspect, most prominent chemometric models like Principal Component Regression (PCR) & Partial Least Squares Regression (PLS) were developed and applied to determine the drugs in the marketed formulation. The developed chemometric models, PCR and PLS for the simultaneous estimation of SM, RM, AL, HT and AS were optimized in the wavelength range of 220nm -320 nm with 1 nm data interval using 9 standard mixture solutions of drugs in the calibration range of 3-15 μg/mL of SM, 8-16 μg/mL of RM, 30-150 μg/mL of AL, 3-15 μg/mL of HT and 30-150 μg/mL of AS at the chosen optimal number of '7' PCs and '6' LVs. Statistical parameters like Correlation coefficient (R2), Root mean square error of Calibration (RMSEC) and Root mean square error of Prediction (RMSEP) were evaluated and both the developed models were found to be fit for the analysis. The assay results of all the drugs lie in the range of 90-110% w/w which are within the acceptable limits. However, from the overall results obtained, it was noticed that PLS model showed best results for the quantification of drugs in the dosage form than PCR model. Both the developed models can be used in regular analysis of SM, RM, AL, HT and AS in pharmaceutical dosage forms.

F-65

STABILITY INDICATING RP- HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF SALICYLIC ACID AND KETOCONAZOLE IN ANTI DANDRUFF SHAMPOO

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Aim: The main objective of present study is to develop a simple, accurate, precise, sensitive, selective, reproducible and rapid analytical technique for simultaneous estimation of Salicylic Acid and Ketoconazole, in anti- dandruff shampoo. Experimental: The method was developed and validated using Kromosil C-18, (250 x 4.5 mm, 5.) column. Acetonitrile and 0.01N Potassium phosphate buffer (adjusted to pH 5.4) in the ratio of 50: 50 % v/v is used as mobile phase. Detection wavelength was selected at 322 nm. Results: Retention time of Salicylic Acid and Ketoconazole were found to be 2.307 min and 3.342 min. The % assay of Salicylic Acid and Ketoconazole obtained was 99.02 and 99.51 % respectively. The method is linear in the concentration range of 5-30 μg/ml. The mean % Recovery was obtained was 99.09 to 99.46 % for Salicylic Acid and 99.14- 99.46 % for Ketoconazole. Robustness of the method was studied by making deliberate changes in flow rate, mobile phase ratio and column oven temperature, after making each change system suitability parameters were

not much affected. Conclusion: The proposed method for determining ketoconazole and Salicylic acid in shampoo was simple, fast, precise, robust, and accurate. The method was found specific for the drugs without having interference form the degradants. Method developed was simple and economical that can be adopted in regular Quality control laboratories.

F-66

A VALIDATED RP-HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF CLOBETASOL AND NADIFLOXACIN IN SEMI- SOLID DOSAGE FORM.

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Aim: To develop a simple, precise, accurate, robust and cost- effective method for the routine analysis of the Clobetasol and Nadifloxacin in semi solid dosage form using RP- HPLC. Experimental: The estimation was carried out on a Enable C-18 column (5μm, 250mm × 4.6mm i.d). Combination of Acetonitrile and 0.5% Potassium dihydrogen phosphate buffer (adjusted to pH-5 using Orthophosphoric acid) in the ratio of 70: 30 was used as mobile phase. The flow rate is set at 1.0ml/min. Results: Linearity for Clobetasol and Nadifloxacin was in the range of 10-100μg/ml. The mean recoveries obtained for Clobetasol and Nadifloxacin were found to be 99.2 to 100.3 % and 99.7 to 100.3 % respectively. Robustness was studied by making deliberate changes in mobile phase composition, detection wavelength, and flow rate, it was found that the % RSD of both the drugs were within the acceptance limit. Specificity of the method is established by conducting forced degradation studies which shows that the method is specific for the estimation of both the drugs without having any interferences with the retention time of the drugs. Conclusion: The proposed method for determining Clobetasol and Nadifloxacin in creams was simple, fast, precise, robust, and accurate. Sample recoveries from the formulation were in good accord with the label claim, suggesting no excipient interference. Linearity, precision, accuracy, and robustness were validated following ICH criteria.

F-67

DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR SIMULTANEOUS ESTIMATION NEBIVOLOL HCL AND TELMISARTAN IN API AND ITS PHARMACEUTICAL FORMULATION

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Analytical techniques hold the key to the design, development, standardization and quality control of medical products. In the present research work a modest attempt has been made to develop validated analytical methods for the determination of single or combined dosage form. Research had done to developed simple, rapid and sensitive, stable and highly effective RP-HPLC method for determination of Nebivolol HCl and Telmisartan, to validate methods as per ICH Guidelines. The method employs Agilent C18 (250x 4.6nm 3μm particle size) column for the chromatographic separationand methanol and orthophosphoric acid (80:20) pH 7 was used as a mobile phase. separation was completed within 10 min with flow rate of 0.7ml/min and detection was at 286nm. The retention time of NebivololHCl and Telmisartan was found to be 3.00min and 5.46min respectively. The proposed method was found to have the linearity in the concentration range of 10-50μg/ml for both drugs.Linearity regression coefficient was found to be 0.999the value of % RSD are less than 2% indicating accuracy and precision of the method. The method was found to have suitable application in routine laboratory analysis with high degree of accuracy and precision.

F-68

ASSAY METHOD DEVELOPMENT AND VALIDATION OF IAMIVUDINE IN ITS FORMULATION BY HPLC

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The Present Study describe to develop and validate a assay method and Lamivudine in its formulation by using a (HPLC) method . Lamivudine is a nucleoside reverse transcriptase inhibitor that is widely used for the treatment of HIV-1 infection in combination with other antiretrovirals. It is a highly effective agent that can be dosed once or twice daily due to its long intracellular half- life. High performance liquid chromatographic (HPLC) method for the assay of 100- mg Lamivudine tablets. The chromatographic conditions of the method employ a Phenomenex C-08-04 (5um).150x4.60mm column, isocratic elution with (pH 3.0) : ACN: phosphate buffer (65:35 % v/v) as the mobile phase at a flow rate of 1.5 ml/min, a 20 µl injection volume, and Detection Wavelength is 274nm. The active was analyzed at ambient column temperature, using peak area responses.

F-69

EFFECTIVE ESTIMATION OF RILPIVIRINE HCL BY ANALYTICAL METHOD IN SOILD DISPERSION AND ITS IN-VITRO DISSOLUTION ASSESSMENT

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Rilpivirine Hydrochloride (RPV) is a non-nucleoside reverse transcriptase inhibitor (NNRTI). It is indicated for the treatment of HIV-1 infection. The objective of the present investigation is to improve the dissolution rate and solubility of RPV, a poorly water-soluble drug by solid dispersion technique using a water soluble carrier beta-cyclodextrin. The approaches described are Kneading and Microwave Irradiation Methods using beta-cyclodextins as carrier. To evaluate the solubility and invitro drug release of solid dispersions by UV Spectroscopy and HPLC Spectroscopy is the aim for this study. The dispersions were evaluated for various parameters such as solubility study, dissolution study and Fourier transform infrared spectroscopy (FT-IR). Solid Dispersions were prepared with various concentrations of carrier, the prepared solid dispersions were examined for drug release profile. Drug and beta-cyclodextrin showed good result in the ratio 1:3 in Microwave Irradiation Solid Dispersion method.

F-70

DEVELOPMENT AND VALIDATION OF HPTLC METHOD FOR SIMULTANEOUS ESTIMATION OF RUTIN AND QUERCETIN IN HYDROALCOHOLIC EXTRACT OF TRIPHALA CHURNA

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The present research work aims to develop and validate HPTLC method for markers in herbal extract of Triphala Churna. HPTLC procedure was optimized with view to quantify the herbal extract using precoated silica gel 60G- F254 plates. Different mobile phases were tried to develop method and a suitable mobile phase as ethyl acetate, formic acid , acetic acid, water in ratio of (10:1.1:1.1:0.6 v/v) was optimized. Well defined spot were obtained using Linomat 5 applicator on precoated silica gel 60G- F254 plates which were visualized under UV light at 254 nm without derivatization. CTS 4 version software was used for densitometric scanning. The identity of rutin and quercetin were confirmed by comparing chromatogram of standard rutin and quercetin with that of extract and by comparing retention factor of reference with standard. The retention factors of rutin and quercetin were 0.01 and 0.76 respectively. Linearity was obtained in the range of 200-600 ng for quercetin and rutin. Methods were validated according to ICH guidelines and can be adopted for the routine analysis of rutin and quercetin in hydroalcoholic extract of Triphala churna. Satisfactory recoveries of 99.60% and 98.61□100.56 % were obtained for Rutin and Quercetin. The results obtained validation assays indicate the accuracy and reliability of the developed simultaneous HPTLC method for the quantification of both markers. A new simple, precise, rapid and selective HPTLC method has been developed for the simultaneous determination of rutin and quercetin Ayurvedic formulations Triphala churna.

F-71

DEVELOPMENT AND VALIDATION OF STABILITY INDICATING RP-HPLC ASSAY METHOD FOR ESTIMATION OF BROMOCRIPTINE MESYLATE

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The current study deal with the degradation behaviour of Bromocriptine Mesylate and degradation kinetics of a drug in solution state. The study design involves selection of stability indicating RP-HPLC method for estimation of drug then evaluation of degradation kinetics, shelf life determination and validation of proposed method. The Shimadzu- HPLC series was used for stress degradation analysis of Bromocriptine Mesylate in tablet dosage form. The analysis was performed using Agilent ZORBAX SB-C8 (4.6×150×5um) column and Acetonitrile : Methanol in the ratio of 95:5 as mobile phase; wavelength selected for analysis was 300nm with the flow rate of 1mL/min at which drug showed sharp peak. The proposed method was found to be linear over the range 5 to 30 ug/mL. . The results indicate that Bromocriptine Mesylate was most stable in alkaline and at lower temperature conditions. The proposed method was found to be accurate, precise, robust and successfully applied

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ANALYTICAL METHOD FOR CERITINIB ESTIMATION: A REVIEW

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ALK positive (anaplastic lymphoma kinase positive, or ALK+) lung cancers occur in 1 out of 25 non-small-cell lung cancer patient (NSCLC – the most common type of lung cancer). The ALK mutation is a genetic alteration of lung cells' DNA that causes these cells to grow abnormally and ultimately behave as cancer cell. As these cancer cells begin to grow in lung they can potentially spread to other parts of body. Ceritinib is a novel, oral, highly potent, and selective second generation ALK inhibitor with a greater preclinical antitumor potency than crizotinib. It has been approved by the United State Food and Drug Administration (FDA) for the treatment of patients with ALK positive locally advanced or metastatic NSCLC who have progressed on or are intolerant to crizotinib. This article accentuates various analytical methods viz. HPLC, spectro-photometric, and LC-MS for the estimation of ceritinib in pharmaceutical formulations and in biological matrices.

F-78

ENHANCEMENT OF ANTIFUNGAL POTENTIAL & EFFICACY OF DRUG THROUGH LIPOSOMAL DRUG DELIVERY SYSTEM

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Occurrence of skin fungal infections is increasing nowadays, although, a large number of antifungal agents are available for treatment of skin fungal infections but their toxic profile and physicochemical characteristics reduce therapeutic outcome. The conventional topical options suffer from limitations and are compromised with respect to patient compliance, safety, and efficacy of therapy. Hence, liposomal vesicular topical delivery system could be a better alternative for skin fungal infections. Eberconazole nitrate (EBZ) is an imidazole derivative used topically in the treatment of superficial fungal infections against a wide range of pathogens including Candida spp., Malassezia spp., dermatophytes, and gram-positive bacteria. The present investigation aimed at enhancing the antifungal potential of eberconazole through liposomal drug delivery system. Topical formulation of EBZ 1% w/w liposomal gel was thus formulated & studied for various parameters. Liposomes formulated by ethanol injection method were characterized for morphology, Entrapment efficiency, Particle size, TEM, Zeta Potential & in vitro drug release. Liposomal gel was formulated using Carbopol-950. Animal study on albino rats showed significant efficacy of liposomal gel against cutaneous candidiasis in comparison to control group animals. The optimized formulation (F4) showed, particle size (0.468μm), drug entrapment efficiency (90%), percent drug released (68%), zeta potential(-12.4mV) and showed good antifungal activity in albino rats. Thus formulated EBZ 1% w/w liposomal gel can be promising formulation for treating fungal infections.

F-79

DESIGN FORMULATION,OPTIMIZATIONANDEVALUATION OF MUCOADHESIVE MICROSPHERES OF CAPTOPRIL

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Aim & Objectives: to formulate and evaluate mucoadhesive captopril mucoadhesive microspheres to improve absorption, bio availability and to improve patient compliance and to also to enhance gastric retention time.Method: Ionic gelation method was used for the study. Captopril mucoadhesive microspheres formulated with extended retention in the upper gastro intestinal tract to improve absorption. The microspheres were formulated using the ionic gelation method. A study using FTIR demonstrates the compatibility of Captopril with other excipients. A variety of sodium alginate and captopril ratios nine formulations MM1 to MM9 formulated. Investigations were done effect of polymer concentration on the drug release profile was investigated. Response surface methodology was applied to systemically optimize the drug formulation. Polymer concentration and stirring speed were selected as independent variables. Drug entrapment efficiency, Particle size and in vitro drug release were selected as dependent variables. The optimized formulation (MM10) showed drug showed Entrapment efficiency82.17%, Particle size 401.03μm and Cumulative percent drug release 96.13%.Key words: Captopril, mucoadhesive microspheres,ionic gelation method, design expert,response surface methodology.

F-80

CHEMOMETRIC ASSISTED UV SPECTROPHOTOMETRIC METHOD FOR QUANTIFICATION OF EMTRICITABINE AND TENOFOVIR DISOPROXIL FUMARATE

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The objective of this study was to check the capability of UV spectrophotometric method for the simultaneous determination of Emtricitabine and Tenofovir Disoproxil Fumarate in tablet dosage form by Principal Component Regression(PCR) and Partial Least Squares(PLS) multivariate calibration methods. A double beam UV spectrophotometer (Jasco V-730) with 1cm quartz cell with 1nm data interval and scanning speed of 400nm/min was used in the study. The optimized wavelength range selected was 225-275 nm. The data obtained was processed using Unscrambler X (10.5)(64bit) software. The developed models showed good results over the concentration range of 6-36 μg/ml for Tenofovir Disoproxil Fumarate and 4-24 μg/ml for Emtricitabine with co-relation coefficient greater than 0.995 and %RSD less than 2%. The accuracy studies show % recovery within limits. The method was validated as per ICH Q2(R1) guideline.

F-81

DEVELOPMENT OF NEW SPECTROFLUORIMETRIC METHOD FOR THE ESTIMATION OF DOMPERIDONE MALEATE IN TABLET DOSAGE FORM

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Introduction: Domperidone is a peripheral dopamine (D2 and D3) receptor antagonist. It is used as an antiemetic to treat nausea and vomiting. Its maleate salt is used in tablet dosage form. Objective: A new spectrofluorimetric method for domperidone maleate in tablet dosage form has been developed and validated for Linearity, Accuracy, Precision, LOD and LOQ according to ICH guidelines. Methodology: Domperidone maleate standard stock solution was prepared in methanol and further dilutions were done in water. The excitation and emission wavelengths were found to be 282nm and 380nm respectively. Results & discussion: The method was found to be linear over the concentration range of 20ng/ml to 60ng/ml, with a correlation coefficient of 0.993. Intra-assay and intermediate precision were performed and the method was found to be precise with % RSD < 2. The mean recovery obtained was 99 %, which indicates that the method is accurate. The limit of detection (LOD) was found to be 3ng/ml and the limit of quantification (LOQ) was found to be 10ng/ml. Conclusion: The new spectrofluorimetric method was found to be linear, precise, accurate and sensitive. The details pertaining to the work shall be discussed during the presentation.

F-82

METHOD DEVELOPMENT, VALIDATION AND FORCED DEGRADATION STUDY OF PHARMACEUTICAL DOSAGE FORM BY SIMULTANEOUS ESTIMATION OF EMPAGLIFLOZIN & LINAGLIPTIN

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The RP-HPLC method was developed for simultaneous determination of Empagliflozin and Linagliptin in combinations as the pharmaceutical dosage form. Chromatographic separation was achieved on a THERMO® C18 (250mmx4.6mm, 5 μm) column applying an isocratic elution based on potassium dihydrogen phosphate buffer pH (3.4) - methanol (70:30) as mobile phase. Linearity, accuracy, and precision were found to be acceptable over the concentration ranges of 50-150 μg/ml for Empagliflozin and Linagliptin, respectively. All the variables were studied to optimize the chromatographic conditions. The optimized method was validated and proved to be suitable for the quality control of the mentioned drugs in their different pharmaceutical dosage forms, according to ICH guidelines. The developed method was found to be fairly precise, rapid and economical for simultaneous estimation of Empagliflozin and Linagliptin when compared with the reported method.

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propylene glycol (PG), and malonic acid (MA). DRV is a protease inhibitor (PI) designed to treat human immunodeficiency virus (HIV-1) infection, but its therapeutic activity is limited by its low water solubility. The solubility and pH measurement of a total of 20 different NDESs preparations were assessed. The ChCl: PG (1:3) combination had the best solubility of DRV (17.76 ± 0.36 mg/mL) among the many NDESs tested, and a pH was found that was slightly acidic in nature. A crystalline transition in DRV in NDESs was discovered via motic digital microscopy and differential scanning calorimetry. The kind of the molecular interaction revealed by the selected NDESs-DRV preparation was also examined using FT-IR and 1H NMR. According to in vitro dissolving studies, DRV presented in NDESs disintegrated at a rate that was faster (89.58 %) than pure DRV (33.38 %). Overall, the results of our research indicate that NDES are excellent candidates for use as dissolution promoters in the creation of new and more efficient drug delivery systems.

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STABILITY INDICATING RP- HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF TEZACAFTOR AND EVACAFTOR IN TABLET DOSAGE FORM

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Aim: To develop a simple, accurate, precise method was developed for the simultaneous estimation of the Ivacaftor and Tezacaftor in Tablet dosage form. Methodology: Chromatography was run through Zodiacil C18 (150 x 4.6 mm, 3.5m) column. Mobile phase containing 0.01N KH2PO4 and Acetonitrile taken in the ratio 55:45 was pumped through column at a flow rate of 1.0 ml/min. Temperature was maintained at 30°C. Optimized wavelength selected was 292.0 nm. Results: Retention time of Ivacaftor and Tezacaftor were found to be 2.269 min and 3.164 min. %RSD of the Ivacaftor and Tezacaftor were and found to be 0.5 and 1.0 respectively. %Recovery was obtained as 100.14% and 100.07% for Ivacaftor and Tezacaftor respectively. LOD, LOQ values obtained from regression equations of Ivacaftor and Tezacaftor were 0.56, 1.71 μg/ml and 0.07, 0.11 μg/ml respectively. Regression equation of Ivacaftor is y = 14394x + 3350, and y = 6134.x + 432.1. for Tezacaftor. Conclusion: Retention times were decreased and that run time was decreased, so the method developed was simple and economical that can be adopted in regular Quality control test in Industries.

F-180

STABILITY INDICATING RP-HPLC METHOD DEVELOPMENT AND VALIDATION OF FOR ESTIMATION OF BILASTINE AND MONTELUKAST SODIUM IN PHARMACEUTICAL DOSAGE FORMS

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Aim: A simple, rapid, precise and highly selective Spectrophotometric method was developed for simultaneous estimation of Montelukast sodium and Bilastine in tablet dosage form. Experimental: The chromatographic separation was achieved on reverse phase BDS Hypersil C18 column (250 ×4.6 mm, 5μ). The drugs are freely soluble in Methanol. The mobile phase consists of mixture of 10 mM phosphate buffer and Acetonitrile. The pH adjusted to 4 using 1% Orthophosphoric acid. The flow rate was 1ml/min and the effluents were monitored at the detection wavelength of 250nm. Results: Linearity was observed in the concentration range of 6-24μg/ml for Bilastine and 4-24μg/ml for Montelukast sodium. The accuracy of the method was confirmed by recovery studies of tablet dosage forms and was found to be 98.33% and 98.5%for Bilastine and Montelukast sodium respectively. Conclusion:Thus the proposed method was found to be rapid, specific; precise, accurate and cost effective quality control tool for the routine analysis of Montelukast sodium and Bilastine in bulk and combined dosage form. The retention times of Montelukast sodium and Bilastine were found to be 6.7 and 3.6 min respectively. The method was validated for the linearity, accuracy, precision.

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METHOD DEVELOPMENT AND VALIDATION FOR QUANTIFICATION OF APIXABAN IN HUMAN PLASMA USING LC-MS/MS.

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Background: Therapeutic dose of apixaban results in nanogram level plasma concentrations. Therefore, a validated method for the estimation of Apixaban in biological matrices like human plasma for pharmacokinetic (PK) study is essential. Objective:The objective of the current study was to develop and validate a highly sensitive method with the lowest possible sample volumes, so that the same method can be used for any area wherever human plasma is used for analysis. Methodology: Isocratic program conditions were optimized with the composition of phase A ranging from 50 to 20% out of which 20% phase A and 80% phase B gave optimal results at a flow rate of 0.50 ml/min without a splitter. Results: Apixaban and Apixaban 13C D3 were selectively resolved on the reverse-phase column at 2.35 min with a total run time of 4.00 min. For apixaban, the calibration curves were found to be consistently accurate and precise over the range of 0.977 to 250.000 ng/mL. The regression coefficients (r) were greater than or equal to 0.99. The plasma sample extraction method gave consistent and reproducible recoveries for apixaban and internal standard from plasma with good recovery. Matrix effect was found to be ⩽15%. Intra- and inter-day accuracy and precision were found to be acceptable as per the guidelines. Stability studies were also done and the results were found to be within the limits during the entire process. Conclusion: From the results of all the validation parameters, we can conclude that the developed method can be useful for conducting pharmacokinetic, BA/BE and therapeutic drug monitoring studies.

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NEW SPECTROPHOTOMETRIC METHODS FOR THE ASSAY OF ENTACAPONE TABLETS

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Entacapone is a specific inhibitor of cathechol-O-methyltransferase (COMT) which is a major enzyme in the pathway of levodopa metabolism. As a result, entacapone slows the metabolism of levodopa, causing an increase in its bioavailability and duration of action. Entacapone inhibits COMT activity only peripherally, unlike tolcapone which acts both peripherally and centrally. Entacapone was approved for use in the United States in 2003, the second COMT inhibitor approved for use in the therapy of symptomatic Parkinson disease as an adjunct to levodopa/carbidopa therapy in patients with motor complications. At present the authors have developed new UV spectrophotometric methods for the assay of Entacapone tablets in Borate buffer pH 9.0 and the method was validated. Entacapone has shown ^max at 358 nm in Borate buffer pH 9.0. Linearity was observed over a wide concentration range and a calibration curve was plotted. This method was validated and found to be precise and accurate and can be used for the routine analysis of Entacapone tablets.

F-183

OPTIMIZATION OF RP-HPLC METHOD ON ANTIHYPERTENSIVE AGENT BY USING QUALITY BY DESIGN (QBD) APPROACH

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Quality by design (QbD) is a modern and systematic approach for control of pharmaceuticals and product development. Pharmaceuticals quality can be assured by understanding and controlling variable parameters for formulation and manufacturing processes through such structured context. Now-a-days the concept of QbD can be extended to analytical and bio-analytical techniques. Olmesartn medoxomil is a prodrug, hydrolyzed to Olmesartan during absorption from the gastrointestinal tract. Olmesartan medoxomil (trade names Benicar (US), Olmetec (EU) is an angiotensin II receptor antagonist used to treat high blood pressure. In this project, as per our objectives, RP- HPLC method was developed by implementing QbD methodology with mobile phase Methanol: Water (80:20). The flow rate used was 0.8ml/min and UV detection was carried out at 255 nm. The retention time for Olmesartan was found to be 4.4 respectively. A systemic approach was utilized to develop an efficient and robust method which includes beginning with determination of target profile characteristics, risk assessment, design, Experiment and validation. The study was done by Box-Behenken Design (Design Expert Version 10.0.1). In this study interaction of 3 factors i.e. Flow rate, Wavelength, and Mobile phase composition vary at 3 levels. Effect of such critical process parameter on critical quality attribute of the method was studied. Responses in terms of retention times and revolution evaluated throughout all the runs in the design. By taking such runs, Method Operable Design Region (MODR) also termed as Analytical Design Space (ADS) was developed. A desirability function applied to determine the optimum conditions were obtained: the one with higher desirability was selected. Replicates of the run having optimized conditions were taken to confirm the predicted response with actual response. These QbD tools will minimize the risk by increasing the productivity and quality.

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TO STUDY THE EFFECT OF MIRCO – ENVIRONMENTAL CONDITION (PH) ON DRUG RELEASE OF CHITOSAN MATRICES (TABLETS).

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The main objective of the present study is to impact of micro-environmental PH, on drug release pattern from the developed formulation (Tablet) using different grades of chitosan. The chitosan contains a chitin which is a linear polysaccharide found in marine crustacean shells. It is the second most abundant natural polymer after cellulose. The novelty is that when chitosan used alone creates more retarding than HPMC at same level. Chitosan is a biodegradable polymer and the degradation depends on PH. The Aceclofenac is a Non steroidal anti-inflammatory drug analog of diclofenac. Aceclofenac film-coated tablets are supplied for oral administration and should be swallowed whole with a sufficient quantity of liquid. With the help of PH modifiers like Citric acid, Sodium Bicarbonate and Sodium Carbonate, the formulation of Aceclofenac matrix tablet containing chitosan shows the high aqueous solubility. As PH was raised from 1.2 to 6.8 solubility improved considerably. From DSC study a sharp endothermic was observed for Aceclofenac. It is a significant and better choice for the modified release tablet dosage form.

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ENHANCE ANTIBACTERIAL ACTIVITY OF CEFIXIME METAL NANOPARTICLES AGAINST RESISTANT MICROORGANISMS

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Cefixime is an antibiotic for oral administration in treatment of bronchitis, gonorrhoea and respiratory infections. Cefixime metal ion nanoparticles were synthesized with metal ions Ag, Pd, Cd, Ni and Zn and characterized by UV, FTIR, FESEM, Zeta potential and EDAX. The antibacterial effects of nanoparticles were studied using cup plate method against normal and resistant strains of bacteria. Cefixime nanoparticles have shown colour changes indicated the reduction of metal ions which ensures the formation of nanoparticles. UV spectrum of cefixime nanoparticles have shown absorbance in the range of 288-290 nm, the shifting or change of absorbance from λmax 288 might be due to formation of nanoparticles. FTIR spectrum show change in wave number might be due to coordinate bond formation with metal ion. FESEM analysis indicates morphology of Cef-Ni nanoparticles showed a hexagonal structure in the range 42.3 – 96.2 nm; spherical shape of Cef-Zn nanoparticle in the range 36.3 – 62.2 nm. Antibacterial study showed that Cef-Cd, Cef-Zn and Cef-Ni metal nanoparticles show a greater activity against P.aeruginosa and K.pneumoniae and Cef-Cd show better activity against P.aeruginosa. The lowest MIC against E.coli of Cef-Cd and cefixime was 30ug/ml and 50ug/ml was studies by rezasurine dye assay. The synthesized nanoparticles require less concentration as compared to plain drug to inhibit growth of microorganism. The histopathology examination and acute toxicity study of Cefixime silver shown no significant changes in liver and stomach cells of rat between control and experimental group indicates safe dose of nanoparticles.

F-192

METHOD DEVELOPMENT AND VALIDATION OF SPARFLOXACIN AND OFLOXACIN IN TABLET DOSAGE FORMS BY VISIBLE SPECTROPHOTOMETRY

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For the study of Sparfloxacin and Ofloxacin in tablets, a simple, inexpensive, selective, precise, and accurate Visible spectrophotometric method was developed and validated in accordance with ICH guidelines. The DCC reagent was used in this approach to react with the carboxylic acid of Sparfloxacin and Ofloxacin (nucleophilic addition) and 2-Nitrophenyl hydrazine (nucleophilic substitution), resulting in the formation of an amide via DCC-induced coupling. Sparfloxacin and Ofloxacin were found to have absorbance maxima (λmax) at 425 nm and 415 nm, respectively, with linearities of 10-50µg/ml and 10-40µg/ml, respectively. The results showed that the respective R2 values were 0.995 and 0.992 for Sparfloxacin and Ofloxacin. Statistical analyses of data indicated that the developed methods were specific and reproducible. The obtained results from these visible spectrophotometric methods can be efficiently used for the further and routine studies of sparfloxacin and ofloxacin in tablet dosage forms.

F-193

ACTIVATED CHARCOAL :- PROPERTIES AND APPLICATIONS

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Activated charcoal is a fine, odourless ,black powder often used in emergency rooms to treat overdoses. It's toxin - absorbing properties have a wide range of medicine and cosmetics uses, though none are scientifically proven. Activated charcoal is not the same substance as that found in charcoal bricks or burned peices of wood. 'Activation' process strips the charcoal of previously absorbed molecules and free up bonding sites again, increasing its overall surface. A few of the uses of activated charcoal supported by some evidence include:- kidney ,health, intestinal gas, water filteration, diarrhoea, oral health, skin care, deodrant, skin infection. In present review we are discussing applications and properties of activated charcoal. Activated charcoal can often help clear toxins and drugs that include NSAIDS and other OTC anti-inflammatory ,sedatives ,calcium channel blockers ,dapsone ,carbamazepine (Tegretol), Maleria Medications ,Methylxantines (mild stimulationts). To date , there have been no adverse reactions noted with activated charcoal in any of its various forms. Carbons with excellent surface properties and specific functionalities should be developed to create a high affinity for adorable adsorption.

F-194

STRATEGIES FOR IMPLEMENTING QUALITY CULTURE IN PHARMACEUTICAL ORGANISATION

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This Paper tells us about "Quality culture is a culture throughout the organisation that continually view quality as a primary goal it is the pattern the emotional scenery of human habit believe commitment awareness and behaviour concerning quality. It includes Leadership commitment of quality, Empowerment of the employees, Participation as a means of inspiring action recognition and rewards to employees who participate. Quality culture processing in pharmaceutical companies has increased challenges facing their customers safe medication which is effective and must have a high level of quality. New recent advancement in the manufacturing may lead to harm to patients. A number of strategies are now known and applied to the manufacturing company to improve the final quality of the product . However, a synthesis of the literature on these strategies has not previously been undertaken. We can now go through the case studies or article review so as to improve the method and procedures of implementing the strategies .

F-195

DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF EMTRICITABINE AND CLARITHROMYCIN IN BULK AND TABLET DOSAGE FORM

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A new simple, rapid selective, precise and accurate gradient reversed phase high performance liquid chromatographic method (RP-HPLC) has been developed and validated for simultaneous estimation of Emtricitabine and clarithromycin acid in bulk and tablet dosage form.Chromatographic analysis was performed on a c-18 column 9(250*4.6*5)at ambient temperature. The column used was an BDS in isocratic mode, with mobile phase containing tetrabutylammoniumhydroxide buffer and acetonitrile (70:30v/v) adjusted to ph 6.6 with dilute orthophosphoric acid solution. The flow rate was 0.8ml/min and effluents were monitored at 230nm. The retention times of emtricitamine and clarithromycin were found to be 2.33 min and 6.32 min, respectively. The method was validated as per ICH guidelines. The recoveries of emtricitamine and clarithromycin were found to be 98.53 to 100.03 and 98.5 to 99.9% respectively.the proposed method was found to be accurate, reproducible and consistent. It was successfully applied for the analysis of these drugs in marketed formulations and could be effectively used for the routine analysis of formulations containing any one of the above drugs or a combination, without any alteration in the chromatographic conditions.

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H-18

ASSESSMENT OF ERYTHROPOIETIN EFFICACY AND DOSING IN HEMODIALYSIS PATIENTS IN TERITIARY CARE HOSPITAL

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Chronic kidney disease (CKD) is defined by a reduction in the glomerular filtration rate (GFR). Erythropoietin deficiency is the most significant cause of anaemia in CKD. Because the kidney is the sole source of erythropoietin (EPO) synthesis. Morbidity and mortality in Haemodialysis in patients remain very high. To assess the efficacy of ESA in the treatment of anemia in CKD patient. The prospective observational study was conducted with 50 haemodialysis patients and the efficacy is tested through comparing Erythropoietin (4000 IU IV thrice weekly) versus Darbepoietin (40mcg IV twice weekly) such as group A and group B respectively. The male patients were more prone to CKD in (62%) than female and 80% of patients were under age group of 60 to 80 years. Hb level before the administration of Erythropoietin was about 6.4-9.5 g/dl and after the administration the range was between 6.6 -9.7 g/dl. Comparison of Cost Effectiveness found erythropoietin (Group-A) (4000IU/ml) and darbepoetin (Group-B) (40mcg/0.40ml) administered twice weekly. Total Cost is 1,52,496/- and 5,28,960/-rupees yearly. Administration of Darbepoetin (Group B) 40mcg/0.40 ml once a week effectively increased the haemoglobin level when compared to Erythropoietin alpha (Group B) 4000 IU/ml thrice weekly. Erythropoietin alpha (Group B) 4000 IU/ml was cost effective over the other.

H-19

ASSESSSMENT OF PHARMACOKINETIC PARAMETERS OF GABAPENTIN BASED REGIMENS IN DIABETIC PERIPHERAL NEUROPATHY

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Pharmacokinetic variation presents with a challenge during drug selection, administration. The aim of this study is to assess the pharmacokinetic parameters for gabapentin in diabetic peripheral neuropathy (DPN) patients with different drug regimens. A pilot study was carried out with 12 patients following an open labelled design. Patients were grouped into 2 groups where Group A received metformin, sitagliptin, gabapentin; Group B received metformin, voglibose, gabapentin. Blood samples were collected at various intervals and predicted using PMetrics (University of Southern California). Gabapentin levels are assessed using LCMS.The AUC (0-24) of Group A was found to be 163.24 ± 13.2, whereas Group B AUC (0-24) was found to be 121.31 ± 2.7. Despite being in therapeutic window Group A showed much significance ($p<0.05$). Tmax, Cmax also predicted within limits. This study suggests that use of sitagliptin based regimen may enhance the efficacy and therapeutic outcomes in gabapentin regimens in diabetic peripheral neuropathy (DPN).

H-20

MANAGEMENT OF METASTASIS CANCER – A REVIEW

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The current review is about the metastasis cancer that provides an overview of these metastasis essential steps related biochemical factors and targets for intervention. Metastasis cancer occurs when cancer cells break off from the original tumor, enter your blood stream or lymph system and spread to other areas of body. Current treatment for cancer metastasis chemotherapy and radiotherapy, though the new generation of anti-cancer drugs it has been effects on cancer metastasis in addition to their effects on cancer growth. Chemotherapy agents including temozolamide, cisplatin, 5-FU, cetuximab, and mitomycin for concomitant use with radiotherapy for specific indications. Hormone therapy can reach cancer cells almost anywhere in the body and not just in the breast. In such as drugs used selective estrogen receptor modulator (SERM), selective estrogen receptor degrader (SERD) and aromatase inhibitors. Immunotherapy is the use of medicines to boost a person's own immune system to recognize and destroy cancer cells more effectively some immunotherapy drugs for example, monoclonal antibodies, work in more than one way to control cancer cells and may also be considered targeted therapy. Adjuvant therapy is often used after primary treatment, such as surgery. Adjuvant therapy given before the main treatment is called neoadjuvant therapy. It's often used to make the primary treatment such as an operation or radiation treatment easier or more effective. Inhibiting key driver traits of metastasis, should yield survival benefit at any stage of the disease.

H-21

A CASE STUDY ON TETRALOGY OF FALLOT

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Tetralogy of Fallot is a rare of the rarest congenital heart condition that consists of heart abnormalities. To check the treatment approaches and clinical outcomes in one of the most rare disease Tetralogy of Fallot. In this case the patient had defects in the structure of heart – stenosis / narrowing of right ventricular outflow tract into pulmonary artery, which leads to narrowing of valve or infundibulum right below the valve. It caused right ventricular hypertrophy of the myocardium, ventricular septal defect and aortic override of septal defect and together these conditions result in cyanosis in neonates or Newborns. TOF affects about 10% of Newborns. This condition caused 'Tet spells', lethargy, shortness of breath, fainting, clubbing of nailbeds of fingers or toes, cyanosis. The presence of abnormal 'whooshing heart murmurs' is observed.Diagnostic tests include EKG, ECG, chest X-RAY, and cardiac catheterization.The treatment involves intracardiac repair, temporary shunt surgery and the patient given preventive treatment for complications like 'arrythmias' that may arise after surgery. Antihypertensives and multivitamin therapy was given as prophylactic. In this case the patient reported with complaints of sudden onset of shortness of breath (SOB) along with sweating from past 1 year. The confirmatory test for TOF in this patient were ECG, 2D-echo, CT-coronary Angio and post confirmation of TOF, the patient was advised and underwent intra cardiac surgery .The overall quality of life of the patient was improved.

H-22

EVALUATION OF DRUG UTILIZATION FOR LIFETIME ANTIPLATELET THERAPY IN ISCHEMIC STROKE PATIENTS

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Drug Utilisation Evaluation is the marketing, distribution, prescription, use of drugs in society. Stroke, Sudden impairment of brain function due to hypoxia, which may cause death of brain tissue. Dual antiplatelet therapy for longer than first 21days following a transient ischemic attack isn't recommended unless there is a specific indication. To run Drug Utilisation Evaluation for lifetime antiplatelet therapy -ischemic stroke patients. The Prospective Observational study conducted at Neurology department of KG hospital, for the Period of 6months with 200patients of Inclusion criteria. The demographic details indicates male(61%) more prone to Stroke than female(39%). The43% of patients were able to reason out whereas57% of patients weren't able to reason out the lifetime antiplatelet therapy. About52% of the study have accomplished duration of > 1year of their antiplatelet therapy. The recurrence/persistence of complications estimated to10% muscle weakness, memory loss3%, slurring speech5% among total study. The positive outcomes in lifetime antiplatelet therapy -ischemic stroke patients were56%. The clinical pharmacists perform by assessing prescription&reviewing patient information for possible drug interactions/therapeutic duplication for lifetime antiplatelet therapy.

H-23

ASSESSMENT ON QUALITY OF SLEEP AND DEPRESSION IN PREGNANT WOMEN

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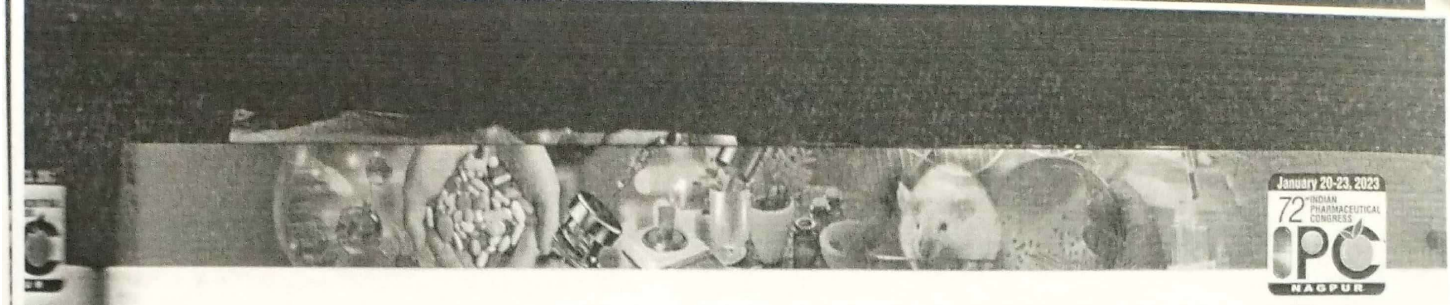
The objective of this study is to analyze the quality of sleep using Pittsburgh Sleep Quality Index (PSQI) and depression level of the patient's using Beck Depression Inventory (BDI), and to find the association between sleep quality and depression among pregnant women without comorbidities. Materials and Depression was assessed with the Beck Depression Inventory (BDI) and the quality of sleep in our study was assessed using Pittsburgh Sleep Quality Index (PSQI). PSQI is a validated self-rated questionnaire that assesses sleep problems or several aspects including sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medications, and daytime dysfunction. Inclusion criteria: pregnant women are eligible. Exclusion criteria: Pregnant women with comorbidities like hypertension, hypothyroid, diabetes. Our study assess that lack of sleep and depression is the most underlying causes in pregnancy First trimester – 23% sleep quality depravation and 18% depression [Rvalue– 0.62] -high correlation. Second trimester – 30% sleep quality depravation and 18% depression [Rvalue – 0.59]- medium correlation. Third trimester – 47% sleep quality depravation and 66% depression [Rvalue – 0.84]-very high correlation. Our study with aim assessing the quality of sleep among pregnant women demonstrated that the quality of sleep



reduces significantly with associated depression level of the patients.

H-24

A PROSPECTIVE STUDY TO ASSESS THE CLINICAL UTILITY OF TARGETED THERAPY IN HUMAN EPIDERMAL GROWTH FACTOR RECEPTOR (HER) 2 POSITIVE BREAST CANCER PATIENTS

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Breast cancer with high levels of the HER2 protein is known as HER2 positive breast cancer. The study was aimed to analyze the treatment approaches in patients suffering from HER-2 positive breast cancer. The prospective observational study was conducted for a period of 7 months. Data was analysed the clinical utility of anti-HER2 therapy in HER2 positive breast cancer patients. Among 35 HER2 positive breast cancer patients collected, 4 (11%) patients have found to be under stage 1 BC, 7 (20%) have stage 2A BC, 6 (18%) patients falls each under stage 2B and stage 3A, 4 (12%) have stage 3B, 3 (7%) patients have stage 3C, 5 (14%) have stage 4 breast cancer. Out of 35, it has been found based on tumor grade that 2 (6%) patients have T0 tumor grade, 7 (20%) patients falls each under T1,T3 and T4, while 12 (34.28%) have T2 tumor grade. Out of 35, 11 (32%) have N0 grade, 12 (34%) patients have N1, 7 (20%) patients have N2 and 25 (14%) have N3 grade. Out of 35, 30 (86%) patients have M0, while 5 (14%) patients have Mx. Out of 35, 9 patients were prescribed with Docetaxel, 4 patients were with Paclitaxel while 6 patients with Taxane therapy, Trastuzumab was prescribed to 26 patients, 17 patients were prescribed with AC therapy. The targeted therapy with Trastuzumab was not given as a monotherapy. The drug Pertuzumab was given to patients in whom there was evidence of metastasis.

H-25

TUBERCULOSIS AS A 'TICKING TIME BOMB: ARE WE READY FOR ANOTHER PANDEMIC WITH RAPID RESPONSE PLAN?

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It is the proverbial elephant in the room, everyone sees it, and no one talks about it. Same is the case with tuberculosis under the shadow of covid-19 in India. Before covid-19 became a global pandemic, much older is the epidemic- TB which affected 2.64 million Indians in 2019 and nearly 4 lakh deaths accounting over 1000 TB deaths per day. The question is are we ready for another pandemic? TB, is a well known bacterial infectious disease primarily affecting lungs and can affect 10-15 individuals more. It causes significant morbidity due to non-diagnosis, non-treatment, and discontinuation of anti-TB medication. Our study and literature shows the National state specific lockdown has affected all key interventions resulting in almost 60% decline in TB notification during lockdown period where gap between estimated TB cases and notified TB cases has been increasing. It was noticed that there was a drop of 62% in notifications during the period Jan-June,2020. The challenges faced during an pandemic are closure of public and private health facilities, fear of contracting virus, non-availability of transport services and lockdown related restrictions which affects access to diagnosis, medication adherence, and follow up. Strategies such as diagnostic algorithm and screening, case finding, consultation, monitoring and evaluation can assist revival of NTEP services during covid-19. Main objective is implementation of rapid response measures to normalize and expand coverage of TB service and revitalization of TB elimination efforts by adopting novel strategic interventions accelerating NTEP[National Tuberculosis Elimination Programme].

H-26

AWARENESS AND KNOWLEDGE REGARDING PCOD/PCOS AMONG SCHOOL AND COLLEGE GIRLS. 2022- TAMILNADU

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Background: PCOD/PCOS (Poly cystic ovary disease) is a type of hormonal disorder causing in enlargement of ovaries with small cysts on the outer edges, which is mostly caused by a combination of hormonal imbalance and genetic tendencies in girls/women. A prospective-based interventional study was carried out to access the awareness and knowledge regarding PCOD/PCOS among 1000 school and college girls in both urban and rural areas. Before the awareness program, the knowledge among 1000 students was reported at about 19% with the highest score of 46%. After the session, the student's knowledge was reported as 30% with a 93% score, 34% with a score of 86% scores and 25% with an 80% score, and the rest of the others with more than 70%. From the study, before the session, the awareness and knowledge about PCOD/PCOS among school and college girls are very poor. But after the session, the knowledge and awareness about PCOD/PCOS are being improved among the girls. Most of the women population are unaware of the causes and symptoms and even about PCOD/PCOS. A much grander awareness is required, especially among the society of women to prevent the aggressive effect of PCOD/PCOS in the next generation for a healthy future society.

H-27

EVALUATION OF SERUM FERRITIN AS A BIOMARKER FOR DISEASE SEVERITY IN COVID -19

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Ferritin is known for its use as a prognostic marker in COVID-19. In this study we aimed to evaluate its prediction ability on the disease severity (need for mechanical ventilation and Death) at a tertiary care hospital. A cross sectional study was carried out in a tertiary care hospital. Patients were divided into two groups as first groups included mild and moderate COVID-19 and second group included severe COVID-19 requiring mechanical ventilation or leading to death. Ferritin levels are evaluated and also concluded with other prognostic markers of COVID-19. 216 patients were enrolled, 38 patients belonged to severity group and 178 patients belonged to non-severe group. On performing logistics regression, although elevated ferritin levels are seen, it is not statistically significant ($p = 0.0596$), Pearson's correlation with lymphocyte count ($r = -0.614$), Albumin levels ($r = 0.712$) and directly .Our study revealed a conflicting result that ferritin alone cannot be initialised as a prognostic marker in COVID-19 severity.

H-29

PREVALENCE OF LIPID ABNORMALITIES IN TYPE 2 DIABETES MELLITUS

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Diabetes Mellitus is a metabolic syndrome characterized by increased blood sugar levels in the body. Lipid profile variations in diabetes are one of the most important reasons for silent heart attacks. The main aim of this study is to evaluate the incidence of lipid profile variations in type 2 Diabetes Mellitus.A Prospective observational study was carried out at Rohini super specialty hospital. Lipid profile values were obtained from the patient after obtaining a written consent form from each patient and correlated with American Dyslipidemic Association standard values. These values were correlated along with American Dyslipidemic Association values on the standard lipid profile panel. This study shows that around 41.42% of men who were diabetic possess a higher probability of incidence of hyperlipidemia and around 51.49% of women who were diabetic possess a higher probability of incidence of lipid profile variations. Diabetes Mellitus is the most common disease among the population across the world. Hyperlipidemia in Diabetes Mellitus possess a major threat of myocardial risk and heart attacks. Regular monitoring of lipid profiles is an important way to prevent silent heart attacks.

H-30

AGGRAVATION OF COVID -19 INFECTION IN HYPERTENSIVE AND NON-HYPERTENSIVE HOSPITALIZED PATIENTS

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In early December 2019, a series of pneumonia cases with unknown reason emerged in Wuhan, Hubei ,China which is later named as COVID-19 caused by novel Coronavirus.As per the WHO till date 663,601,048 people were infected and 6,596,542 died because of Coronavirus infection.COVID -19 is a respiratory infection which is caused by Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) led to pandemic of disease with high virulence and considerable high mortality with common symptoms of fever,fatigue, and dry cough ,loss of taste or smell , dyspnea , myalgia etc.In the current research, it was found that Hypertension is the most prevalent underlying disease in Hospitalized COVID-19 patients.Human pathogenic coronaviruses SARS-CoV-2 bind to their target cells through angiotensin-converting enzyme 2 (ACE2) protein, which is involved in the regulation of blood pressure in the human body.The objective behind the research was to assess the incidence of SARS-CoV infection in Hypertensive and Non-hypertensive groups of patients and the susceptibility of hypertension

H-98

A STUDY OF INTRAVENOUS INCOMPATIBILITY IN INTENSIVE CARE UNIT – ROLE OF CLINICAL PHARMACISTS IN PATIENT SAFETY

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Aim: To identify the incidence of incompatibilities occurring in intravenously administered drugs among critically ill patients. Methodology: A prospective observational study was conducted for a period of six months. 150 critically ill patients were selected for the study. The IV drug therapy given to them were analysed to detect the administration of incompatible drugs using Micromedex software, King guide to parenteral administration, Trissel's Handbook on injectable drugs. Result: A greater number of incompatibilities among all the drug combinations analysed were pantoprazole and ondansetron. 40.26% of incompatible drug combinations, 29.87% of compatible combinations, 20.12% of undocumented combinations and 9.74% of variable combinations were found. Cefuroxime + ciprofloxacin were the most common infusion-infusion drug combinations which were compatible. Among bolus-bolus and infusion-bolus, Ondansetron + Furosemide and Ciprofloxacin + Cefuroxime, were the common incompatible combinations, respectively. Conclusion: Through this study, significant number of incompatible IV drug combinations among admixtures and y-sites along with IV medication errors were identified. An incompatibility chart prepared could prevent the possible IV incompatibilities occurring in ICU settings by providing an alert to the health care professionals involved in the administration of IV drugs.

H-99

A COMPREHENSIVE REVIEW OF PROSTATOMEGALY TREATMENT AND POST SURGICAL COMPLICATIONS

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Benign prostatic hyperplasia (BPH) is also called as prostate gland enlargement is a common condition as men get older. The prostate gland is located at the junction of the urinary bladder and the urethra in men. It secretes a milky, alkaline fluid that constitutes approximately 30% of the volume of semen. It is covered by a connective tissue which contains smooth muscle fibers and elastic tissue. Uncomfortable urinary symptoms, such as blocking the urine flow out of the bladder can caused by an enlarged prostate gland. It can also cause bladder, urinary tract or kidney problems. Medications, minimally invasive therapies and surgery are the several effective treatments for prostate gland enlargement. To choose the best option, the patient and the doctor will consider the patients symptoms, the size of the prostate, other health conditions and the patients preference. Moderate to severe Lower Urinary Tract Symptoms (LUTS) from BPH or mild LUTS that are deemed bothersome by the patient may give pharmacologic treatment. Alpha-1 Adrenergic receptor antagonists and 5-alpha reductase inhibitors are the 2 major classes of medications for BPH . During the procedure of transurethral resection of the prostate (turp), patient may experience bladder perforation, bleeding, coagulopathy, transient bacteremia and septicemia, A major complication of TURP is the excessive absorption of irrigation solution resulting in hypervolemia and dilutional hyponatremia. This review provides an overview of the etiology, symptoms, management of benign prostatic hyperplasia as well as post-surgical complications and lifestyle modifications that may enhance patient conditions.

H-100

ASSESSING THE PRESCRIBING PATTERNS OF ANTIBIOTICS IN TERTIARY CARE HOSPITAL: A PROSPECTIVE STUDY

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Antibiotics are drugs used for treating infections caused by bacteria. Antibiotics are currently the most commonly prescribed drugs in hospitals worldwide. The aim of the study was to analyze the prescribing patterns of antibiotics and to observe the rational use of antibiotics. A prospective study was conducted for a period of 10 months in tertiary care hospital in Hyderabad. Prescriptions containing antibiotics were taken into consideration from patient case sheets who fitted the inclusion criteria. A total of 729 prescriptions with antibiotics were included, majority of the antibiotics prescribed to male patients with 69.5% and females patients with 30.5%. Most of the antibiotics were prescribed between the age group of 19-59.

Culture test was done in
negative, the most c
with 51%, 22%, 1
(40.3%), and
Infections t
was the m
Forte, Piptaz.
Augmentin (12%)
prescribed antibiotics
Fluoroquinolones 2% and
of antibiotics which was found

DEVELOPMENT
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H-101

IMPACT OF THIAMINE SUPPLEMENTA
PERIPHERAL NEUROPATHY

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Background-diabetic Peripheral Neuropathy(DPN) is one of the
complications of Diabetes Mellitus. Studies have suggested
observed in diabetes mellitus and predominantly in DPN patients.
incidence of thiamine deficiency and studied the effects of
patients. Materials And Method-A randomized trial study was
2021.Diabetic Peripheral Neuropathy patients clinically
conduction velocity (< 50 meters/second),elevated homocysteine
included in the study. Patients were grouped into two groups.
75mg/day along with other antidiabetic medications and
received B-complex with 10mg/day thiamine.NCV was carried out
months end point. RESULT-84 patients were included and
randomized permuted blocks.76 patients(group I-40 patients, group
the study. Insufficient levels of thiamine is observed in many patients
group showed significant improvement in glycemic profile.
hba1c($p < 0.001$). No significant adverse drug reaction and hypervitaminosis
groups. Conclusion-Thiamine as a supplement has shown significant
as well as neuropathy. We recommend further research to understand the
using thiamine.

H-102

A LUMPY SKIN DISEASE VIRUS: A REVIEW

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Lumpy skin disease is the most notifiable disease in cattle which is caused by a virus belonging to the Capripoxvirus genus of the family Poxviridae. LSD has been widespread to most of the African Countries as well as in Middle East countries and can be prevalent to rest of Asia and Europe can be considered. The objective of this review is to make available the accessible information on the various aspects of the lumpy skin disease such as its clinicopathology, transmission, epidemiology, diagnosis, prevention, treatments, and the potential role of wildlife in the further spread of disease. Recently the outbreak of lumpy skin disease was resulted in 1850,000 cases and death of over 97,000 cattle from July 22 to September 22 reported in Gujarat and Rajasthan. Over 50,000 deaths in Rajasthan, 1436 deaths in Maharashtra, 378 deaths in Uttar Pradesh have been reported. LSD causes economic losses to the livestock farmers and industries of affected counties such as mortality loss, milk loss, medication cost, labour cost, induce infertility in affected animals, cattle movement restriction also leads to indirect losses to the country. This review can be concluded that preventive measures should be implemented to prevent in future economic losses, which requires high level of awareness at technical and political level.

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J-19

MEDICINAL PLANTS IN ORAL CARE COSMECEUTICALS – A FIELD STUDY

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Herbs have been used for centuries to avert and treat disease. Oral hygiene products have been used by many people over the years. Toothpastes and mouthwashes were major products used for health and beauty, and demand for these dental products is high. Plants are our first choice when it comes to health issues, as they are such a large part of the nature that surrounds us. Compared to herbal products, chemical compounds are associated with more side effects, so herbal medicines are cheaper to use and researchers are more interested in such products. In oral hygiene products, anti-inflammatory and anti-hemorrhagic plant extracts are of great interest to dentists. Ayurveda is an ancient science- based Indian system for health care and longevity. The use of traditional means to maintain oral hygiene has a long tradition and is still widespread today in rural areas Africa, South America and the Indian subcontinent. The most commonly used herbal remedies include: It is derived from the plant in the form of chewing sticks, toothpastes, mouthwashes and chewing gums that show anti-plaque and antibacterial benefits. The herbs described in this article are Clove, Aloe Vera, Evening primrose, Neem, Thyme, Turmeric, Meswak and summary of other herbs that are useful in oral care products.

J-20

STUDY ON CHALLENGES AND OPPORTUNITIES OF COSMECEUTICALS IN INDIA.

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Cosmeceuticals products that cure, treat, mitigate, or prevent disease or that affect the structure or function of the human body, if a product makes such claims, it will be regulated as a drug. Nowadays, "cosmeceuticals" is a new topic in the cosmetic industry, which is the fastest-growing consumer products sector with huge growth opportunities for international companies. The personal care, cosmetics and cosmeceuticals industries in India have shown consistent high growth over the last few years. The high cost of manufacturing of cosmeceuticals has also become an entry barrier for the Indian market. It is an opportunity that innovative products with multiple benefits such as anti-ageing, moisturizing and SPF protection are gaining prominence in the cosmetics industry. The cosmeceuticals market has great potential among the main Asia-Pacific countries, including Japan, China, and India. India shared a total of 5.7% in the Asia Pacific cosmeceuticals industry, with stupendous growth witnessed in the hair care product segment at Compound annual growth rate of 22.0% from 2007- 2012. It describes a new category of products placed between cosmetics and pharmaceuticals that are used for the enhancement of both the health and beauty of the skin. They are the new pillars of skincare, as well as advancements in dermatological products. Every cosmeceutical makes the claim to have active substances with healing, disease-fighting, or therapeutic capabilities. This review highlights the recent knowledge about challenges and opportunities of cosmeceuticals in India.

J-21

THE CONSUMER PROTECTION ACT: NOW AND THEN

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Consumer protection is a socio-economic requirement carried out with a prime objective of consumer satisfaction and protection of their interests. Consumer protection has been a responsibility of the rulers in India even before 1947 but was implemented in indirect ways. One of the important legislation in this field was the Trade Practices Act, 1974 which came into existence on 1 October 1974. But a formal consumer protection law, which purely focuses on consumer protection, was enacted in India in the year 1986. Consumer Protection Act 1986 (CPA 1986), was much more detailed, comprehensive and effective in comparison to other consumer protection Acts in various countries. Any act cannot stand the pace of development and becomes fully or partly obsolete. This makes it necessary to amend them. With changes in economy, market dynamics, consumer needs and demands along with exponential growth of information technology and dependence on it, the consumer protection act was amended in 2019. This paper presents a comprehensive review of old and amended CPA and focuses on suggestions for betterment of CPA with futuristic view.

J-22

REGULATORY REQUIREMENTS PERTAINING BLOOD PRODUCT IN INDIA AND USA: A COMPARATIVE STUDY

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Blood and blood products are highly valuable that can give life to another patient. There isn't any substitute for human blood even though we have made enormous scientific and technological breakthroughs. We are still lacking a clear and rigid regulatory framework for the regulation of blood products. Because there is often a lack of blood during an emergency, it is the patient's relative or friend's responsibility to arrange for a replacement and in this circumstance, the healthcare provider fails to safeguard the public's health. comparison with the United States, India has very lax norms and regulations, which may be a result of the government's incapacity to enforce laws, regulations, and policies, as well as people who may not be aware of or unable to adhere to quality assurance and/or good manufacturing practices. Due to a severe shortage of donated blood, around 12000 individuals in India die every year. India collects about 11 million units of blood annually, when it needs about 15 million, which is far insufficient to meet the demand. This study indicates a number of issues that must be resolved since they may delay the timely delivery of safe blood products, which demands strengthening, planning and regulation of blood transfusion services. So, this study clarifies the comparative blood transfusion practices in both India and the United States. The goal of this study is to minimize the risk as far as practicably possible without significantly lowering the availability of resources that can save lives.

J-23

A CROSS-SECTIONAL SURVEY ON MANDATORY GENERIC PRESCRIBING AND GENERIC SUBSTITUTION FOR BRAND-NAME MEDICINES IN INDIA

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It is ironical that India has very low domestic consumption of the generics, despite being largest provider of generic drugs to the World dominated by branded medicines. It's matter of huge burden to public health funding of the Government as well as the patient's huge out-of-pocket expenditure. A cross-sectional study is performed for systematic review and critical appraisal of perception among various stakeholders on (i) mandatory prescribing with a generic name and (ii) generic substitution for brand-name medicines. The cross-sectional survey was done in the form of verbal interviews with stake holders (N=390) comprised of physicians (116), representatives of the industry (24) and regulatory bodies (12), pharmacists (140) and patients (98), which revealed a lot of misconceptions with lack of trust on the quality, stability and extent of regulatory control of generic medicines. Out of 390 respondents, 160 (41%) were found to have basic understanding on quality, safety, efficacy, cost & applicable regulatory controls on generics and lack of knowledge was conspicuous even among the educated group. It was observed that majority respondents were skeptical about the quality and regulatory control on generics and neither the physicians nor pharmacists are in favor of mandatory prescribing of medicines using generic names. There was a mixed response on the right to generic substitution by the pharmacist. The outcome of this study warrants the need for continued education and improving the perception of generics among all stakeholders.

J-24

EXPLORATION OF INSTRUCTION FOR USE AND GENERAL INFORMATION DISPLAYED ON DENTAL MATERIAL AND DEVICE LABELS/PACKAGES

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The regulatory agency (including FDA) regulates the marketing approval, licensing and clearance of OTC products (including dental material) to ensure product safety and effectiveness. The agency further extends its regulation to labelling and promotion of the product. Dentistry is the branch of medicine that is involved in the study, diagnosis, prevention, and treatment of diseases, disorders and conditions of the oral cavity. Although the practice of dentistry is governed by State law and regulations but dentist and patient must be aware of safety of the product. This can be achieved by proper labelling practice that can protect patients from adverse errors. Based on the data obtained, a unique packaging standardization checklist was developed. An exploratory cross-sectional study was performed using various search engines and websites to access the laws and regulations existing pertaining to dental materials packaging. This study considered 20 brands of dental material instruments for

functional new biologically active molecules toward desired properties. Many examples show how effective artificial intelligence is in this area. It is possible to combine drug discovery with synthesis planning and ease of synthesis, and shortly, more and more automated drug discovery by computers is anticipated

A-73

DESIGN AND INVITRO EVALUATION OF POLYHERBAL HAIR OIL

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Hair is a dynamic, captivating and beautifying part of the body. Herbal products have been generally used by individuals as home medications. In recent times the use of herbal medicines has increased enormously because they are safe, non-toxic, natural, easily available and well suited with all skin types when compared to synthetic products. The main aim of the study is to develop a polyherbal hair oil formulation that can be used to treat hair fall, dandruff, grey hair, baldness and dry hair. Experimental methods: Formulations subjected to evaluation includes organoleptic, phytochemical and physical parameters like pH, viscosity, specific gravity, refractive index, acid and saponification value. The herbs used are Emblica Officinalis, Lawsonialnermis, Indigo feratinctoria, Eclipta Alba, Tridaxprocumbens, Ocimumtenuiflorum, gel of Aloe barbadensis, oils of Cymbopogon Citratus and Cocos Nucifera. Out of all formulations of 2%, 4% and 8%, the 8% hair oil formulation isshowing color intensity more and the same is maintained even after shampooing three times and reported to have properties like hair growth, prevents premature greying of hair, antidandruff, and moisturizing properties. polyherbal hair oil were reported to havegood properties like hair growth, prevents premature greyingof hair, anti-dandruff and moisturization. Colour intensity of poly herbal oil after shampooing the hair for three times also showed satisfactory result.

...sed in the design of oleogels as potential controlled delivery systems. A ...tion is provided to their newest therapeutic applications.

A-115

...NT AND CHARACTERIZATION OF NIOSOMAL GEL FOR THE TOPICAL ADMINISTRATION OF LOSARTAN POTASSIUM

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...tassium is an angiotensin II receptor antagonist, used in the treatment of ... Losartan potassium is generally available in the form of oral formulation with a ...availability of 25-33%. In order to increase its bioavailability, topical ... of Losartan potassium was attempted. The topical administration of this drug ... formulating a gel incorporated with niosomes. After screening span 80 was ... nonionic surfactant. Drug excipient compatibility study was done by FT-IR ... Ether injection method was used to prepare niosomes though thin film hydration ... also tried. Six formulations were developed by taking different ratio of span 80 to ... The prepared niosomes were characterised for appearance, consistency, clarity, ... zeta potential and entrapment efficiency. These niosomal preparations are ... gel where Carbopol 934 was used as gelling agent. These niosomal gel ... were evaluated for pH, in vitro drug release studies using Franz diffusion cell. ... of F1 formulation was found to be 1835.0 nm. F1, F2 and F3 niosomal ... entrapment efficiency was found to be 78%, 58% and 55% respectively. The pH ... be in the limits which indicated less chances of irritancy on skin. The zeta ... of the niosomal dispersion is also said within the limit range i.e., -3.7mV. The ... index was also found out to be within the limits i.e., lesser than 0.7, the value ... indicates uniform niosomal vesicles. The in vitro release study was carried out ... formulations F1, F2 and F3 and it was found that F1 formulation has high drug ... compared to F2, F3. Thus, Losartan potassium can be tried for topical application to ...ability and further studies are required to be performed for pharmacodynamic

COMPARATIVE QUALITY CONTROL PARAMETERS OF THREE DIFFERENT BRANDS OF PARACETAMOL TABLETS IN DIFFERENT MEDIA

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Paracetamol is an analgesic and antipyretic OTC drug. Efficacy of tablet formulation in clinical trials depends on safety, released amount specified on label and its accessibility to the human body. The goal of an oral tablet is to deliver the medicine to the human body to achieve desired therapeutic impact.The study is designed to investigate the quality control parameters of paracetamol tablets of three different brands. The quality control parameters such as weight variation, hardness, friability, disintegration, dissolution and content uniformity were performed by using high precision balance, Roche Friabilator, Monsanto hardness tester, Dissolution apparatus (6 paddle), UV spectrophotometer.All paracetamol tablets of three different brands have passed the quality control test. The weight variation of all the three different brands of paracetamol tablets is within pharmacopoeial limits and none of the tablets deviated the limits (±5%). Similar results were repeated with hardness, friability, disintegration, dissolution, and content uniformity.

FORMULATION AND EVALUATION OF NISOLDIPINE SUBLINGUAL TABLETS USING SUPERDISINTEGRANTS

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Nisoldipine is a calcium channel blocker used for treatment of angina pectoris, hypertension and congestive heart failure etc. It belongs to BCS class-II i.e., low solubility & low bioavailability due to extensive pre-systemic metabolism of Nisoldipine. Objective: the main objective of this research work was focused to improve solubility and bioavailability of the Nisoldipine using superdisintegrants. Methodology: Sublingual tablets of Nisoldipine were successfully prepared by direct compression method using superdisintegrants like Crosspovidone, Crosscarmellose sodium and Sodium starch glycolate for the better patient compliance and effective therapy. The relative efficiency of these superdisintegrants is to improve the disintegration and dissolution rate. Results: The disintegration of F1, F2, F3 with Crosspovidone formulations was found to be as 8, 6, 5secs respectively and found better than F4, F5, F6, F7, F8, F9 formulations. In Formulation F3, In-vitro percentage drug release was found to be 96.96% in 10 minutes containing 6% crosspovidone. Prior to compression, the blend of drug and excipients were evaluated for flow properties such as Angle of repose, Bulk density, Tapped density, Percentage Compressibility, and Hausner's ratio. Conclusion: All the prepared formulations shown good flow properties. Post compression evaluations of prepared sublingual tablets were carried out and were found to be in compliance with pharmacopoeial and non pharmacopoeial limits. From this study, it is concluded that, the optimized F3 sublingual tablet formulation showed less disintegration time (5 secs) and more percent drug release within 10 minutes (96.96 %).

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effects. The transdermal route of delivery for many drugs is limited since very few drugs delivered at a viable rate using this route. The stratum corneum of skin works as an effective barrier, limiting most drugs' penetration through the skin. The use of nanocarriers for increasing the range of available drugs for the transdermal delivery has emerged as a unique and alternative method. Both the lipophilic and hydrophilic drugs can be delivered via a range of nanocarriers through the stratum corneum with the possibility of having local or systemic effects to treat various diseases. The skin structure and major obstacle for transdermal drug delivery, different nanocarriers used for transdermal delivery, i.e., nanoparticles, ethosomes, dendrimers, liposomes, etc., The combination of nanocarrier and physical methods, including iontophoresis, ultrasound, laser, and microneedles, improving the therapeutic efficacy of transdermal drugs

A-655

NASAL MICROEMULSION FOR THE MANAGEMENT OF ALZHEIMER'S DISEASE

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The aim of this investigation was to create novel intranasal microemulsion containing Donepezil for the treatment of Alzheimer's disease. Nasal route is preferred for the treatment of central nervous system ailments due to an olfactory route. Microemulsion was selected as suitable dosage form as these dosage forms are thermodynamically stable, optically transparent, isotropic dispersions of oil and water stabilized by a surfactant and co-surfactant. Isopropyl myristate was chosen as oil while tween 80 and polyethylene glycol 400 were chosen as surfactant and cosurfactant respectively based on phase solubility studies. Microemulsions were prepared by the spontaneous emulsification method. Pseudo-ternary phase diagrams were constructed to obtain the appropriate ratio of tween 80: polyethylene glycol 400 which can result in to large existence of microemulsion area. The prepared microemulsions were characterized for particle size, pH, drug content, polydispersity index, zeta potential, conductivity, viscosity and in vitro drug release. Ex vivo permeation studies were carried using sheep nasal mucosa membrane. Based on results of in vitro and ex vivo studies, one formulation selected for in vivo study in Swiss albino mice. The animals were divided into groups, control, standard (oral) and test (intranasal) respectively. The intranasal Donepezil microemulsion was shown lesser intensity of Alzheimer's symptoms which may be due to larger extent of selective nose to brain delivery of drug in comparison to oral suspension of Donepezil. This may help in decreasing the dose and frequency of administration of drug that may possibly maximize therapeutic benefits and may also reduce the cost of therapy.

possessing a methylsulfonyl COX-2 pharmacophore at the para position of the C-2 phenyl ring were synthesized as COX-2 inhibitors. Firstly, 2-(4-(methylsulphonyl)phenyl)quinoline-4-carboxylic acid (intermediate) was synthesized from isatin and 4-methylsulphonyl acetophenone via Pfitzinger reaction. Then, intermediate was converted to 2-(4-(methylsulphonyl)phenyl)quinoline-4-carboxamide derivatives (1a - j) when treated with corresponding primary aliphatic or aromatic amines via coupling reaction in presence of ethylcarbodiimide (EDC). All the synthesised derivatives were characterised by melting point, thin layer chromatography and spectral (IR, 1H NMR, 13C-NMR and MASS) studies. Molecular docking study of compounds 1a - j were performed against COX-2 (PDB ID: 1cx2) by using AutoDock Vina software. In docking study, the compounds 1a, 1b, 1c, 1e, 1h and 1j were showed acceptable binding interactions (affinity in kcal/mol) in comparison with reference drug celecoxib. The title compounds were screened in vivo using carrageenan induced rat paw edema model. Compounds 1a, 1b, 1c, 1e, 1h and 1j significantly inhibited the rat paw edema depending upon the dose employed when compared with reference drug celecoxib (50 mg/kg).

B-76

INSILICO DESIGN, MOLECULAR DOCKING STUDIES, PHARMACOKINETICS PREDICTION, SYNTHESIS, AND NTIMICROBIAL EVALUATION OF COUMARIN DERIVATIVES

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For early evaluation of potency, selectivity of lead molecules, and their potential ADMET to reduce cost, and failures and speed up the successful development of new molecular entities. In a drug intended for oral use, good drug absorption and appropriate drug delivery especially play a key role. The molecular structure is at the basis of ADMET (absorption, distribution, metabolism, and excretion) properties. Coumarin and its derivatives are remarkable because of

[illegible] extensive biological activities such as antidiabetic, antiallergic, antimutagenic, anticancer, antioxidant, antiparasitical, and antifungal activities.For this study, we designed coumarin derivatives and analyzed for Lipinski RO5[1] properties to know their oral drug like properties.The finding exposed that coumarin derivatives have good drug like properties and could be developed as oral drug candidates.Molecular docking investigations of designed coumarin derivatives displayed remarkable inhibition ability towards (1DY) with the binding energy of -8.3 to -9.3 kcal/mol. BS fig. 9a, 9b, 9c, 9d, 9e, 7a, 7b, 7c)more than standard indomethacin. 3-acetyl Coumarin derivatives (8) - 3 were synthesized and characterized by IR, H NMR, and Mass spectral data and evaluated for antimicrobial activity by Modified Kirbys-Bauer method with MIC[2] against three bacterial strains S. aureus,Salmonella typhi, K.pneumonia. The compound 7b showed the highest inhibition towards S. aureus, Compound 8, 8c, 8d and 8 showed the highest inhibition against Salmonella typhi. Compounds 8, 8b& 8d, showed the highest inhibition towards K.Pneumonia than the standard. This attempt is to select the drug molecule which shows desired therapeutic effect.

B-77

EVALUATION OF FLAVONOIDS IN THE LEAVES OF ARGYREIA SPECIOSA

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Argyreia speciosa which contain flavonoids having anthelmintic activity.The aim of this work is to extract, standardize and evaluate flavonoids present in the leaves of Argyreia speciosa.The present investigation the leaves of Argyreia speciosa have been extracted with appropriate organic solvents to yield flavonoid rich fraction. The defatted plant material was extracted for isolation of flavonoid rich fraction with the help of 80% ethanol using various methods like maceration, soxhlation, microwave assisted extraction, ultrasonication and reflux condensation.The maximum yield obtained is recorded. The TLC fingerprint profile for falvonoids rich fraction is also developed with the help of marker flavonoid.

B-78

MOLECULAR DOCKING: A NOVEL APPLIANCE FOR STRUCTURE BASED DRUG DISCOVERY

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Molecular docking has become an increasingly significant tool for drug discovery. In this review paper, we present a shortterm introduction of the available molecular docking methods, their development, and applications in drug discovery. The relevant basic theories, including sampling algorithms and scoring functions, are potted. Flexible receptors molecular docking approaches, especially those as well as backbone flexibility in receptors, are a challenge for obtainable docking methods. A newly developed Local Move Monte Carlo (LMMC) based approach is presented as a potential solution to flexible receptor docking problems. Molecular docking provides new approaches for drug discovery. Computer-Aided Drug Design and Discovery (CADDD) is a speedily rising area that has seen many successes in a very short period. Many massive pharmaceutical companies, in addition to the academe, adopt CADDD for drug lead discovery. Through Molecular Docking, the binding mode as well as the affinity of the complex formed is estimated and thus helpful in the Molecular Recognition Process docking on the way to the discovery of new drug leads.

B-79

SYNTHESIS, INSILICO DESIGN AND BIOLOGICAL EVALUATION OF DITHIOCARBAMATE DERIVATIVES AS CHEMOTHERAPEUTIC AGENTS

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Background: Dithiocarbamates are considered as an important motif owing to its substantial biological applications in medicinal chemistry. Concentrating on medicinal attributes of these compounds we got various synthetic approaches which leads in the drug discovery of small molecules. Recent advance study shows that they have anticancer, Antifungal, antibacterial, anti-Alzheimer, antitubercular, anti-glaucoma, anti-cholinergic, anti-inflammatory activities which elaborated with notable examples. Methods: The synthesis of this framework can easily be achieved via a one-pot reaction of primary/secondary amines, CS2, and alkyl or aralkyl [illegible] halides, either in the presence of a base or without base. Results: Present research work focuses on the synthesis, insilico drug design and evaluation of new dithiocarbamate derivatives as chemotherapeutic agents. All designed compounds were synthesized and characterized by using different spectroscopic techniques. Subsequently, subjected to molsoft, molinspiration, swiss admet and pkcsm to predict their molecular properties, which are important for the drug candidates. Simultaneously docking studies were performed using Autodock Vina software and evaluated for biological activity. Conclusion: The results indicate that, compounds satisfy to Lipinski's, as they should theoretically manifest good oral absorption. This acceptability with respect to Lipinski rule proves them as safe administered drugs and establishes their pharmacological activity. Among the synthesized compounds, 8 exhibited equivalent potency when compared standard drug Ceftriaxone. The docking study suggest that the hydrophobic interactions are important for antimicrobial activity rather than hydrogen bond interactions.

B-80

MOLECULAR DOCKING STUDIES OF 4-IODOSALICYLIC ACID HYDRAZONE DERIVATIVES AS ANTIMICROBIAL AGENTS

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4-iodosalicylic acid hydrazone derivatives have been reported to possess anti-microbial activity. Molecular docking was performed on a series of twenty two 4-iodosalicylic acid hydrazone derivatives on Penicillin Binding Protein (PDB code-3MZF, resolution: 1.5 Å, Imipenem, the co-crystallized ligand) using Molegro Virtual Docker 6.0. ISH16 [2-hydroxy-N-[(1H-imidazol-4-yl)methylidene]-4-iodobenzohydrazide] displayed four hydrogen bond interactions with Ser61, Ser110, His216, Thr214 and has equivalent binding affinity as compared to standard Ciprofloxacin. It exhibited significant binding on the active site in comparison to ciprofloxacin and cefuroxime. The binding interactions will be helpful in identifying the key areas of binding and will be fruitful in designing of new hydrazine derivatives as anti-microbial agents.

B-81

GSK-3 BETA INHIBITOR : AN EMERGING ANTI-ALZHEIMER AGENT WITH ITS INSILICO SCAFFOLD AND VIRTUAL SCREENING

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Alzheimer's disease (AD) is a neurological condition that affects older people and is progressive, multifaceted, and complicated in nature. Cholinesterase inhibitors, NMDA receptor antagonists, and their combination therapy, which is currently approved therapy, can temporarily relieve symptoms. GSK-3 Beta is an emerging target for the treatment of neuroinflammatory disorder like Alzheimer's disease. GSK-3 Beta is responsible for the hyperphosphorylation of tau protein which is the major component of neurofibrillary tangles (NFTs) and amyloid beta induced cell death that causes AD pathogenesis. For this, we have done virtual screening of various natural product database . Initially all the natural compounds were screened ,after that few of them were selected and ADMET is predicted and they were passed through BBB parameter. From the ADMET analysis, top compounds were chosen and employed for the docking studies by using Auto dock Vina. Then from that docking results have selected top compounds which are having the best activity against GSK-3 Beta and employed for the MDS studies. The development of potent and specific inhibitors is specific understanding molecular recognition and protein-ligand interactions.

B-82

QSAR & PHARMACOPHORIC ANALYSIS OF SOME 5-(SUBSTITUTED)-1H-PYRAZOLE-4-CARBONITRILES AS COX-II INHIBITORS

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Three Dimensional quantitative structure activity relationship (3D-QSAR) analysis using k-nearest neighbor molecular field analysis (kNN MFA) and pharmacophore studies were performed on data set of pyrazole derivatives [5-(substituted)-1-[5-(methylsulfonyl)-6-(methylsulfamoyl)pyridin-2-yl]-3-(di/tri-fluoromethyl)-1H-pyrazole-4-carbonitrile] to search the structural requirements for COX-II inhibitory activity. The best models exhibited the cross validated correlation coefficient (q2) value of 0.6955 and 0.6790 and predicted correlation coefficient (pred_r2) of 0.7718 and 0.4715 respectively. The pharmacophore was [illegible]

patients might involve reviewing the medical records of patients who have been prescribed these medications and assessing the frequency and severity of any adverse effects that have occurred. This could involve comparing the rates of adverse effects between the two medications and determining whether certain patient characteristics, such as age, sex, or coexisting medical conditions, are associated with a higher risk of adverse effects. The study might also assess the impact of different doses of the medications on the risk of adverse effects, and whether any measures, such as monitoring electrolyte levels or adjusting the dosage, can help to mitigate these effects.

B-180

ANALGESIC, ANTI-INFLAMMATORY, AND ANTIMICROBIAL ACTIVITIES OF NOVEL HETEROCYCLIC SUBSTITUTED BENZIMIDAZOLE SCAFFOLD ANALOGS

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In the current research, Analgesic, anti-inflammatory, and antimicrobial activities of novel heterocyclic substituted benzimidazole scaffold analogs were designed and synthesized. The objective behind the research was to synthesize novel analogs with negligible ulcer index, as new class of analgesic, anti-inflammatory and antimicrobial agents by hybrid approach. The synthesized compounds were characterized by FT-IR, 1H-NMR, Mass spectroscopy and by means of elemental analysis. From o-phenylene diamine and 4-amino benzoic acid, several novel benzimidazole scaffold containing isoxazole, pyrimidine, pyrazole moieties were synthesized by diazotization and coupling mechanism ethyl 2-(2-(4-(1H-benzimidazol-2-yl)phenyl)hydrazono)-2-cyanoacetate intermediate followed by dehydrative cyclization with amine derivatives. The coupling reagent containing active methylene group ethyl cyano acetate. All test compounds were screened for its analgesic, anti-inflammatory, and in vitro antimicrobial activity by tail flick method, carrageenan induced foot paw edema method and agar streak dilution method. Most active compounds were examined for its ulcerogenicity by pylorus ligation method. The relationship between chemical structure and biological activities of the test compounds were discussed. Among various tested compounds it was found that the pyrazolone derivative 4-(2-(4-(1H-Benzimidazole-2-yl)phenyl)hydrazone)-1-(4-methoxyphenyl)-3-amino-1H-pyrazol-5-one exhibited least ulcer index which are compared with that of standard Diclofenac than the isoxazolone derivatives and pyridimidinone derivatives. Thus, it can be concluded with the study one compound emerged out as the lead molecule with negligible ulcer index and designed good anti-bacterial activity. Nevertheless, further structural modification is designed to enhance these activities with the low ulcerogenicity index.

IN SILICO ANALYSIS AND MOLECULAR DOCKING STUDY FOR ANTI-DIABETIC AND ANTICONVULSANT ACTIVITY USING NOVEL MANNICH BASE BENZIMIDAZOLE DERIVATIVES

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The purpose of this study was to analyze the anti-diabetic and anti-convulsant activity of novel Mannich base benzimidazole derivatives, the main objective of molecular docking in current drug discovery is that it is employed to rationalize ligands activity towards a target of interest and to perform structure-based virtual screening. Docking is used for the virtual screening of databases and for the prediction of the strongest binders used on various scoring functions. In this we design mannich base benzimidazole derivatives which were used as a ligand for molecular interaction targeting NMDA and α -amylase receptors. For this study, we used PDB Lab, ChemDraww, and VLifeMDS 0.3 softwares.12 benzimidazole derivatives were designed and docked each derivative against four different NMDA receptors viz. 4NF8(A8,-5.430), 1PBQ(A4,-5.048), 3DEL(A4,-4.994), 3DEK(-5.182) and four different α -amylase receptors viz. 1HNA(A8,-5.048), 1BLI(A4,-4.702), 1SMD(A3-4.951), 4W93(A8,-5.212).from the current study we concluded that NMDA receptor PDB code 4NF8 shown significant anticonvulsant activity by A8 derivative with a minimum score of -5.430. Similarly, α -amylase receptor PDB code 1SMD showed significant antidiabetic activity by A8 derivative with a minimum score of -5.212. From the above discussion, we concluded that analogue was found to be more active for anticonvulsant and antidiabetic activity among all the derivatives.

B-207

MOLECULAR DESIGN, SYNTHESIS AND BIOLOGICAL EVALUATION OF NOVEL CYTOTOXIC TARGET PIM1 KINASE

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Cancer encompasses a collection of diseases in which normal cells progressively transform into malignant cells accompanied by an augmented proliferation, invasiveness and metastasis. Cancer treatment and prevention remains to be an unmet medical need despite the massive investments and advances in their therapeutic intervention. Targeted therapy of cancer is the new era of precision medicine that targets proteins, genes, and biomarkers that control how cancer cells grow, divide and spread. Targeted and specific inhibition of molecular oncogenic pathways is theorized to have a significant role in hindering the progression of a specific tumour and an effective strategy to combat cancer. The proviral integration site for Moloney murine leukemia virus 1 (Pim1) is a serine/threonine kinase and is able to promote cell proliferation, survival and drug resistance. Overexpression of Pim1 has been observed in B-lymphoid, myeloid cancers, hematopoietic malignancies, prostate, ovarian and uroepithelial cell carcinomas.

The present study involves the design, synthesis and characterization of a series of novel 5-bromo substituted isatin derivatives against PIM-1 kinase enzyme. The designed molecules were subjected to a quantitative estimate of drug-likeness properties and based on that molecules were screened for molecular docking studies to find the binding affinity against PIM-1 Kinase enzyme in order to rationalize their anticancer activity against SKV03 cell line. The compound 4d proved to be the best anticancer drug candidate with IC50 values of 9.70 μM when compared to standard drug doxorubicin with IC50 values of 9.70 μM, also compounds with good cytotoxic action were subjected to PIM-1 kinase assay activity. From the assay results, it is clear that compound 4d, showed the highest PIM-1 kinase inhibitory activity with IC50 value of 1.12 μM, and can be the promising lead as a PIM-1 kinase inhibitor.

B-208

SUBSTITUTED BENZYL TETRAHYDROPYRIDINES AS REVERSIBLE ACETYLCHOLINESTERASE ENZYME INHIBITORS AGAINST ALZHEIMER'S DISEASE

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Memory deficits found in the elderly population are characteristic of Alzheimer's disease (AD) and are partly due to cholinergic hypofunction; hyperactivity of acetylcholinesterase (AChE), disconnection between the cholinergic neurons and their early

formations which is linked to neurotoxicity. Inhibition of AChE evolves a strategy to restore lost cholinergic activity for the treatment of AD. In this regard, various third generation acetylcholinesterase (AChE) inhibitors have been designed, developed and tested. Many among them have bioavailability problems as well as lacking specificity to the enzyme in central nervous system (CNS), they also produce peripheral cholinergic side effects with this background, a novel series of N-substituted benzyl tetrahydropyridines (8a-e and 9a-e) have been designed. Molecular docking approach was used to design the molecules by considering their binding to the active site of amino acids of human AChE (PDB ID: 1B41) using the software MOE 2008.10. Further the designed derivatives were synthesized by suitable and convenient synthetic methods (scheme 1,2,3 and 4) and screened for their in-vitro inhibitory activity against rat brain, mice brain and human blood AChE. Among the tested compounds 8e showed better activity (IC50 = 20 ± 9.9 nM). Compared to the standard drug neostigmine (IC50 = 36 ± 8 nM) against human AChE.

B-209

SYNTHESIS AND DOCKING STUDIES OF PYRAZOLINE AS POTENTIAL EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) INHIBITORS

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A search for anticancer agents has prompted the design and synthesis of new chalcone, pyrazoline derivatives as potential epidermal growth factor receptor (EGFR) kinase inhibitors. Pyrazolines are one of the heterocyclic compounds with very important biological activities. In this view, it was proposed to synthesize some novel pyrazolines from chalcones. 3-Acetyl coumarin was treated with appropriate substituted benzaldehydes in the presence of ethanol as solvent and potassium hydroxide as basic medium to furnish some substituted chalcones. These chalcones were treated with thiosemicarbazide and condensation of chalcones of 3-acetyl coumarin yielding substituted 2-pyrazoline derivatives. The reaction progress for all synthesized compounds was checked by thin layer chromatography (TLC) and melting point techniques, the structure of synthesized compounds characterized using elemental analysis (CHN analysis) and spectroscopic techniques (FTIR).The Epidermal Growth Factor Receptor (known as EGFR) induces cell differentiation and proliferation upon activation through the binding of its ligands. Since EGFR is thought to be involved in the development of cancer, the identification of new target inhibitors is the most viable approach, which recently gained momentum as a potential anticancer therapy.These synthesized 2-pyrazoline derivatives' binding affinities were predicted by docking, which showed that chalcone and pyrazoline derivatives as EGFR-kinase inhibitors have good binding energies .

B-210

STEREOSELECTIVE SYNTHESIS OF SPIROPYROLIDINE DERIVATIVES AS ANTIPROLIFERATIVE AGENTS

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Spirocyclic compound plays important role in binding to target protein due to its 3D structu Several spiropyrrolidine derivatives are reported to be useful in targeting diseases like canc metabolic disorder, microbial infection and neurodegenerative diseases. Ninhydrin fu spiropyrrolidine derivatives especially are known to have cancer activity. In this paper, we h described a one-pot, multicomponent, [3+2] cycloaddition reaction to prepare spiropyrroli compounds in a highly stereoselective and regioselective method. The desired spiroc derivatives 5a-h were synthesised employing α,β-unsaturated carbonyl compoun dipolarophiles and azomethine ylides as dipoles which is produced in situ by reacting nin with sarcosine. The reaction conditions were optimized to achieve excellent regi stereoselectivity. The structure of all the eight spiro derivatives were confirmed from th 1H &13C NMR and ESI-MS spectra. The spiro-pyrrolidine compounds 5a-h were te their antineoplastic activity on sixty different cancer cell lines at National Cancer (NCI), Bethesda, USA. Among all, the spiropyrrolidine derivative 5e with 3-hydroxy a phenyl ring showed more than 50% growth inhibition against M14 melanoma c 10 μM concentration. These compounds further proved to be effective and anticancer molecules.

pyrimidine was able to form hydrogen bonding while rest of the part was involved in hydrophobic bonding. All the compounds were synthesized in good yield and confirmed by physical and spectral studies. In-vitro studies suggested that among all the synthesized compounds, 4-Phenyl-6-(phenylamino) pyrimidin-2-ol and 4-(4-hydroxy-3-methoxyphenyl)-6-(phenylamino) pyrimidin-2-ol when compared with standard drug Antipyrine while in-vivo data reflects compound above two compounds along with 4-(4-Nitrophenyl) amino}-6-phenylpyrimidine-2-ol and 4-(3-nitrophenyl)-6-(phenylamino) pyrimidin-2-ol were better, in controlling inflammation. The synthetic work Experimental studies reveals good result for compound having more than one electron releasing groups on aniline moiety of pyrimidine, also presence of electron withdrawing group favours for better anti-inflammatory activity on the target.

B-230

SYNTHESIS AND EVALUATION OF BIPHENYL-CURCUMIN ADDUCTS FOR THE TREATMENT OF POLY-CYSTIC OVARIAN SYNDROME

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Poly-cystic ovarian syndrome (PCOS) has affected one-third of the reproductive female population, leading to symptoms including Hirsutism, acne, insulin resistance, irregular menses and abnormal body weight. The main causality behind the disease is LH/FSH imbalance, eventually leading to androgen excess. Curcumin has proven its therapeutic utility against various diseases including PCOS. However, its bioavailability issues due to poor permeability across biological membrane has constantly challenged its use in the disease. Thus, we have designed and synthesized novel biphenyl adducts of curcumin, as potential anti-PCOS agents and evaluated there in vivo efficacy. A series of biphenyl-curcumin adducts was designed and docked against 17b-HSD5 enzyme. The compound with an excellent docking score was synthesized in the laboratory using conventional organic synthetic techniques. The structure of the synthesized compound was confirmed using elemental and spectral analytical techniques such as FT-IR, UV, 1H-NMR and 13C-NMR. Later, the compound was tested in vivo in Letrozole-induced PCOS in female wistar rats with curcumin as reference standard. The synthesized molecule demonstrated excellent anti-PCOS activity in vivo. The developed molecule may emerge as an excellent alternative for the treatment of polycystic ovarian syndrome.

B-231

GREEN SYNTHESIS OF 1,8- DIOXO-OCTAHYDROXANTHENE DERIVATIVES EXPLOITING WANG RESIN

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The green and sustainable chemistry has emerged as one of the key and priority research goals in academic as well as industrial R & D centers. However, in spite of devoting huge efforts in this area the development, establishing and implementation of eco-friendly process remained a challenging task. Indeed, the application of harmless, environmentally friendly and reusable reagents, catalysts and solvents in chemical reactions often require considerable research activities and efforts. Because of their importance and applications in different fields including organic and medicinal chemistry the 1,8-dioxo-octahydroxanthene and its derivatives have been found to be synthetic targets often in organic synthesis. Thus, over the years a range of reaction conditions commonly for the condensation of aldehyde with 1,3-cyclohexanedione or 5,5-dimethyl-1,3-cyclohexanedione leading to this class of O-heterocycles have been developed. In our effort, we have reported the synthesis of this class of compounds catalyzed by molecular iodine. of 1,8-dioxo-octahydroxanthenes against three cancer cell lines e.g. K562, Colo-205 and IMR32. On the other hand, similar and related nitrogen containing derivatives such as 1,8-dioxodecahydroacridines have been studied as potential inhibitors of sirtuins. All these reports prompted us to gain a convenient access to a library of molecules based on the 1,8-dioxo-octahydroxanthene scaffold for further pharmacological evaluation. We were mainly interested in an efficient green protocol for accessing these molecules.

B-232

DESIGN AND SYNTHESIS OF NOVEL VICINAL DIARYLTRIAZINE-BASED HETEROCYCLIC COMPOUNDS AS ANTI-ALZHEIMER AGENTS

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Alzheimer's disease (AD) is a chronic neurodegenerative disease that starts slowly and with time gets worsen. It was described by, and later named after, a German psychiatrist and pathologist Alois Alzheimer in 1906. The most common types of dementia, about 60-70% are caused due to Alzheimer's. Common symptoms include difficulty in remembering followed by problems with language, disorientation, mood swings, loss of motivation and behavioural issues in the later stages as the disease progress Alzheimer's disease (AD) is a chronic neurodegenerative disease that startsslowly and with time gets worsen. It was described by, and later named after, a German psychiatrist and pathologist Alois Alzheimer in 1906 . The most common types of dementia, about 60-70% are caused due to Alzheimer's. Common symptoms include difficulty in remembering followed by problems with language, disorientation, mood swings, loss of motivation and behavioural issues in the later stages as the disease progress Alzheimer's disease (AD) is a chronic neurodegenerative disease that starts slowly and with time gets worsen. It was described by, and later named after, a German psychiatrist and pathologist Alois Alzheimer in 1906. The most common types of dementia, about 60-70% are caused due to Alzheimer's. Common symptoms include difficulty in remembering followed by problems with language, disorientation, mood swings, loss of motivation and behavioural issues in the later stages as the diseaseprogressAlzheimer's disease (AD) is a chronic neurodegenerative disease that starts slowly and with time gets worsens. There is no such cure for AD. Currently, there are four primary therapeutic option approved by USFDA to treat the cognitive problems of AD wherein, three are acetylcholinesterase inhibitors (galantamine, rivastigmine and donepezil) while one N-Methyl-D-aspartate (NMDA) receptor blocker (memantine). As the disease is multifactorial, no medication has been shown to delay or halt the progression of the disease. An extensive literature survey on AChE inhibitors provided a sufficient platform to design a novel series of vicinal diaryltriazine derivatives. The designed novel vicinal diaryltriazine derivatives (16-33) have been successfully synthesized by using a convenient, mild and efficient protocol. The method offered the proposed final compounds with good yields and in considerably less time. All the synthesized compounds have been characterized by physical methods and their structures have been confirmed by IR, MASS and NMR spectroscopic methods. The synthesized compounds were evaluated for anti-Alzheimer activity. AChE and BuChE activity was carried out using Ellman's assay. Some of the compounds were found to be having potent activity.

B-233

SYNTHESIS, CHARACTERIZATION AND ANTI-BACTERIAL ACTIVITY OF NOVEL HETERO CYCLIC CHALCONES DERIVATIVES OF 2,4- THIAZOLIDINE DIONE

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Chalcone belonging to the flavonoid family are natural and synthetic products that have been reviewed for their wide range of biological activities as an-bacterial, anti-tumor, anti-inflammatory and anti-oxidant agents. They even show diverse spectrum of pharmacological properties and affinity for various biological targets. Recently appearance of drug-resistant pathogenic strains is most serious medical problem, so synthesis of novel TZD derivatives acts effectively against mostly all type of bacteria. Staphylococcus aureus is the one of the most successful modern pathogens. The same bacterium that lives as a skin and mucosal commensal can be transmitted in health care and community settings and causes severe infections. So there is a great challenge for a discovery of novel molecules against staphylococcus aureus and resistant strains. A series of heterocyclic chalcones analogues have been synthesized by knoevengel Condensation reaction between thiazolidine 2,4 dione and aromatic aldehydes followed by derivetization. The structures of synthesized chalcones were established by IR, H1NMR spectral data, elemental analysis and evaluated for anti-bacterial activity against gram positive and gram negative bacteria by cup plat method. Among the synthesized compounds 7a, 7b and 7c showed potent anti-bacterial activity against staphylococcus aureus. These results would provide promising access to future study about the development of novel anti-bacterial agents against bacterial infections. The potential molecules for future drug discovery, development, adjunct of antibiotics and medical devices coating.

C-64

[illegible] AND ANTI-DIABETIC POTENTIALS OF BERGAPTEN

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Aim: To Evaluate the In-vitro Hypolipidemic and Anti-diabetic potential of Bergapten. Materials and Methods: Method was used in the study. Bergapten a furanocoumarin was studied for [illegible] α amylase, α glucosidase and pancreatic lipase inhibitory activity. The inhibitory activity was evaluated for various different concentrations of bergapten. Diabetes mellitus is characterized by hyper-glycaemia increased levels of sugar in blood. A α amylase and α glucosidase inhibitors are used to achieve greater control over hyper-glycaemia in type 2 diabetes mellitus. Natural product has been a source of drugs to treat various chronic disorders due to reduced toxicity. The phytochemical bergapten exhibited significant α amylase, α glucosidase and pancreatic lipase inhibitory activities with an IC 50 value 8.54 µg/ml, 9.11 µg/ml and 7.22 µg/ml respectively. In the present study the pancreatic lipase, alpha amylase and alpha glucosidase inhibitors from natural sources was evaluated.

C-65

HERBAL RESPIRATORY MASK AS A PREVENTIVE MEASURE AGAINST COVID -19

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Respiratory masks remain as irreplaceable weapons against the spread of SARS-CoV-2, the virus that causes COVID-19. Studies hint that herbal masks might reduce the severity of infection against COVID-19. The present work was aimed to prepare and amalgamate the benefits of herbal masks in prevention of COVID-19. In the current research, a mixture of selected herbals namely, Neem, Turmeric, Licorice, Ajwain, Tulsi and Camphor which act synergistically as anti-microbial agents were selected and packed in a pouch. The pouches were placed in the pockets provided in the stitched cloth masks. The herbs contained in the masks were evaluated for their anti-microbial activity after Soxhlet extraction with alcohol against Staphylococcus pneumonia NCIM 5656, Streptococcus pyogenes NCIM 2608 and Aspergillus niger NCIM 563 at a concentration of 50, 100, 250 and 500 µg/ml for each microorganism, using standard agar disc diffusion technique. Zone of inhibition was compared with Gentamicin as standard disc for antibacterial and Amphotericin B for antifungal activity. Masks showed remarkable anti-microbial property against the tested organisms. Preliminary phytochemical analyses for the selected plants revealed the presence of various phytoconstituents that may be responsible for the significant anti-microbial property of the developed mask. To conclude, the masks were prepared with an aim to keep its design as simple as possible such that any small-scale manufacturers can prepare for commercial purpose and effective against respiratory infections caused by microbes. The herbal mask with their pleasant odour and anti-microbial activity might be helpful to boost customer compliance and protection against the existing pandemic.

C-66

REVIEW ON ANTI-CANCER HERBAL PLANTS AND THEIR PHYTOCHEMICALS.

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Cancer is a terrifying illness that ranks among the most pressing health concerns facing humanity and necessitates a proactive approach to treatment. A promising area for cancer research is plants, which serve as reservoirs for novel chemical entities. Chemotherapy has manifested some unpleasant side effects, despite being successful. Plants and plant-derived products, however, are changing the area as an easy, safe, environmentally friendly, inexpensive, quick, and less toxic alternative to conventional treatment methods. The actions of phytochemicals are focused on tumor cells and are selective in nature. A number of signaling pathways are involved in the complex phenomena known as carcinogenesis. Due to their therapeutic effects on the target event in several ways, phytochemicals are regarded as promising candidates for the development of anticancer drugs.Research is being done to identify possible candidates from these phytochemicals that can stop or reduce the proliferation of cancer cells without having any negative side effects. Numerous phytochemicals and the analogues they were generated from have been identified as possible cancer treatment options. Through this concise overview, an effort has been made to highlight the most recent advancements and significant achievements in Phytomolecules

based cancer therapeutics that target nuclear and cellular components.

C-67

IMPACT OF PESTICIDE AND FUNGICIDE ON SOIL MICRO-FLORA DEGRADATION AND THEIR RESIDUAL LEVELS ASSESSMENT IN PLANT AND SOIL

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The prolonged intensive and indiscriminate use of agrochemicals adversely affects the soil biodiversity, agricultural sustainability and food safety bringing in long-term harmful effects human and animal health. Most of the agrochemicals negatively affect soil microbial functions and biochemical processes. Here, we estimated the impact of fungicide and pesticide on the soil microflora in relation to soil health, fertility and their persistence level in plant and fruits. The response of soil microflora against Mancozeb (Fungicide), Chlorpyrifos (Pesticide) and Neem (Biopesticide) as an alternative were determined at field. We determined the linearity curve of Mancozeb (Fungicide), Chlorpyrifos (Pesticide) and Neem (Biopesticide) by established procedure. The lowest dosages corresponded to the maximum predicted environmental concentration (PEC) of pesticides applied in field conditions. Mancozeb and Chlorpyrifos (TEST gr.) was sprayed as 1gm/1000 ml and 1ml/1000 ml of water concentration respectively while Neem 1gm/1000ml (STD gr.) and without pesticide and fungicide (CTRL gr.) at 1150 feet2 of soil land were planned. The soil land was ploughed and planted with soil varities viz. forest sourced (FS), garden sourced (GS) and land sourced (LS) soil. Plant parts especially leaves, and fruits (Tomato, Capsicum and Rhizome (Raddish) were processed for homogenization and subsequent juice extracts for residual levels assessment of pesticide and fungicide presence. Since the agricultural pesticides that are exhaustively applied to land surface percolates down the groundwater and contaminate it. The recalcitrant nature of pesticide is harmful to the environment as it hampers the fertility and productivity of the soil.

C-68

SYNTHESIS, CHARACTERIZATION AND APPLICATION OF CATIONIC-MODIFIED BANANA STARCH AS A FLOCCULATING AGENT

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The study aimed to isolate banana starch (BS), synthesize Cationic banana starch (CBS), characterization, and its application as a flocculating agent. The sodium hydroxide (lye) solution was employed to isolate starch from unripe banana fruit. Starch was subjected esterification process for the synthesis of cationic starch by treating cationic moiety N-(3-chloro-2-hydroxypropyl) trimethyl ammonium chloride (CHPTAC) onto the backbone of banana starch, a branched polysaccharide. FTIR, SEM, TGA, DTG, XRD, and Elemental analysis were applied to characterize BS and CBS. The flocculation characteristics of these synthesized CBS were compared with flocculants. Synthesized CBS was slightly free-flowing and amorphous powder. The characterization exhibited that cationic moiety had been inserted into the BS backbone. Nitrogen is not present in significant concentrations in starch. The FTIR spectra and elemental analysis proved the cationization of BS. Cationizing and grafting BS with cationic monomer CHPTAC completely altered its granular structure. A study on flocculation characteristics reveals that CBS, having a longer CHPTAC chain, performs better than those with shorter chains. The optimized CBS was found to be comparable with some commercially available flocculants. Hence it can be concluded that incorporating a cationic moiety on the backbone of starch can be used as an effective flocculating agent.

C-69

PREPARATION AND PHYSIOCHEMICAL CHARACTERIZATION OF INDIAN TRADITIONAL MEDICINE: PRAVAL BHASMA BY USING MODERN ANALYTICAL TECHNIQUES.

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Praval is the calcareous skeleton of the marine organism called Anthezoa polypus and belongs to phylum Coelenterate. It is a natural source of rich calcium. In Indian Ayurvedic medicine it is widely used in Amlapitta, Netra Roga and Hridaya Roga and Ca deficiency. To ensure efficacy and safety parameters of prepared bhasma, the quality control tests of Rasa shastra like Varitara Rekhapurnatvam, Nishchandrata were performed. But these traditional tests do not ensure efficacy & safety of Bhasmas. Therefore modern techniques were used to study Chemical investigations of some commercial samples of Praval bhasma. The Praval bhasma was prepared strictly as per procedure mentioned in Ayurvedic formulary of India. To evaluate

C-75

[illegible] AND EVALUATION OF HERBAL DISINTEGRATING TABLET

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[illegible] of the present project work was to develop an herbal fast disintegrating tablet [illegible] herbal drug extract and its evaluation. [illegible] disintegrating tablets are the solid dosage forms which are formulated with the aim of improving the disintegrating and [illegible] of a pharmaceutical product. [illegible] [illegible] The tablets were formulated by direct compression technique [illegible] The disintegration time of tablet formulation were found to be 1.65 min. [illegible] tablets follow all required conditions.

C-76

[illegible] DENSITOMETRY METHOD FOR IDENTIFICATION OF CARBOHYDRATE AND PHENOLIC COMPOUNDS IN SELECTED MEDICINAL PLANTS

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[illegible] thin layer chromatography (HPTLC) is an analytical approach employed for [illegible] of group of compounds from hydro-alcoholic extract of numerous parts of plants, [illegible] bark, Cissus repanda root and Celosia argentea root. Simultaneous estimation [illegible] and phenolic compounds in mother extract and their fractions was [illegible] accomplished using HPTLC analysis method. The aim of research work is to [illegible] and justify a simple and speedy HPTLC technique for identification and quantification [illegible] phytochemicals from hydroalcoholic extract of Cordia macleodii, Cissus repanda and [illegible] argentea. Research work was carried out by using Merck Al plate's silica gel 60 F254. [illegible] phase used for carbohydrate and phenolic compounds were n-butanol: 2-propanol: [illegible] acid (30:50:10) and Ethyl acetate: Methyl ethyl ketone: Formic acid: Water [illegible] respectively. Densitometric detection of carbohydrate and phenolic compounds were [illegible] at visible light and 388 nm respectively. A significant Rf value 0.17, 0.40 was [illegible] for quantification of carbohydrates and percent content was found to be 0.14% and [illegible] in Cordia macleodii and Celosia argentea respectively. Rf value 0.76, 0.75 was selected [illegible] of gallic acid with 1.38%, 0.86% in Cordia macleodii extract and its fraction. [illegible] Rf value 0.79 was selected for estimation of gallic acid with 2.83% in Celosia [illegible] fraction. In conclusion, the report confirm the presence of fructose, glucose and gallic [illegible] Cordia macleodii and Celosia argentea extract but no fluorescence band was detected in [illegible] repanda. Further HPTLC method will helpful for standardization of herbal drugs.

C-77

[illegible]ATION OF ANTI-ACNE POTENTIAL OF CYNODON DACTYLON, BOMBAX CEIBA, CARUM CARVI AND BLUMEA ERIANTHA FORMULATION

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[illegible] a common skin disease, characterized by areas of skin with seborrhea, comedones, [illegible] nodules, pimples and possibly scarring. The term acne comes from a mutation of the [illegible] ακμή (akmē), literally "point, edge". The causative agent of acne is [illegible]bacterium acne. Acne develops as a result of- blockages in the follicles [illegible] formation of a plug of keratin and sebum. Major problem is the development [illegible] resistance and allergic reaction. The main objective of this study screen the anti-[illegible] of herbal formulation containing extracts of Cynodon dactylon, Bombax ceiba, [illegible] and Blumea eriantha. The collected aerial part of the plants was shade dried, [illegible] and successively extracted with hydroalcoholic solvents using [illegible] method. [illegible] The in vitro antimicrobial activity of hydroalcoholic extracts and formulated herbal anti-acne gel were carried out using [illegible] method. [illegible] Propionibacterium acne [illegible] The formulated herbal anti-acne gel has an excellent antimicrobial activity against Propionibacterium acne. [illegible] Thus the formulation can also be routinely used for acne.

C-78

IN VITRO PANCREATIC LIPASE, ALPHA AMYLASE AND ALPHA GLUCOSIDASE INHIBITORY ACTIVITIES OF THE PHYTOCHEMICAL BARBALOIN

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Background: Pancreatic lipase is an enzyme that hydrolyzes the lipids obtained from the diet which acts as an important target to treat obesity. The natural medicines that can inhibit pancreatic lipase enzyme and thus decrease absorption of dietary fat in the body gained much attention for the treatment and prevention of obesity. Diabetes mellitus is a metabolic disorder marked by an elevated level of glucose that circulates in the blood plasma. Alpha amylase and alpha glucosidase inhibitors are used to attain control over hyperglycemia in type 2 diabetes mellitus. In the present study the phytochemical, barbaloin was investigated for in-vitro pancreatic lipase, alpha (α)-amylase and alpha (α)-glucosidase inhibitory activities. Methods: The present study was designed to screen the novel pancreatic lipase, alpha amylase and alpha glucosidase inhibitors using a phytochemical, barbaloin, at different concentrations in order to minimize the toxicity and side effects of the inhibitors which are used at present to treat the disorders like obesity and hyperglycemia. Orlistat is used as standard for pancreatic lipase inhibitory activity and acarbose is used as standard for α-amylase and α-glucosidase inhibitory activities. Results: The phytochemical, barbaloin exhibited significant pancreatic lipase, α-amylase and α-glucosidase inhibitory activities with an IC50 value 5.52 μg/ml, 8.22μg/ml and 5.81μg/ml respectively and well compared with standard orlistat for pancreatic lipase and acarbose for alpha (α)-amylase and alpha (α)-glucosidase inhibitory activities respectively. Conclusion: From the above results, it is concluded that the phytochemical, barbaloin can be used as an adjuvant for the management of obesity and complications associated with diabetes mellitus after prior in-vivo studies.

C-79

EVALUATION OF THE NEUROPROTECTIVE ACTION OF AZADIRACHTA INDICA LEAVES EXTRACT IN STREPTOZOTOCIN INDUCED DIABETIC RODENT MODEL

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Among the most common and painful consequences of diabetes mellitus, diabetic peripheral neuropathy (DPN) is one of the most common. For DPN management, a variety of techniques have been used, ranging from traditional medicines to alternative approaches. Natural compounds are also in the focus of research to explore the possible treatment by replacing or by combining with the existing therapies. Different neurological changes in diabetic neuropathy and effect of the Azadirachta indica (neem) extract were assessed with nerve conduction velocity; biochemical and histological analysis in Streptozotocin induced diabetic mellitus. The therapeutic effect of the extract was evaluated with doses 100, 200 and 500mg/kg body weight for 4 weeks after induction of diabetes. The protective effect was evaluated by treating the animals with hydroalcoholic extract of neem leaves in 500mg/kg dose prior to the induction of diabetes and post-treatment with the standard drug Metformin (500mg/kg). Both resulted in significant reduction in blood glucose, additionally 500mg/kg body weight dose revealed the si[illegible] Neem leaf extract appears to be promising for future

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symptoms or as a supplement to healthy well-being. Amla mouth spray can come at one's fingertip for all preventive and supportive oral care. Due to its antioxidant property it reduces the chances of gum diseases, oral infections and cavities. Amla Extract is a rich source of Vitamin C and numerous studies has reported role of Amla in Immunity Stimulation, Digestive issues, Skin and Hair Related Problems. Such multi faceted drug when incorporated into a user-friendly mouth spray can make the formulation a one stop solution to Antioxidants and Vitamin C intake for common people. Amla's High Vitamin C content and Tannin Components makes it a single source for Improving Immune Function and Decreasing Cellular Damage and Inflammation protecting individual from opportunistic infections and ageing. Formulating amla into Mouth Spray will not only allow to reap all such health benefits but will also address the problems with amla's absorption into the human body.

C-91

MAGICAL BENEFITS OF TURMERIC AS A ANTISEPTIC PEEL OFF MASK

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Bacterial acne, pimples, dry rough skin is the problem of skin facing by a wide range of population now a days. This paper aims to formulate and evaluate the herbal peel off mask for bright, glowing and elastic skin with antiseptic action. Turmeric (Curcuma longa), aloe vera is the key ingredient used in peel off with other excipients like sandalwood oil, multani soil. All this ingredients were found to be most effective herbal ingredients for acne, bacterial growth modulator for pimples with least side effect as compared to the synthetic peel off present in market. Curcumin found in turmeric have flavonoid which have uncountable skin benefit rejuvenate skins and make it more elastic. This peel formed by using all water phase formulation. The parameters evaluated are homogeneity, spreadiability, irritancy test, physical test, and various microbiological test for antiseptic nature. This review helps to take forward the development of skin care product for therapeutic as well as beauty purposes.

C-92

QUALITATIVE AND QUANTITATIVE PHYTOCHEMICAL ANALYSIS OF LEAVES EXTRACT OF PLANT PLUMBAGO ZYLANICA

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Traditional system of medicine consists of large number of plants with various medicinal and pharmacological uses and hence represents a number of new bioactive molecules. Plumbago zeylanica Linn. is one of the well-known herbal plant throughout India and Asia as a remedy for skin diseases, infections, and intestinal worms. The plant has been found vital in different clinical conditions, especially inflammation, leprosy, scabies, ringworm, dermatitis, ulcers, hemorrhoids, and hookworm. Plumbago zeylanica is commonly known as white chitraka, belongs to family plumbaginaceae. Hence Its research proved that It is a great medicinal plants around the world for treatment of various diseases. So the present work aims the presence of various phytochemicals in the leaves extract of methanol and petroleum ether. The quantitative analysis was evaluated for total phenol, flavonoid, alkaloid, and saponin content in methanolic extracts of Plumbago zeylanica. The standard Gallic acid was used for estimation of total phenol content. Methanolic extract of Plumbago zeylanica phenol content showed concentration 20.13±0.230. Rutin as standard was used for estimation of total flavonoid content in different extracts of plant. The methanolic extract of Plumbago zeylanica showed highest flavanoidal content with concentration 57.33± 2.516 mg/RE/g. The saponin tannin content was determined with standard diosgenin and found 3.0±0.333. The total alkaloid content was estimated with standard atropine compound and showed highest alkaloidal content with concentration 56.66±2.081 and on such basis In future, herbal formulation can be prepare form leaves extract of P.zylanica.

C-93

EVALUATION OF POLYHERBAL SOAPS

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Most of the commercial soaps contain chemicals that can be harmful to the skin. Using a natural herbal soap can be a good alternative. They provide relaxation, healing from stress also. In this research work the basic objective of the present study involve the evaluation of formulated polyherbal soap using sample 1, sample 2 and sample 3 was evaluated for various physicochemical features. This study intended to evaluate the physicochemical parameters such as pH, foam height, foam capacity and total alkali content, TMF, volatile content, chloride content, and matter insoluble in water of different soap samples. pH of sample 1, sample 2 and sample 3 was found to be 10.78, 10.21, and 10.68 respectively. The alkali content of the soaps was found to be 2.42% 2.36%, and 2.57% respectively. The total fat matter of sample 1 was found to be 82% and that of sample 2 is 85%. Sample 3 was found to have the highest fat content of 72%. The percentage amount of total matter insoluble in water for sample 3 was found to be highest i.e. 80%. While for sample 1 it is 50% and sample 2 showing the least value of 15%. Sample 1 has the highest loss of volatile matter i.e. 11.25% and also foam capacity batch sample 1 was found to have the highest value of 15.03 min.

C-94

HEARBS USED IN SKIN DISORDER

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Skin diseases are a common health problem that affects everyone, from newborns to the elderly. These skin diseases aren't just simple; they cause harm to the skin in a variety of ways, and in many cases, these skin diseases are symptoms of more complicated underlying health issues, such as cancer, herpes, and cellulitis. As a result, there is a need to learn more about skin illnesses and their treatment with herbs, as herbs have more benefits than other pharmaceuticals and treatments. Plants are frequently utilised to treat a variety of ailments. These plants have been used from the beginning of time. They are inexpensive and secure. They are also valuable basic materials for the development of novel synthetic agents. This review looks at several plants that can be used to cure certain disorders.

C-95

STABILITY STUDIES OF SOME NEW POLYHERBAL TABLET FORMULATIONS FOR THE TREATMENT OF DIABETIS AND HYPERLIPIDEMIA

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In the present work, five different polyherbal tablets (F1 to F5) were formulated from three different standardized extracts, Momordica charantia (3% bitter principle), Cinnamomum cassia (10% total phenols) and Stevia rebaudiana by wet granulation using microcrystalline cellulose (MCC PH101) as diluents, Povidone K25 as a binder, magnesium stearate and talc as glidants. Methyl paraben (0.1%,0.2%) and propyl paraben (0.1%,0.2%) were used to prepare different composition of tablets (F2 to F5). Formulated tablets were evaluated for precompression parameters like angle of repose, bulk density, tapped density and compressibility index and post compression parameters like weight variation test, friability test, hardness test and stability studies. All the formulations (F1 to F5) were found to exhibit good precompression as well as postcompression parameters and were found to be within limits. Stability studies revealed that all the formulations F1 to F5 were stable upto 90 days. It was observed that the hardness of all the tablets (F1 to F5) increased from the 30 days to 90 days while their friability remained constant. Propyl paraben containing formulations F4 and F5 were found to be hard, less friable showing better dissolution than methyl paraben containing tablets (F2&F3). A concentration dependent effect of preservatives was observed among the tablets. The details pertaining to this work shall be discussed during the presentation.

C-96

COMPARATIVE PHYTOCHEMICAL EVALUATION OF NATURALLY GROWING AND COMMERCIALLY AVAILABLE BRAHMI (BACOPA MONNIERI)

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Purpose: Since time immemorial human beings are using natural products particularly of herbal origin for the treatment of variety of ailments. In last two decades use of herbs mentioned in Ayurveda or other traditional literature has been increased, while this increased demand has led to supply of substandard raw material. Hence, the purpose of present study is to standardize and compare physico-chemical parameter, morphological and microscopic characters of naturally growing and commercially available Brahmi. Methods: Extraction of crude material of different particle sizes (Mesh No. 10, 22, 44, 85) were done using cold maceration method with 200 ml of hydro-ethanol (70:30) for 7 days. Result:- Macroscopic examination of naturally growing and commercially available Brahmi provided detailed information regarding morphological and sensory characteristics such as size, shape, colour, taste, odour, etc. and

decreased in PCOS rats that were treated with β-caryophyllene ($p < 0.001$) ... antioxidant capacity ($p < 0.05$), glutathione peroxidase, and superoxide dismutase ... significantly increased ($p < 0.001$). Conclusion: Treatment With β-caryophyllene ... follicular quality by increasing antioxidant activities and scavenging oxidant levels in ... ovaries.

D-44

CHENOPODIUM ALBUM AMELIORATES ACETIC ACID INDUCED ULCERATIVE COLITIS IN RATS.

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...erative colitis (UC) is a chronic inflammatory disorder characterized by oxidative stress, ...ease of pro-inflammatory cytokines and colonic inflammation. Hydroalcoholic extract of ...enopodium album (HYCA) is considered to possess potent antioxidant and anti-inflammatory ...rties. The aim is to evaluate the possible mechanism of action of HYCA against acetic acid ...uced ulcerative colitis in rats. UC was induced in Wistar rats by intrarectal administration of ...(3%). HYCA was administered (100, 200, 400 mg/kg, p.o.) for 7 days after colitis was ...uced on the 4th day. Clinical, morphological, and biochemical changes were assessed in ...lon. Intrarectal administration of AA caused a significant reduction in percentage body ...ight, increased stool consistency score, macroscopic score, colon weight, weight to length ...io, ulcer area, ulcer index, etc. It increased MDA, MPO levels, and depleted GSH levels. It also ...sulted in histological changes in colon as mucosal damage associated with infiltration of ...flammatory cells in mucosa and submucosa. HYCA 400 mg/kg significantly restores loss of ...rcent body weight, reduced stool consistency score, ameliorates macroscopic changes, ...tological changes, colon weight to length ratio, ulcer index, reduced MPO, MDA level and ...stores GSH level when compared to Acetic acid induction control group. Results of the ...esent study indicate the anti-inflammatory and immunomodulatory potential of HYCA to heal ...tic acid-induced colitis in rats.

D-45

PHARMACOLOGICAL STUDIES ON COLLAGEN INDUCED ARTHRITIS IN SWISS ALBINO MICE

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...A is a chronic disease affecting over 1.3 million Americans and as much as 1% of the ...rldwide population. The specific cause of RA is not known, and as a result there is no known ...re for the disease. Aim and Objective: To develop &evaluate the effect the Mitocurcumin ...mg/kg twice a week) in Collagen induced arthritis model in mice. Material-Methods: Male ...wiss albino mice (20-25g),Freund's adjuvant (complete (FCA) and incomplete (IFA)), Bovine ...pe II collagen, Mitocurcumin (test sample), DMSO.Induction of Collagen Induced Arthritis ...withFCA & IFA was done ondays 0 (0.1 ml CFA emulsion at a site 0.5 cm away from the tail ...base) and 7 (booster dose of 0.1 ml of collagen and IFA emulsion at a site 1.5 cm away from the ...previous injection site i.e., from tail base.), in mice of groups 2 and 4 (Disease control and Drug ...treatment respectively) by intradermal injection. Mice were given1 mg/ml Mitocurcumin in 1% ...DMSO to groups 3 & 4 twice a week from the day of onset of initial symptoms of arthritis for 3 ...weeks.Assessment of disease development was done by measuring clinical parameters, ...biochemical parameters& cytokines using statistical analysis. Results: Global inflammatory ...response was indicated by increased IL-6, nitrite levels & lipidperoxidationand significant fall in ...SOD, CAT activities and GSH content in joint tissue of disease control mice.Significant reversal ...in biochemical and histopathological changes because of CFA immunization on intraperitoneal ...Mitocurcumin were observed; however, it is necessary to substantiate this effect using ...appropriately designed clinical studies.

D-46

ANTIOXIDANT ACTIVITY OF CAULIFLOWER (BRASSICA OLERACEA L.)

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...Recently, a number of studies on the health benefits associated with fruits, vegetables, herbs ...nd spices demonstrated that they possess potent antioxidant, anti-inflammatory, anti-...nutagenic, and anti-carcinogenic activity. The potential antioxidant activity of water and ...thanol extracts of cauliflower (Brassica oleracea L.) were investigated to evaluate their ...otential value as a natural ingredient for foods or cosmetic application. In this study ...ntioxidant activity was measured by 2,2'-azino-bis(3- ethylbenzthiazoline-6-sulfonic acid) (ABTS) radical scavenging, 1,1-diphenyl-2-picryl-hydrazyl free radical (DPPH·) scavenging, N,N-dimethyl-p-phenylenediamine dihydrochloride (DMPD) radical scavenging, superoxide anion ($O2^{\cdot -}$) radical scavenging, total antioxidant activity, reducing activity using $Fe+3-Fe+2$ transformation and CUPRAC assays, hydrogen peroxide ($H2O2$) scavenging, and ferrous metal chelating activity assays. The water extract of cauliflower (WEC) and ethanol extract of cauliflower (EEC), as antioxidants, neutralized the activity of radicals and inhibited the peroxidation reactions of linoleic acid emulsion. Total antioxidant activity was measured according to the ferric thiocyanate method. α-Tocopherol and trolox, a water soluble analogue of tocopherol, were used as the reference antioxidant compounds. WEC and EEC showed 88.6% and 80.1% inhibition of lipid peroxidation of linoleic acid emulsion, respectively, at the concentration of 30 μg ml−1. On the other hand, at the same concentration, the standard antioxidants α-tocopherol and trolox exhibited 68.1.4% and 81.3% inhibition of peroxidation of linoleic acid emulsion, respectively. In addition, WEC and EEC had effective DPPH·, ABTS·+, DMPD·+, and superoxide anion radical scavenging, hydrogen peroxide scavenging, total reducing power, and metal chelating of ferrous ion activity. Also, those various antioxidant activities were compared to α-tocopherol and trolox as references antioxidants.

D-47

EVALUATION OF FLAVONOID RICH EXTRACT OF TRIDAX PROCUMBENS LINN FOR ACUTE TOXICITY PROFILE AND ANTIUROLITHIATIC ACTIVITY

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Now-a-days interest of human in the use of traditional medicines has growing. To improve the acceptance, the variety of dosage forms were formulated and developed. In the present work Tridax procumbens has been developed in the form of liquid dosage. The developed formulation evaluated for different parameters and antilithiatic activity. Tridax procumbens (leaves and stem) was extracted using soxhlet apparatus. The extract was further used to develop formulation of the syrup. The physicochemical properties of the syrup were studied. The syrup was evaluated for antiurolithiatic action. The accelerated stability of syrup was evaluated during the period 6 months.The product was light brown semi-transparent syrup with sweet taste and characteristic odor. The pH and density were found to be 5.39 ± 0.01, 1.061 ± 0.13 g/ml respectively for selected formulation (F2). There was no significant change observed in the evaluation parameters during the accelerated stability studies. The overall results concluded that the formulated syrup of Tridax showed to good antiurolithic property. This herbal syrup successfully reduced kidney stones by a non-toxic and convenient way.

D-48

EVALUATION OF CHEMOPREVENTIVE EFFECT OF AQUEOUS EXTRACT OF ABRUS PRECATORIOUS AGAINST DMBA INDUCED BREAST CANCER IN RATS

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Aim & Objectives: This study was aimed at evaluating the chemopreventive potential of aqueous leaf extract of Abrus Precatorious (AP) on DMBA-induced breast cancer in rats. Materials and Methods: 42 female Sprague Dawley rats were divided in to seven groups and DMBA was administered through oropharyngeal route to the rats to induce breast cancer. Hot extraction protocol was employed in the preparation of aqueous extract of AP leaves. The histopathology of tumors, their size, multiplicity and morphological changes in mammary gland tumors were assessed to check its effect at cellular level. The effect of AP extract on antioxidant status was evaluated by measuring oxidative stress markers like SOD, Catalase, GSH and MDA. Pharmacokinetic effect of AP on Doxorubicin was assessed by determining its plasma concentration using HPLC. Results: There was a significant ($P < 0.001$) weight difference between the control and treatment groups. We found difference in the median number of tumors and their volume between the control and treatment groups. Compared to DMBA treated group, in extract treated group less hybernoma, necrosis and inflammation was observed in histopthology. There was a significant ($P < 0.001$) difference in antioxidative activity of AP, since a restoration of the GSH pool and decreased amount of hydroperoxide were observed. We found increase in plasma concentration of doxorubicin in combination o Abrus Precatorious extract in rat plasma. Conclusion: This study has shown that the aqueou leaf extract of Abrus Precatorious has chemopreventive effect against DMBA-induced brea cancer in rats.

...is a nerve growth and repair. However, later in life, the nerve cells are destroyed by ... form, leading to the loss of thought and memory in Alzheimer's disease. A new ... test has been developed that can measure the amount of amyloid beta oligomers in ... which could be used to predict future diagnosis of Alzheimer's disease. Many ... receive an Alzheimer's diagnosis only after exhibiting well-known symptoms of ... such as memory loss. At that point, the best treatments options are slow further ... of symptoms. However, research shows that the seeds of Alzheimer's disease can ... years earlier, long before cognitive deficits become apparent, making diagnosis ... These seeds are amyloid beta proteins that misfold and clump together to form small ... called oligomers. That "toxic" oligomers of amyloid beta are thought to develop into ... Disease. That Oligomer form a structure known as an alpha sheet (α-sheet). ... Development and testing of a soluble oligomer binding assay for detection of ... toxic oligomers." Soluble Oligomer Binding Assay(SOBA) that can measure ... amyloid beta (Aβ) peptide oligomers in blood and detect Alzheimer's disease at all ... including in presymptomatic cases. SOBA uses a synthetic α-sheet that can bind to ... oligomers in samples of either cerebrospinal fluid or blood. SOBA had detected ... oligomers before symptoms emerged. It can detect early Alzheimer's disease ... to the development of clinical symptoms.

D-55

YAMANAKA- A REVERSE EPIGENETIC AGING FACTOR

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... one of the major concern for the youth. At the biological level, ageing results from the ... and cellular damage over time which leads to a gradual decrease in physical and ... capacity, a growing risk of disease and ultimately death. It is a genetically determined ... Causes of aging include but are not limited to oxidative stress, glycation, telomere ... side reactions, mutations, aggregation of proteins, DNA damage. .The purpose of ... medicine is to slow, stop, or reverse the aging process . Anti-aging medicine is ... as a growing industry. The causes for aging are initiated by one of the enzyme sirtuins ... are class III nicotinamide adenine dinucleotide(NAD) -dependent histone ... (HDACs) that regulate a number of physiological processes, play important roles ... regulation of metabolism, aging, oncogenesis and cancer progression. Sirtuins involves in ... DNA repairing, chromatin regulation, mitochondrial function, cell cycle control. ... regulates NF-KB, FOXO3, p53, p73, E2F1, Ku70 which decreases apoptosis, increases ... repair, increases oxidative stress resistance, decreases inflammatory response which ... to longevity of cell survival. Foods that contain sirtuins activators include: blackcurrants, ... cocoa, dates, green tea, kale, miso, onions, olives and extra-virgin olive oil, parsley, tofu ... soy products, turmeric and walnuts. sirtuins are activated by NAMN, NMN, NMNH. ... studies said that Yamanaka factors reverse the cell age. It takes around 50 days of ... to these molecules for normal cells to be reprogrammed into induced pluripotent ... cells (iPSCs) which makes rejuvenation of normal cell without losing their previous ... ality.

D-56

ASSESSMENT OF ANTI DIABETIC POTENTIAL OF COMBRETUM ROXBURGHII BY INVITRO

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... the figure of persons bear from diabetes is trust to be standup by degrees and the ... antidiabetic treatments are often appear to have adverse side effects. Traditional ... plant use has reveal for the growth of low-cost antidiabetic agents with hardly any ... effects. The focus of this work was to explore the anti diabetic pursuit of methanolic leaf ... produced from Combretum roxburghii by invitro. The results of the plant extracts on ... discharge in Hep G2 cells were explored using cell culture policy. Alpha amylase, alpha ... inhibition assays were also carried out. Both MECR and EACR extracts ... elevated glucose uptake in Hep G2 cell lines, with potency remarkably elevated ... positive control, berberine. The MECR extract showed higher levels of inhibition on α- ... and α-glucosidase than EACR. The pursuit were not remarkably non-identical from ... The MECR and EACR extracts of C.roxburghii authorised, for that reason , carry ... working and corresponding non- toxic hypoglycaemic chemicals, which may be ... replacement in the therapy of diabetes mellitus.

D-57

ANTIOXIDANT ACTIVITY OF CAULIFLOWER (BRASSICA OLERACEA L.)

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Recently, a number of studies on the health benefits associated with fruits, vegetables, herbs and spices demonstrated that they possess potent antioxidant, anti-inflammatory, anti-mutagenic, and anti-carcinogenic activity. The potential antioxidant activity of water and ethanol extracts of cauliflower (Brassica oleracea L.) were investigated to evaluate their potential value as a natural ingredient for foods or cosmetic application. In this study antioxidant activity was measured by 2,2' azino-bis(3- ethylbenzthiazoline-6-sulfonic acid (ABTS) radical scavenging, 1,1-diphenyl-2-picryl-hydrazyl free radical (DPPH·) scavenging, N,N-dimethyl-p-phenylenediamine dihydrochloride (DMPD) radical scavenging, superoxide anion ($O2^{-}$) radical scavenging, total antioxidant activity, reducing activity using Fe^{+3}-Fe^{+2} transformation and CUPRAC assays, hydrogen peroxide (H_2O_2) scavenging, and ferrous metal chelating activity assays. The water extract of cauliflower (WEC) and ethanol extract of cauliflower (EEC), as antioxidants, neutralized the activity of radicals and inhibited the peroxidation reactions of linoleic acid emulsion. Total antioxidant activity was measured according to the ferric thiocyanate method. α-Tocopherol and trolox, a water-soluble analogue of tocopherol, were used as the reference antioxidant compounds. WEC and EEC showed 88.6% and 80.1% inhibition of lipid peroxidation of linoleic acid emulsion, respectively, at the concentration of 30 μg ml–1. On the other hand, at the same concentration, the standard antioxidants α-tocopherol and trolox exhibited 88.1.4% and 81.3% inhibition of peroxidation of linoleic acid emulsion, respectively. In addition, WEC and EEC had effective DPPH·, $ABTS^{+}$, $DMPD^{+}$, and superoxide anion radical scavenging, hydrogen peroxide scavenging, total reducing power, and metal chelating of ferrous ion activity. Also, those various antioxidant activities were compared to α-tocopherol and trolox as references antioxidants.

D-58

ASSESSMENT OF ANTI-DIABETIC ACTIVITY OF ETHANOLIC EXTRACT OF ROOTS OF SOLANUM NIGRUM IN STREPTOZOTOCIN INDUCED DIABETES IN RATS

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Hyperglycemia and decreased metabolic processes are two symptoms of the metabolic disease diabetes. Numerous allopathic medications, including Gleptines, Metformin, and Glibenclamide are available to treat diabetes, but their long-term use is linked with adverse effects and the development of tolerance, necessitating the use of numerous medications. Ayurveda, our ancient medical system, states that there were numerous medicinal plants used in antiquity that could treat diabetes and had benefits that were comparable to those of allopathic medications while being completely side effect free. All of these facts encouraged us to start the current investigation into Solanum nigrum (EERSN) antidiabetic potential in an animal model of diabetes caused by streptozotocin. Streptozotocin at a dose of 50 mg/kg (body weight) was used to successfully induce diabetes in this investigation. Animals that had glucose (blood) levels higher than 200 mg/dl after 48 hours were appended in the study. The elevated glucose levels were then significantly lowered and other altered parameters of cholesterol, LDL, HDL, and triglycerides were reversed after 21 days of treatment with ethanolic extract of roots of Solanum nigrum in these diabetic rats. The results of the current investigation suggest that Solanum nigrum roots (400 mg/kg) are effective in the treatment of diabetes mellitus.

D-59

EVALUATION OF CHEMOPREVENTIVE EFFECT OF AQUEOUS EXTRACT OF ABRUS PRECATORIOUS AGAINST DMBA INDUCED BREAST CANCER IN RATS

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Aim & Objectives: This study was aimed at evaluating the chemopreventive potential of aqueous leaf extract of Abrus Precatorious (AP) on DMBA-induced-breast cancer in rats. Materials and Methods: 42 female Sprague Dawley rats were divided in to seven groups and DMBA was administered through oropharyngeal route to the rats to induce breast cancer. Hot extraction protocol was employed in the preparation of aqueous extract of AP leaves. The histopathology of tumors, their size, multiplicity and morphological changes in mammary gland tumors were assessed to check its effect at cellular level. The effect of AP extract on antioxidant status was evaluated by measuring oxidative stress markers like SOD, Catalase,

D-97

AMELIORATIVE ROLE OF PRAVASTATIN ON METHIONINE-INDUCED HYPERHOMOCYSTEINEMIA AND HAEMATOLOGICAL CHANGES IN ALBINO RATS

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The study was designed to investigate the ameliorative effect of pravastatin on methionine-induced hyperhomocysteinaemia and haematological changes in albino rats. Methionine (orally) administration to pathogenic control rats (i.e. group II) for 30 days significantly ($P<0.01$) increased the levels of homocysteine , total cholesterol (TC), low density lipoprotein (LDL-C), very low density lipoprotein (VLDL-C) and triglycerides(TGs)and decreased the levels of high density lipoprotein (HDL-C) in serum. Haematological observations of the peripheral blood smears of pathogenic rats fed with methionine also showed crenation of RBCs cell membrane and significant increase in total leucocyte count, differential leucocyte count and platelet counts with significant increase in the mean haemoglobin levels as compared to vehicle control rats. Administration of pravastatin (10mg/kg body weight) to hyperhomocysteinaemia rats significantly decreased level of homocysteine,TC,TGs,LDL-C,VLDL-C and increased the levels of HDL-C in serum .The present results provide clear evidence that oral treatment with pravastatin exhibit homocysteine and lipid lowering activity and also reversal of haematological changes induced by methionine in albino rats .

D-98

ANTIOXIDANT ACTIVITY OF - β -CARYOPHYLLENE ON OVERIAN MORPHOLOGY AGAINST ESTRADIOL VALERATE INDUCED POLYCYSTIC OVERIAN IN FEMALE WISTER RATS

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The present study examines the antioxidant effects of β -caryophyllene, on ovarian tissue in estradiol valerate induced PCOS in rats. Oxidative stress is the most frequent cause of female infertility disorders including polycystic ovary syndrome (PCOS). β -caryophyllene, as a major component of soybean isoflavone scavenges free radicals by antioxidant activities. In histological observation, the induced PCOS rats displayed a greater number of atretic follicles. The follicular quality in - β -caryophyllene treated rats was similar to the control groups. The plasma and ovaries malondialdehyde levels significantly increased in PCOS rats ($p < 0.001$), while the total antioxidant capacity levels, glutathione peroxidase, and superoxide dismutase activities significantly decreased ($p < 0.001$). The plasma and ovary malondialdehyde levels significantly decreased in PCOS rats that were treated with - β -caryophyllene ($p < 0.001$) and the total antioxidant capacity (p 0.05), glutathione peroxidase, and superoxide dismutase activities significantly increased (p 0.001). Conclusion:

Treatment With - β -caryophyllene preserved follicular quality by increasing antioxidant activities and scavenging oxidant levels in PCOS rats.

D-99

EVALUATION OF ANTI-DIABETIC ACTIVITY OF ETHANOLIC EXTRACT OF ROOTS OF SOLANUM NIGRUM IN ALLOXAN INDUCED DIABETES IN RATS

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Worldwide, diabetes is a metabolic condition. According to the International Diabetes Federation (IDF), 366 million people worldwide had diabetes in 2011, and that number is expected to rise to 552 million by the year 2050. The number of diabetics in India was anticipated to be 40 million in 2007, and by 2025, it was possible to predict that this number would reach over 70 million. The present study was to evaluate the anti-diabetic activity of ethanolic extract of roots of Solanum nigrum (EERSN) in rats. Alloxan hydrate was given to rats at a dose of 150 mg/kg i.p. after 48 hours, and the EERSN was given at a dose of 200 mg/kg and 400 mg/kg p.o. for a total of 21 days. Serum biochemical factors such as glucose, total cholesterol, triglycerides, LDL, HDL, and VLDL were examined at the conclusion of the experimental research. After 21 days of therapy with an ethanolic extract of the roots of Solanum nigrum in rats, the high glucose levels were then greatly reduced, and other altered parameters of total cholesterol, triglycerides, LDL, and VLDL levels, but decreased HDL levels, were reversed. The results of the current investigation suggest that Solanum nigrum roots are effective in the treatment of diabetes mellitus. In diabetic model rats, Solanum nigrum roots at a dose of 400 mg/kg significantly decreased glucose, TC, TG, LDL, and VLDL levels while significantly increasing HDL levels. Solanum nigrum roots may therefore have a role in preventing the development of atherosclerosis and coronary heart disease.

D-100

PHARMACOLOGICAL SCREENING OF ANTISNAKE VENOM AND CARDIOPROTECTIVE ACTIVITY OF ORTHOSIPHON STAMINEUS LEAVES IN EXPERIMENTAL ANIMALS

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In India, it is conservatively estimated that up to 20,000 people die annually from snakebites.Various medicinal plants and their compounds reported against snake venom activity. An ethno botanical survey of folk plants used in snake bites in southern parts of Tamil Nadu reports the use of 72 medicinal plants in snake bites. AIM:The Plant Orthosiphon stamineus was authenticated and evaluating the Preliminary phyto chemical screening,Anti-snake venom andCardioprotective activity. METHODOLOGY: Snake venom of NajaNaja was dissolved in 0.9% (w/v) saline, centrifuged and the supernatant was used. Thegroups were treated with venom, after 5 min of oral administration of anti snake venom serum (10mg/kg) and methanolic extracts (200, 400mg/kg), respectively. The mice were observed for 24 hours for the number of mice which were survived.OSE (400 mg kg-1, respectively) Showed marked improvement. RESULT: The study observed that the survival of the mice increased progressively with increasing the dose of the extract in a dose dependant manner. α - Cobratoxin is a substance of the venom of NajaNaja. It is a nicotinic acetylcholine receptor (nAChR) antagonist which binds antagonistically and slowly reversible to muscle-type and neuronal type nAChRs2. This bond will block the receptor's ability to bind acetylcholine and thereby inhibits the ion flow through the postsynaptic membrane, which will lead to paralysation. CONCLUSION: The methanolic extract of O.stamineuspossess significant anti-snake venom activity. Further studies are required to confirm the exact mechanism underlying.

D-101

INVOLVEMENT OF GABA AND BDNF RECEPTOR IN NEUROSUPPORTIVE EFFECT OF EPIPHYLLUM OXYPETALUM AND TRADESCANTIA SPATHACEA IN PTZ KINDLED RAT MODEL

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Epilepsy is being oldest neurological disorders with bad social stigma and profoundly affects many aspects of quality of life. Natural products significantly contributed to the discovery of modern drugs and are alternative source for antiepileptic drugs with better safety and efficacy profiles. Current study identifies plants-Epiphyllum Oxypetalum and Tradescantia Spathacea, being folklore medicine using by tribal species for epilepsy and anxiety as traditional medicine without any scientific study support. Crude exacts of the study plants were tested for antiepileptic action. The Important natural components present in extracts were identified through validated HPLC method and docked with GABA-A and BDNF receptors to check possible interactions in our previous studies. Anti-epileptic properties of these plants through PTZ kindled model using 160 animals in 8 validated groups were studied. Biomarkers like GABA-T, AchE checked through ELISA kits. Electrolyte balance was checked. Associated neuroprotective effect observed through established behavioral tests (Analysis of spatial learning and emotional memory performance using Morris Water Maze). Antioxidant activities (Estimation of oxidative biomarkers like MDA, GSH, SOD, Total protein from brain homogenate) were assessed through ANOVA and p Value determined. Prolongation of latency for onset of seizures and decrease the susceptibility for higher grade of seizures when PTZ challenge was applied as compared to control is observed. Reduced oxidative stress observed. Neuroprotective action confirmed through improved emotional learning and memory parameters like Short escape latency, Quick exploration and less retention time. Vital organ toxicity parameter is checked and noted accordingly.

[illegible] toxic effects of diazepam [illegible] motor coordination [illegible]. Therefore, a [illegible] role of the [illegible] receptors [illegible] motor-impairing effects of diazepam is proposed [illegible] for the mitigation and management of [illegible].

D-108

[illegible] HEPATOPROTECTIVE ACTIVITY OF METHANOLIC EXTRACT OF ABRUS PRECATORIUS IN CARBON TETRACHLORIDE AND ETHANOL INDUCED HEPATOTOXICITY IN RATS

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[illegible] the hepatoprotective activity of the methanolic extract of Abrus precatorious in [illegible] and ethanol induced hepatotoxicity in rats. Method: Acute toxicity study, [illegible] activity, estimation of biochemical parameters and histopathological studies [illegible]. Acute toxicity studies was conducted in mice for a period of 14 days. [illegible] is a traditional medicinal plant that is commonly used to treat various [illegible] like diuretics, boils, convulsions etc., in India. The preliminary phytochemical [illegible] shows the presence of Alkaloids, triterpenes, saponins, flavonoids etc. The [illegible] activity of the methanolic extract of Abrusprecatorious(125mg/kg, [illegible], 500mg/kgb/w)against carbontetrachloride (1:1 olive oil and ccl4)and Ethanol [illegible] with corn oil 10ml/kginduced toxicity in rats was studied. The development of [illegible] induced by carbontetrachloride is promoted by oxidative stress [illegible] and hydrogen peroxide. carbontetrachloride and ethanol treated groups [illegible] ($p < 0.01$) elevated the SGOT,SGPT,ALP, proteins and total bilurubin which were [illegible] towards normalization by standard and APME induced groups. Dose 250mg/kg of [illegible] significantly decreased the increased serum enzyme levels. Histological analysis of [illegible] of these toxicity induced rats revealed marked necro inflammatory changes by [illegible]. The activity of Abrusprecatorious methnolic extract at 250mg/kg b/w was comparable to [illegible] drug silymarin (50mg/kgb/w).

D-109

ETHICALLY CONTROVERSIAL & SURGICALLY CHALLENGING: HEAD TRANSPLANTATION

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[illegible] turn of the last century, the prospect of head transplantation has captured the [illegible] of scientists and the general public. Recently, head transplant has regained [illegible] in popular media, as neurosurgeons have proposed performing this procedure in 2017. [illegible] impact of such a procedure determine if it is even technically possible to perform [illegible] procedure on humans today. Head body transplantation concept was beginning early [illegible] people have discussed the possibility of head transplantation. In 1908, Carrel and [illegible] physiologist, Dr. Charles Guthrie, performed the first dog head transplantation but [illegible] survive. In 1950 surgeon Dr. Vladmir Demikhov grafted the upper bodies of young [illegible] the shoulders of other dogs. In 1965, Robert White, an American neurosurgeon, also [illegible] head transplantation. He performed four cephalosomatic associations between [illegible] monkey heads and isolated monkey bodies, employing direct suture of the carotid and [illegible]. In 2013 Canavero proposed Human head transplant, a procedure involving a clean [illegible] spinal cord to minimize damage and using polyethylene glycol to fuse the spinal cord. [illegible] Head transplantation in mice: Xiao-Ping Ren and colleagues in China report a head-[illegible] experiment in mice, resulting in a white mouse with a black head, and vice versa, [illegible] for 3 hours. In 2015 Canavero details head transplant procedure. He proposes [illegible] the head and donor body to limit cell damage [illegible] and fusing the spinal [illegible] a process called GEMINI.

D-110

EXPLORING NEUROBEHAVIORAL POTENTIAL OF β-SITOSTEROL ON EMPTY BOTTLE STRESS INDUCTION

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Neurobehavioral disorders are group of conditions associated with brain impairments and behavioral changes [illegible]. The objective of study was screening of β-Sitosterol effects in Swiss albino mice subjected to psychological stress using the paradigm of Empty Bottle Stress Induction (EBSI) to evaluate behavioral parameters. The behavioral experiment included attacking, [illegible] empty bottle and [illegible], exploring, rearing and [illegible], and grooming. Mice were randomly divided into control group (C), empty bottle stimulated group (EB), no bottle group (NB), free drinking group (FD) containing 6 mice in each group. The study had 3 Phases. I phase ([illegible] days), mice had free access to water. In II phase (10 days), mice were trained to drink water twice a day. In III phase (12 days), mice in the EB group were randomly given empty water bottles during one of the two watering periods. Mice in the NB group were given neither water bottle nor water during the same watering periods. The EBSI used as a model of psychological stress induced behavioral changes in mice observed by increased attacking, grooming and exploring behavior. Result suggests that after the oral administration of β-sitosterol ([illegible]mg/kg p.o.), the behavioral activity of mice like attacking, grooming and exploring of mice got reduced. The study showed promising anti-anxiety and anti-stress properties which can be further evaluated for neuroimmunomodulation.

D-111

PHARMACOLOGICAL EVALUATION OF PHENOTHIAZINE DERIVATIVE FOR THE TREATMENT OF RHEUMATOID ARTHRITIS IN ANIMAL MODEL

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Despite the permanent progress in medical sciences, the effective treatment of Rheumatoid Arthritis still partly remains elusive. Rheumatoid arthritis (RA) is an autoimmune inflammatory disease, withstanding the invention of several drugs there's more of a went to introduce newer, more secure, and extra powerful reasserts of drugs. Present research work is based on the hypothesis that established antipsychotics (Phenothiazine derivative) is shown effective result for the treatment of RA. The different biomarkers such as TNF α, interleukin (IL)-1β), chemokines, matrix metalloproteinases ((MMP)-3 and -9), and some angiogenic factors are responsible for inflammation in RA. The progression of inflammation is processed by increased expression of Cyclooxygenase-2 (COX-2). The inhibition of overexpression of COX-2 is the prime target site for the treatment of RA. The aim of this study is to establish anti-inflammatory and anti-arthritic property of the Phenothiazine derivative (Flupentixol) through performing different in Vitro assay. In Vitro anti-inflammatory (Fresh Hen's Egg Albumin and Bovine Serum Albumin) protein denaturation assay and In Vitro anti-inflammatory HRBC membrane stabilization method assay was performed. The treatment of Phenothiazine derivative (Flupentixol) was given the nearest result in the comparison with the treatment of standard Diclofenac sodium injection IP approximately in case of percentage protection and percentage of inhibition. The present investigation has been established on the basis of hypothesis which showed that Phenothiazine derivative (Flupentixol) has anti-inflammatory activity which gives us a new treatment strategy for RA in biomedical research.

D-112

DIABETIC HYPERTENSION: REVIEW ON THE MAJOR SECONDARY COMPLICATIONS OF DIABETES

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Worldwide, Hypertension is a significant factor in diabetic patients' deaths. An elevated risk of fatal infections and COVID-19 is shown in people who also have diabetes and hypertension. A higher risk of sudden cardiac arrest is linked to diabetes mellitus and hypertension, especially impaired fasting glucose, and prehypertension. The risk of mortality, hospitalization, and disability is significantly increased by comorbidities such as diabetes and hypertension. Diabetes, hypertension, and frailty all raise the risk of cognitive and physical decline as well as chronic kidney damage. This review does a good job of explaining diseases like insulin resistance and [illegible] as well as their connection to cardiovascular disease. A high

D-135

PHARMACOKINETIC & TOXICITY (ADMET) PROFILING: AN OVERVIEW

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Drug discovery and development is very complex, costly and timely process, which includes disease selection, target identification, lead identification, validation & optimization, preclinical and clinical studies. During this exhaustive process, several drug candidates fail to become a drug because of improper pharmacokinetic properties and toxicities. Therefore, an effective molecule with better ADMET can well stand in drug development process. Consequently, the present review elaborates about in-vivo studies, In-vitro assay and In-silico prediction as profound approaches for ADMET studies. In-vivo studies include experimental animal testing, which plays an essential role in the evaluation of drug safety before progression into clinical trials. Several in vivo tests have been developed to measure bioavailability, metabolic rate, excretion rate and toxicity of potential therapeutic molecules. In-vitro studies is conducted to facilitate selection of drug candidates with the best safety and pharmacological profile while understanding the mechanisms behind their activity. Parallel Membrane Permeability Assay (PMPA), P glycoprotein cell culture assay, hepatocyte cell culture assay, MTT assay, Ames assay, hERG (human Ether a go-go Related Gene) assay are

D-137

FERULIC ACID AND PROTOCATECHUIC ACID AMELIORATES EXPERIMENTALLY INDUCED DIABETIC NEPHROPATHY IN RAT THROUGH ANTIOXIDANT CAPABILITIES

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The present study was aimed to evaluate the therapeutic effects of ferulic acid (FA) and protocatechuic acid (PCA) against alone and in combination with streptozotocin (STZ) induced diabetic nephropathy (DN) in rats. Male Wistar rats were divided into 5 different groups with 6 rats in each group. The protocol was approved by the IAEC of the institute. The groups were assigned as control, diabetic nephropathy (DN), DN + FA (100 mg/kg, p.o.), DN + PCA (50 mg/kg, p.o.), and DN + FA + PCA. After induction of DN (4 weeks) the treatment was continued for a further 4 weeks, so the total study duration was 8 weeks. DN was assessed by evaluating various biochemical parameters (BGL, serum creatinine, albumin, urea, uric acid, and micro-albumin) as well as kidney oxidative stress markers (SOD, CAT, GSH, and MDA). The treatment with antioxidants significantly restores the elevated levels of biochemical parameters whereas significant alteration of markers of oxidative stress was observed. Collectively, FA and PCA attenuated diabetes-induced nephropathy in rats through their antioxidant potential. In conclusion, combined FA and PCA treatment shows an antioxidant effect in diabetes by significantly decreasing oxidative stress and improving renal function in diabetic rats.

enzyme than other peripheral tissues. Phloroglucinol can be utilised as a test substance because it has been discovered to reduce reactive oxygen species in the brain. Furthermore, due to ethical considerations and the high cost of experimenting, insilico techniques have grown in their ability to develop treatments for certain disorders. In this study a total of five proteins have been identified based on previous studies as potential targets: β- amyloid (2MXU), Amyloid Precursor Proteins (5TPT), Tau (2MZ7), Parkin (5C9V) and α - synuclein (7STX). The compound structure was extracted online from Protein Data Bank and Insilico docking methods were applied to obtain docking scores with the ligand Phloroglucinol. In this study it was found that Phloroglucinol possess good binding ability with the given targets and could be used in for treatment of neurodegenerative disease with further pre-clinical and clinical trials.

D-144

TRANSDERMAL PATCHES FOR THE TREATMENT OF ANGINA PECTORIS: AN EFFECTIVE DRUG DELIVERY SYSTEM.

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Transdermal drug delivery has evolved throughout time, with the event of passive and active technologies that have resulted in increased Distribution, accuracy in drug dose, and higher fulfilment of the necessities of the individual. The seek for a lot of powerful prescribed drugs That can be delivered to the skin through applicable transdermic technologies can still be attention within the development of medicine for Transdermal patches and alternative kinds of delivery. Topical and transdermic distribution has been around for a short time, however this review can specialize in Transdermal patches and the way they've evolved. The articles are searched on completely different search engines like Scopus information, Science direct, PubMed, Google scholar, and philosopher science victimization multiple keywords. Associate degree adhesive skin patch is applied to the skin and contains drugs That is absorbed into the blood through the skin. It aids within the recovery of associate degree afflicted a part of the body. In comparison to oral, topical, i.v., And I.m. administration systems, transdermic drug delivery permits a controlled unleash of the medication into patients, usually by either a porous Membrane or by body heat melting tiny layers of medication embedded within the adhesive. The basic disadvantage of transdermic delivery Methods is that the skin may be a extremely economical barrier, therefore, solely little molecules will enter the skin and be administered during this manner.

D-145

AN AYURVEDIC FORMULATION OF PSORALEA CORYLIFOLIA LINN (BAKUCHI TAILA) OF DIFFERENT DOSAGE FORMS FOR ITS ANTI-MICROBIAL POTENTIAL

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Psoriasis is a dermatological disorder consists of abnormal multiplied skin cells than normal one. It causes the thickness of skin is increased and forms a red patches and white scales in the lesion. The disease causing several adverse problems in patient's i.e., adverse physical and mental conditions that are same to malignancies, heart disorder, diabetes mellitus, and depression. Psoriasis is an immune-mediated inflammatory disease characterized by excessive growth and abnormal differentiation of keratinocytes. Psoralea corylifolia Linn. commonly known as "Bakuchi" used in Indian traditional medicine. Ayurveda for the treatment of leucoderma, scabies, leprosy, psoriasis, dermatitis etc. Bakuchi taila is one of the Ayurvedic formulation which is used externally in skin disease. Hence, an attempt has been made to convert Bakuchi taila into its different dosage forms and to evaluate anti-microbial activity against gram positive and gram-negative bacilli. Bakuchi taila, Bakuchi gel, Bakuchi siktha taila and Bakuchi ointment possess significant anti-microbial activity against Bacillus subtilis, Staphylococcus aureus, Escherichia coli and Klebsiella pneumonia. These results confirmed that potential of Bakuchi seeds (Psoralea corylifolia Linn.) in the development of Ayurvedic topical skin formulations.

D-146

ROLE OF CUCURBITACINS FOR THE TREATMENT OF CANCER

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Tetracyclic triterpenoids that are substantially oxidized are known as Cucurbitacins. They are extensively dispersed across the plant world and serve as heterologous chemical pheromones that shield plants from external biological threats. There are several types of Cucurbitacins were isolated from medicinal plants and partially synthesized Cucurbitacins are also available. Cucurbitacins are plays an important role in the treatment of cancer by anti-proliferation, cell cycle arrest, and apoptosis induction. One of the main causes of death is cancer. Chemotherapy is frequently used to treat cancer after surgery or when it is in its early stages. Chemotherapy majorly associates with side effects and negative consequences. Additionally, the majority of chemotherapeutic medicines on the market lack tumor cell selectivity. Cucurbitacins' capacity to alter mitochondrial transmembrane potential, transcriptional activity through multiple factors or genes, and their ability to activate or inhibit pro- or anti-apoptotic proteins are the most important mechanisms underlying their ability to cause apoptosis.

D-147

IN-VIVO ANTI-RHEUMATIC ACTIVITY OF CAULERPA SERTULARIOIDES (GREEN ALGAE) CHLOROFORM EXTRACT BY USING TYPE-II COLLAGEN INDUCED ARTHRITIS MODEL

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To investigate the anti-arthritis effects of chloroform extract of Caulerpa Sertularioides (green algae) in type-II collagen induced arthritis (CIA) induced model in Swiss albino rats. Rat oedema was produced by sub-plantar injection of 0.1 ml of CIA with complete Freund's adjuvant (CFA). Chloroform extract of Caulerpa sertularioides (CECS) was administered orally for 28 days in various concentration 100 mg/kg, 200 mg/kg and 400 mg/kg. Arthritic assessment was carried out based on parameters including body weight, ankle joint measurement and arthritic Score. At the end of study period, animals were sacrificed and various haematological, biochemical and oxidative stress parameters were evaluated. Administration of CSCE significantly attenuated the behavioural, biochemical, haematological induced by the CIA in dose dependent manner. Our research brings us to the conclusion that plant's chloroform extract has a significant anti-arthritic, anti-inflammatory, and immune regulating effect. The strength of the anti-oxidant action was greatly regulated.

D-148

EVALUATING ANTI-OXIDANT, ANTI-DIABETIC CAPABILITIES OF MORUS ALBA EXTRACTS TO TARGET DIABETIC CARDIOMYOPATHY BASED ON INFLAMMATORY MECHANISTIC EVENTS.

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Patients with diabetes mellitus often get diabetic cardiomyopathy (DCM) as a consequence. The pathophysiology of DCM involves several molecules and signaling pathways including p38 mitogen-activated protein kinase (p38 MAPK), c-Jun N-terminal kinase and extracellular-regulated protein kinases (ERK). In this study, Morus Alba, was extracted using three solvents such as methanol, ethyl acetate, and chloroform, and evaluated for potential anti-oxidant (DPPH assay, Superoxide anion radical scavenging capacity) and diabetic properties (α -glucosidase inhibitory assay). Methanolic leaf extract showed the DPPH free radical scavenging and Superoxide anion radical scavenging capacity activities IC50 of 255.7138 ± 7.38 and 237.92 ± 7.38 μg/mL, respectively. Similarly, it also exhibited potential alpha-glucosidase inhibitory activity among other extracts with an IC50 of 9.58 μg/mL. Based on the results, the methanolic leaf extract of Morus alba was selected for GC-MS/MS analysis in order to derive the molecular composition. GC-MS/MS analysis revealed the presence of Chlorogenic acid, Caffeic acid, Quercetin, kaempferol, Rutin, Cyanidin-3-glucoside, and 1-Deoxynojirimycin as major components. Results demonstrated that methanolic fraction of the crude Morus alba extract showed superior SOD and alpha-glucosidase activities with an IC50 of 191.29 ± 14.22, and 171.75 ± 11.06, respectively. The two fractions were studied for their anti-inflammatory mechanism with p38 MAPK inhibition. Results ,Peak 2 displayed superior protein denaturation with IC50 of 36.1 μg/ml and MAP kinase inhibition with an IC50 of 56.87 μg/Ml, and reduced DCM via lower imbalance and p38-mediated inflammation.

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have significant effect during animal studies for neuropharmacological disorders.

D-155

GILBERT'S SYNDROME IN A YOUNG INDIAN

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Case Study Background: Gilbert's Syndrome is a benign, familial, characterized by recurrent severe symptomatic condition. It was diagnosed by unconjugated hyperbilirubinemia due to haemolysis reported in inherited autosomal dominant disordered patient. It is a result of mutation in bilirubin uridine diphosphate glucuronyltransferase gene(UGT1A1).
Case Presentation: A 21 year old male having cleft lip and cleft palate, presented with recurrent episodes of jaundice, blood vomitings, haematuria, blood infection, testical pain, cold, dry cough. In addition to this BP, diabetes, nutritional defeciences over 10 years. All laboratory parameters were normal except for unconjugated hyperbilirubinemia. After careful examination, diagnosis of Gilbert's Syndrome was made.Conclusion : As this case study is fulfilling the criteria of Gilbert's Syndrome, prescribed plan of care is followed in order to reduce the clinical complications and risk factors of hyperbilirubinemia. Regular monitoring of glucose, BP and body functions. Management by counselling to avoid stressful conditions and prolonged fasting.

D-156

INTERACTIVE STUDY OF WITHANIA SOMNIFERA ROOTS EXTRACT WITH ORAL HYPOGLYCEMIC AGENTS IN DIABETES INDUCED NEUROPATHY

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Diabetic neuropathy, is a secondary complication associated with diabetes mellitus. The aim was to evaluate the antidiabetic and antinociceptive activity of Withania somnifera root extract (WSRE) in combination with low dose of oral hypoglycemic agents in diabetic neuropathic pain models. Male Sprague Dawley rats were divided into eight groups with 6 animals in each group. Type 2 diabetes was induced by high fat diet / low dose STZ model. Blood glucose level estimation was done once in 15 days. Single and multiple dose studies of WSRE with and without standard oral hypoglycemic agents (OHA) were performed for a period of ten weeks. Eddy's hot plate and formalin test are the diabetic neuropathic pain models. Antioxidant status in the sciatic nerve was performed. Sciatic nerve and pancreas histopathological studies are also carried out. Diabetic rats treated with WSRE alone and its combination with low dose of standard OHAs produced the significant decrease in blood glucose level. Imbalance in the antioxidant level was rectified after the treatment. WSRE alone and its combination with low dose OHAs increased the pain threshold levels in diabetic neuropathic rats. Histopathological studies proved no damage in the sciatic nerve among the treated groups. Combined treatment of WSRE with standard OHAs in diabetic neuropathy increased the threshold towards glucose and neuropathic pain.

D-157

INSITE SICKLE CELL ANEMIA.

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Sickle cell anemia, an inherited group of disorders, red blood cells convert into a sickle shape. The cells die early, leaving a shortage of healthy red blood cells and can block blood flow causing pain. There are about 100,000 people with sickle cell anemia in the United States. Worldwide there are about 300,000 babies birth with sickle cell disease every year. Signs and symptoms include Swelling of hands and feet, Frequent infections, Delayed growth or puberty, Vision problems, Episodes of pain. Sickle cell anemia is caused by a change in the gene that tells the body to make the iron-rich compound in red blood cells called hemoglobin. Hemoglobin enables red blood cells to carry oxygen from the lungs throughout the body. The hemoglobin associated with sickle cell anemia causes red blood cells to become rigid, sticky and misshapen. Sickle cell anemia can lead to complications including Stroke, Pulmonary hypertension, Organ damage, Blindness Deep vein thrombosis, Pregnancy complications. A blood test can check for the form of hemoglobin that underlies sickle cell anemia. Treatment include medications and blood transfusions. For some children and teenagers, a stem cell transplant might cure the disease. Medication include Hydroxyurea (Droxia, Hydrea, Siklos) L-glutamine oral powder (Endari) Crizanlizumab (Adakveo). To avoid complications of sickle cell anemia Take folic acid supplements daily and choose a healthy diet Drink plenty of water Avoid temperature extremes Exercise regularly Don't smoke.

D-158

A REVIEW OF CAMPHOR POISONING CAUSED BY VICKS VAPORUB IN NEONATES

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Camphor is a pleasant-smelling compound of terpene group. It is highly volatile and toxic in nature. Camphor is one of the commonest ingredients present in topical ointments like Vicks VapoRub and Tiger balm which is most widely used in India. These are available in over the counter used to get temporary relief from minor aches, common cold, cough and congestion. We report a case of a 22-day-old neonate who experienced abnormal eye and limb movements after applying VapoRub to treat a mild cough. The baby was alive but had no movement or response to pain. After a brief history collection from the parents, they concluded that it is camphor poisoning. The Food and Drug Administration (FDA) approved concentration of camphor in these products is 0.1% to 11% VapoRub has a 4.7% of camphor. But in the case of neonates, they have a higher body surface area to weight ratio, thinner stratum corneum and increased skin perfusion can cause increased transdermal absorption of drugs which reaches into systemic circulation rapidly. It can lead to toxicity when it is used for a longer period. Vicks VapoRub is widely effective, but there are certain precautions one needs to take care before using it. The label of Vicks VapoRub, clearly states that it is not meant for children under 2 years of age. Due to a lack of awareness among parents and other users applying VapoRub to babies can cause seizure, hepatic and renal damage. In some cases, it can also lead to death.

D-159

EVALUATION OF THE HYPOGLYCEMIC EFFECT OF VITEXIN FORMULATION INFLUENCES THE LIVER CIRCADIAN CLOCK REGULATION

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Circadian Clock is associated with endogenous biological activity system that synchronizes physiology, mental and behaviour to day and night cycles which denotes the Active and Rest phases. They have the effects on sleep, hormones, appetite, and alternative body functions. Abnormal or deregulating rhythms are also involved in avoirdupois, diabetes, depression, emotional disturbance, sleep disorders etc. In different zeitgebar times (ZT) corresponding genes regulate metabolic functions like nutrient uptake, processing, and detoxification for align organ perform to cycle with nutrient provide and demand. Genetic or environmental disruption of the ZT clock causes metabolic diseases. The aim of the research is to prove the evaluation of the effect of Vitexin formulation influences the Liver Circadian Clock System. The already established impact of Vitexin on streptozotocin induced diabetic rats was shown important effect in reducing glucose level. The lead molecule was preparatory designated as Vitexin Microspheres were prepared for the evaluation purpose which were given as the treatment in isolated hepatic cells of Wister rats. The isolated hepatic cells in control condition the cell viability was confirmed. By haemolysis profiling the comparison between Vitexin Standard and Vitexin Microsphere, formulation was shown better result. The formulation of antidiabetic compound, can control the Liver Circadian Rhythms in diabetic patients and also for further studies.

D-160

ANTI-OBESITY ACTIVITY OF AQUEOUS EXTRACT OF CYPERUS ROTUNDUS LINN. COMBINATION OF CAFETERIA DIET AND STREPTOZOTOCIN INDUCED OBESITY IN WISTAR RATS

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Diabetes and obesity are two of the most prevalent health issues affecting millions of individuals. An Indian medicinal plant known as Cyperus rotundus Linn. has been shown to have numerous health advantages. Therefore, the aqueous extract's anti-obesity effect is also investigated in the current study. Except for the animals in the control groups, all of the experimental animals were made obese. Experimental rats were made obese by feeding them food similar to the standard cafeteria diet. Additionally, co-morbid conditions including diabetes were produced by STZ. The following study parameters were used: body weight, locomotor activity, rectal temperature, glucose tolerance test, and several biochemical

D-358

PRELIMINARY IN VITRO ANTI-PSORIATIC ACTIVITY OF PPARγ AGONIST

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Psoriasis is an inflammatory condition that causes redness, scaling and painful lesions on skin. The aetiology of psoriasis is poorly understood but it mainly occurs due to over activation of immune cells. The systemic and topical medicines used in this disease mainly relieve the patient of symptoms and there is no permanent cure to this disease. Treg cells, specifically expressing the PPAR γ genes are involved in the suppressive control of the over expression of immune response and inflammation at any site. PPAR stimulation by any the PPAR γ agonist increases the Treg cell number and thus improve inflammatory condition. The main objective of this study is to evaluate the anti-psoriatic activity of the PPAR γ agonist. That was done by performing various in vitro assays like heat induced protein denaturation assays and hRBC membrane stabilisation assays. From the heat protein denaturation assays performed, it can be concluded that PPAR γ agonist has significantly more potent anti-inflammatory effect than the standard drug used. Furthermore the compound's effect on hRBC membrane was observed as hRBC membrane is analogous to cell membrane. That study proved that PPAR γ agonist has protective activity on cell. So, it can be said that PPAR γ agonist has anti-psoriatic activity, though further investigation needed to be carried out in animal model.

D-359

EFFICACY OF QUERCETIN ALONE AND ITS COMBINATION WITH DOCETAXEL ON PROGRESSION OF GASTRIC CANCER INDUCED BY N-METHYL-N-NITROSOUREA AND SATURATED SODIUM CHLORIDE IN RAT MODEL

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We reported here the efficacy of quercetin alone and its combination with docetaxel on progression of gastric cancer induced by N-Methyl-N-Nitrosourea (MNU) and Saturated NaCl in rat model. Six weeks old male wistar rats were used for the study and were randomly divided into 6 groups. Control fed with citrate buffer and 2nd group with 25mg/kg quercetin administered PO, daily from 6th week onwards up to 20th week. All other groups (3rd 4th, 5th and 6th group) are treated with 100mg/kg MNU on 0 and 14th day by intragastric intubation and first three days of every week treated with s-NaCl, for four weeks. 4th group treated with docetaxel, 10mg/kg/week (from 6th week up to 20th week), 5th group treated with docetaxel + quercetin and 6th group fed with only quercetin. The experiment was terminated and rats were sacrificed at the end of 20th week. At sacrifice, the mean tumor weights showed significant difference in all of the treated groups compared to the negative control ($p \leq 0.001$). The mean tumor weight showed significant difference between the group 5 in which quercetin combined with the docetaxel group compared to docetxel alone or quercetin alone ($p = 0.038$). Quercetin alone has shown efficacy and in combination with docetaxel showed synergistic effect in suppressing the tumor growth. It has also suppressed the hepatotoxicity induced by docetaxel. The results of the present study showed enhancement of docetaxel efficacy by quercetin in gastric cancer progression suggests the design of clinical trials for this regimen.

D-360

SMART NANODELIVERY SYSTEM FOR TREATMENT OF PATHOLOGICAL HYPOXIA

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Hypoxia is a physiological condition in which the tissues of the body are deprived of adequate amount of oxygen due to restricted blood supply or insufficient level of oxygen in the blood. Oxygen nanobubbles-ONBs are recently engineered nanomaterials which help elevating levels of oxygen in cells forming tumor and are thereby used in numerous treatments for cancer such chemotherapy , Photodynamic therapy, radio therapy etc. These treatments show best therapeutic effect when administered with ONBs in hypoxic patients. O2 carrying nanoparticles containing Hb: The antioxidative enzymes such as SOD, CAT, and GSH have a protective effect on Hb molecules. They prevent it from cell destruction during the circulation of blood in tumor tissues. The enzyme CAT catalyses H2O2 present in the TME to form oxygen and water. Hence providing relief to a hypoxic tumor. Some of the inorganic metal catalysts follow the same route eg: carbon oxide and manganese dioxide. O2 yielding nanoparticles: These NPs work on the principle of decomposition. i.e on reaching the TME H2O2 undergoes decomposition ultimately yielding oxygen. This method is also helpful as it prevents any possible intoxication caused due to oxygen. Nanoparticles regulating gene expression (HIF-1): HIF 1 significantly help the tumor cells adapt to confined oxygen supply thereby funding oxygen levels. Eg: GdW10 Nanosphere. The above mentioned Nanoengineered materials have been proven to be fundamentally useful in dissolving aggressive tumors caused by hypoxia. The developing era of nanoscience has significantly brought grace and delicacy to vulnerable diseases like cancer.

D-361

ADVERSE REACTION IN BLOOD TRANSFUSION: INTERVENTION OF CLINICAL PHARMACIST IN MONITORING ATR

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In the current study, the adverse transfusion reactions (ATRs) reported from both in-patients and out-patients of various departments were assessed and studied. This was a Prospective observational study conducted in tertiary care teaching hospital located in Elayampalayam for a period of 6 months. The adverse transfusion reactions were assessed for their causality using Imputability levels. A total of 14 ATRs were reported during the study period, out of which 8 ATRs were found in males (57.10%) and 6 in females (42.80%). According to age group, 4 ATRs were reported in 51-60 years (28.57%) followed by 3 ATRs each from 71-80 years (21.42%) and 81-90 years (21.42%). Fever (13.6%) was the most common reaction that was seen in almost 6 transfusions. The majority of ATRs were reported from the General medicine department (42.85%) with the blood group O + ve (64.28%). The patients who were transfused with packed cells showed most of the reactions (92.85%). According to the imputability levels, most of the reactions were evaluated as definite (56.25%), 4 ATRs seems probable (25%), 2 ATRs were possible (12.50%) and 1 ATR was doubtful (6.50%). This study suggests that there is a need for reporting the ATR from all the departments of the hospital. Like spontaneous ADR reporting system, ATR reporting system should also be considered equally important. Moreover, the patients should be counseled regarding the possible transfusion reactions and their role in effective reporting of the reactions. Since transfusion reactions are likely to happen even after several precautions, it is imperative to strengthen further the hemovigilance system for better outcome.

D-362

IRRATIONAL USE OF ANTIBIOTICS

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Antibiotics are considered as lifesaving drug but it's irrational use has became the major cause of resistance of many antibiotics from early childhood. It is seen that in most of the cases they have been prescribed though they are not really needed. The aim of our study is to minimize the use of antibiotics and use them is the condition they are really needed. The overuse and misuse of antibiotics is the major cause of increased resistance of bacteria to multiple antibiotics. This can be prevented by prohibiting the use of antibiotics cases like cough, runny nose, sore throat etc. And replacing them with other medications. Measures like completing the course prescribed by doctor, not stopping the use of antibiotics when symptoms are not seen can be taken to minimize the resistance. the Indian Council of Medical Research has issued guidelines against the use of antibiotics for condition like low grade fever and viral bronchitis while advising doctors to follow a timeline while prescribing it. A clinical diagnostic most often helps to predict causative pathogen fitting into a clinical syndrome which would tailor the correct Antibiotics. Antibiotics are the most important weapons of modern medicine but they are losing their therapeutic capacity due to the misuse. Many bacteria have become resistant to multiple antibiotics. The only way to reduce the increasing rate of antibiotic resistance is through proper use and reducing its misuse. There should be proper training program for doctors and parents regarding antibiotic resistance and it's severity.

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RH haemolytic disease of newborn . These treatment do not completely promise to the various negative effect of HDNB. The complication in new born due to HDNB severely high level of bilirubin with accompanying Jaundice, Anemia and Liver ment. There are numerous new technology which are into early stage of research and can be implemented to prevent the disease into maximum level in India. To avoid ication anti Rh D therapies are indicated. Phototherapy, exchange top up transfusion ous immunoglobulin (IVIG). These are some prenatal injection therapies. This review various future possible prenatal treatments that can be developed in pharma field to the chances of EBF. These includes (a) Insensitivity of placental cell receptor for IgG, (b) ew of mammary cells for antigen D in mother after first pregnancy, (c) The antigen D is during 7th week of trimester , so we can prevent the formation of antigen D so that born Rh-ve. The EBF is highly preventable when it is diagnosed at its early stages.

D-408

LUATION OF CARDIOPROTECTIVE EFFECT OF METHANOLIC EXTRACT OF SSIA TORA AND ITS ACTIVE CONSTITUENT EMODIN ON 5-FLUOROURACIL INDUCED CARDIOTOXICITY IN RATS.

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d Objectives: To investigate the cardioprotective effect of methanolic extract of C. tora odin against 5-FU induced cardiotoxicity in rats. Materials and Methods: Male Sprague- rats were divided into six groups. Emodin treatment group received (low dose g/day) & (high dose 20 mg/kg/day, i.p) for 14 days. Methanolic extract of C. tora ent group received (100mg/kg/day& 200mg/kg/day, orally) for 14 days. Cardiotoxicity in s induced by 5-FU administration (20 mg/kg/day, i.p.) at 24hr interval on 10th to 14th sults & Discussion: 5FU administration showed changes in ECG pattern, ST-segment sion. Increased serum levels of LDH, SGOT, SGPT, CK-MB, Cholesterol, TG & decreased dant defense system in heart, altered lipid profile in serum &heart (MDA &NO levels), se in relative heart to body weight &GSH, SOD levels. High dose Emodin group showed ant ($P < 0.01$) decrease in ALT, AST, Cholesterol, CK-MB, LDH, MDA, NO & increase in < 0.001), GSH ($P < 0.01$) levels. Low dose Emodin group showed significant ($P < 0.05$) se in ALT, AST & CK-MB ($P < 0.001$) and increase in GSH ($P < 0.01$), SOD ($P < 0.05$) Methanolic extract of C. tora (100mg/kg) group showed significant ($P < 0.05$) decrease , MDA, CK-MB ($P < 0.001$) & significant ($P < 0.05$) increase in SOD levels. 0mg/kg) methanolic extract showed significant ($P < 0.01$) decrease in AST, CK-MB, erol, TG, MDA ($P < 0.05$), LDH ($P < 0.05$) and increase in SOD, GSH ($P < 0.01$) levels. sion: The methanolic extract of C.tora & Emodin has significant effect on the protection eart against 5-FU induced cardiotoxicity.

D-409

BRIEF OVERVIEW ON HERBAL MEDICINE USED IN THE TREATMENT OF DEEP VEIN THROMBOSIS

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sin thrombosis (DVT) occurs when a blood clot forms in one or more deep veins usually it in the legs. When DVT breaks off and travels through the bloodstream to the lungs it pulmonary embolism. DVT and pulmonary embolism are together known as venous oembolism (VTE) which affects 1 per 1,000 people and contributes 60,000 to 100,000 Symptoms for DVT depends upon the location of thrombus if it occurs in the heart then ervable symptoms are chest pain, sweating, shortness of breath and pain in left arm. e to a vein from surgery or inflammation or due to infection can cause DVT. Overweight sity, atherosclerosis, atrial fibrillation, venous stasis, vascular injury and agulability favors thrombus formation and acts as risk factors for DVT. Blood clots can o the blood vessels in the limbs, lungs, brain, heart and kidney failure or pregnancy problems and operates as the complications for DVT. DVT can be diagnosed by aphy, MRI scan and angiography. To prevent DVT regular exercise is essential. agulation therapy is essential for the treatment of DVT. Warfarin is the vitamin-k ost used as thinner. In some selected cases direct oral anticoagulants (DOACs) are rmeric, ginger, garlic, vitamin E acts as herbal blood thinner can be used to reduce the ms for DVT.

D-410

BRIEF OVERVIEW ON TYPHOID FEVER

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Typhoid is cause by Salmonella typhi bacteria. Typhoid fever is rare in developed countries. It is a serious health threat in the developing world, especially for children. n each year almost 27 million or more person infected by the bacterial aspecialy children. It was found in India,Asia,South America. Fever (104f,40c) Headache, Weakness, Sweating, Diarrheoa, stomach pain are the symptoms of typhoid without treatment it becomes life threating disease. It shows lie motionless and exhaust with your half eyes closed,causes the most people in developed countries pick up thyphoid bacteria while they retraveling once they have been infected.They can spread it to others through the fecal oral route. It can pass through the infected person by the fever or urine infection. If the person cannot maintain the hygiene.In most people infection due to drinking of contamination water. Prevention of typhoid is wash hands, avoid drinking untreated water, avoid raw fruits and vegetables choose hot food. Commonly prescribed antibodies Ciprofloxacin, Azithromycin, cetriaxone etc. Drinking fluids help to prevent the dehydration result from prolonged fever and diarrhea.

D-411

PHARMACOVIGILANCE OF HERBAL DRUGS IN INDIA

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Formulations of herbal origin being broadly accepted therapeutic agents as antidiabetics, cough remedies etc. The recurrent myths regarding herbal medicines are that these medicines are completely safe, and can therefore be safely consumed by the patient on his/her own, without a physician's prescription. This result in extensive self-medication by people all over the world, often leading to disappointing end-results or side-effects. In India, a proper adverse drug reaction monitoring system was started in 1986 with 12 regional centers. In 1997, India became the member of WHO for International Drug watching, managed by the Uppsala Monitoring Centre, Sweden. Promoting safe use of drugs may be a priority of IPC that functions as the NCC for PVPI. The present study examines development, perspective, opportunities or interventions particularly or avertible adverse events which are able to facilitate in promoting safer use of herbal medications and improve the standard of patient care and educate to extend awareness. The "safe if natural" perception of herbal products may have several undesirable side effects. There is foremost need to raise awareness in public order to change this perceptivity and ensure safer use of herbal products. Therefore, currently this point has return to aware the general public too for the reporting the adverse drug reaction to nearest hospital or AMCs or to the health care professionals.

D-412

CONTRIBUTION OF YOGA IN PREVENTION OF RHEUMATOID ARTHRITIS

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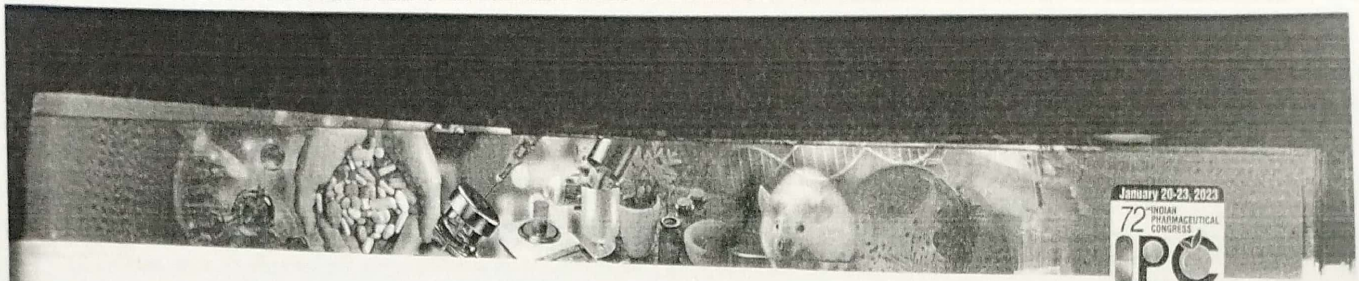
Rheumatoid Arthritis [RA] is T-Cell Mediated Chronic Inflammatory Autoimmune Disorder occurs when our immune system attacks its own body tissue in joints. Rheumatoid Arthritis affects 0.24 to 1% of population & most commonly seen in women. Joint pain, swelling, stiffness & tenderness, fatigue, fever are the symptoms of RA. Person with RA shows the presence of Anti-citrullinated protein antibodies [ACPA]& Rheumatoid Factor [RF]. What triggers RA is unknown, but it is believed to be caused by the combination of genetic & environmental factors & hormones. Risk factors of RA are family history, smoking & obesity. Cartilage protects joints & bones with the help of Synovial fluid. In RA this Synovial fluid gets affected which leads to destruction of bones &joints. Complications includes Osteoporosis, Lymphoma, Abnormal body Composition. ESR, CPR test, X-ray, MRI helps in diagnosing RA. Prevention includes avoidance of food which promotes Cytokines production, regular exercise & certain yoga asanas help in lowering joint swelling, tenderness (as per research conducted by Arthritis Foundation) and provides balance & flexibility to our body. Meditations & Relaxation also help to cope up with stress which may be trigger for disease flare up (based on one study in PLOS) Treatment for RA involves the use of NSAID's, DMARD's, TNF-inhibitor, & Surgery most commonly including- joint replacement, arthrodesis & Synovectomy remains as last options when drugs fail to relief the pain. Janus Kinase [JAK] inhibitors are the new drug treatment for the Rheumatoid Arthritis approved by FDA.



(RP-HPLC) was developed and validated for the determination of Vandetanib, also its major degradants were identified and characterized by Liquid Chromatography- Tandem Mass spectrophotometric method (LC-ESI-MS). Methods and Materials: This method was developed on Nucleosil 100-5, C18 (250 × 4.6 mm, 5μm) column by using Methanol: Ammonium acetate buffer as Mobile phase in the ratio, 90:10 v/v, having flow rate of 1 ml/min. The estimation was carried out at 249 nm. Further Vandetanib was subjected to various stress condition like acidic, alkali, oxidative, thermal and photolytic degradation. The degradation pathways for major degradants were identified. Results: The method was developed and validated for linearity, robustness, accuracy; precision, linear regression analysis data which indicates the good linear relationship, correlation coefficient was found 0.992 in the concentration range of 1-10 g/ml. In the stress results, the degradation of drug in alkaline, as well as acidic medium showed significantly. The product degradation was characterized by the LC-MS technique. Conclusion: The developed method was found to be rapid, sensitive, accurate, precise, and robust for the analysis of Vandetanib by which routine analysis of drugs can be done.

F-61

DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF SERRATIOPEPTIDASE AND ACECLOFENAC IN PHARMACEUTICAL DOSAGE FORM

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Reverse phase high performance liquid chromatography method has been developed and validated for simultaneous estimation of Aceclofenac and Serratiopeptidase in pharmaceutical dosage form. This method uses C18 Agilent column with 4.6 x 250 mm length and 5 m particle size of packing material. Mobile phase is methanol: 0.05% OPA (85:15 v/v) with 1 ml/min flow rate and 20 l volume injected. UV detection was carried out at 271 nm and the column temperature is 250C. The retention time of Serratiopeptidase was 2.820 min. and 6.682 min of Aceclofenac. The method is validated and calibration curve observed was linear in the concentration range of 3-15 g/ml for Serratiopeptidase and 20-100 g/ml for Aceclofenac. The method is validated for linearity, accuracy, precision, limit of detection and quantification, ruggedness and robustness.

F-62

COMPARATIVE STUDY OF CHEMOMETRIC ASSISTED UV AND RP-HPLC METHODS FOR QUANTIFICATION OF LORATADINE, PHENYLEPHRINE HYDROCHLORIDE AND PARACETAMOL IN THEIR COMBINED DOSAGE FORM

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In this work, chemometric assisted UV-Spectrophotometry and RP-HPLC methods were applied for the quantification of Loratadine, Paracetamol and Phenylephrine hydrochloride in their combined dosage form. UV-Spectrophotometric analysis was carried out by applying two chemometric models namely, Principal Component Regression and Partial Least Squares Regression. These two models were successfully validated and applied for resolving the complex UV-spectra in the wavelength range of 225-300 nm with a data interval of 5 nm. Chromatographic analysis was developed and optimized by using Central Composite Design (CCD), a type of response surface methodology. The CCD was applied to study the critical factors and their interactions with the responses. The identified critical factors were mobile phase pH in the range of 2.8-3.2, acetonitrile content in the range of 60-70%v/v and flow rate in the range of 0.6-0.8 mL/min and the responses affected by these factors were retention time of the 1st eluted drug (Rt1), retention time of the 3rd eluted drug (Rt3) and resolution between 1st and second eluted drugs (RS1,2). Derringer's desirability function was used for the optimization of the chromatographic method and the optimization was carried out using a mobile phase of phosphate buffer (pH 3.2) and acetonitrile in the ratio of 64 :36 using 0.7 ml/min flow rate at a detection wavelength of 275 nm. The developed methods showed good accuracy and precision for the quantification of drugs in their combined dosage form.

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PROCESS VALIDATION OF ORAL SOLID DOSAGE FORM: TABLET – AN OVERVIEW

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Establishing documented evidence which provides a high degree of assurance that a specific process for manufacturing of tablets will consistently produce a product meeting its pre-determined specifications and quality attributes. It mainly involves the steps to be followed to evaluate and qualify the acceptability of the manufacturing process of Tablets. The process is limited to the three batches manufactured of specific batch size with specified equipments and control parameters for Tablets. The results suggest providing documentary evidence that all the manufactured Tablets were evaluated as per specifications. The steps involved such as Blend uniformity results between 90% - 110%, compression assay results between 95%-105% were found within acceptable limits. Other tests related to compression such as hardness, thickness, disintegration, dissolution and for coatings such as weight gain, dissolution were found within acceptable limit. The process validation was carried out for the three batches. Which include the validation of critical steps of manufacturing. Such as dry mixing, blending, compression, coating and packing.

F-64

MULTIVARIATE UV-SPECTROPHOTOMETRIC METHODS FOR THE SIMULTANEOUS DETERMINATION OF SIMVASTATIN, RAMIPRIL, ATENOLOL, HYDROCHLOROTHIAZIDE AND ASPIRIN IN CAPSULE DOSAGE FORM

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The UV spectra of Simvastatin (SM), Ramipril (RM), Atenolol (AL), Hydrochlorothiazide (HT) and Aspirin (AS) showed severe overlapping in their UV range, which caused difficulty to analyze by conventional UV Spectrophotometric methods. In this aspect, most prominent chemometric models like Principal Component Regression (PCR) & Partial Least Squares Regression (PLS) were developed and applied to determine the drugs in the marketed formulation. The developed chemometric models, PCR and PLS for the simultaneous estimation of SM, RM, AL, HT and AS were optimized in the wavelength range of 220nm -320 nm with 1 nm data interval using 9 standard mixture solutions of drugs in the calibration range of 3-15 μg/mL of SM, 8-16 μg/mL of RM, 30-150 μg/mL of AL, 3-15 μg/mL of HT and 30-150 μg/mL of AS at the chosen optimal number of '7' PCs and '6' LVs. Statistical parameters like Correlation coefficient (R2), Root mean square error of Calibration (RMSEC) and Root mean square error of Prediction (RMSEP) were evaluated and both the developed models were found to be fit for the analysis. The assay results of all the drugs lie in the range of 90-110% w/w which are within the acceptable limits. However, from the overall results obtained, it was noticed that PLS model showed best results for the quantification of drugs in the dosage form than PCR model. Both the developed models can be used in regular analysis of SM, RM, AL, HT and AS in pharmaceutical dosage forms.

F-65

STABILITY INDICATING RP- HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF SALICYLIC ACID AND KETOCONAZOLE IN ANTI DANDRUFF SHAMPOO

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Aim: The main objective of present study is to develop a simple, accurate, precise, sensitive, selective, reproducible and rapid analytical technique for simultaneous estimation of Salicylic Acid and Ketoconazole, in anti- dandruff shampoo. Experimental: The method was developed and validated using Kromosil C-18, (250 x 4.5 mm, 5.) column. Acetonitrile and 0.01N Potassium phosphate buffer (adjusted to pH 5.4) in the ratio of 50: 50 % v/v is used as mobile phase. Detection wavelength was selected at 322 nm. Results: Retention time of Salicylic Acid and Ketoconazole were found to be 2.307 min and 3.342 min. The % assay of Salicylic Acid and Ketoconazole obtained was 99.02 and 99.51 % respectively. The method is linear in the concentration range of 5-30 μg/ml. The mean % Recovery was obtained was 99.09 to 99.46 % for Salicylic Acid and 99.14- 99.46 % for Ketoconazole. Robustness of the method was studied by making deliberate changes in flow rate, mobile phase ratio and column oven temperature, after making each change system suitability parameters were

not much affected. Conclusion: The proposed method for determining ketoconazole and Salicylic acid in shampoo was simple, fast, precise, robust, and accurate. The method was found specific for the drugs without having interference form the degradants. Method developed was simple and economical that can be adopted in regular Quality control laboratories.

F-66

A VALIDATED RP-HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF CLOBETASOL AND NADIFLOXACIN IN SEMI- SOLID DOSAGE FORM.

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Aim: To develop a simple, precise, accurate, robust and cost- effective method for the routine analysis of the Clobetasol and Nadifloxacin in semi solid dosage form using RP- HPLC. Experimental: The estimation was carried out on a Enable C-18 column (5μm, 250mm × 4.6mm i.d). Combination of Acetonitrile and 0.5% Potassium dihydrogen phosphate buffer (adjusted to pH-5 using Orthophosphoric acid) in the ratio of 70: 30 was used as mobile phase. The flow rate is set at 1.0ml/min. Results: Linearity for Clobetasol and Nadifloxacin was in the range of 10-100μg/ml. The mean recoveries obtained for Clobetasol and Nadifloxacin were found to be 99.2 to 100.3 % and 99.7 to 100.3 % respectively. Robustness was studied by making deliberate changes in mobile phase composition, detection wavelength, and flow rate, it was found that the % RSD of both the drugs were within the acceptance limit. Specificity of the method is established by conducting forced degradation studies which shows that the method is specific for the estimation of both the drugs without having any interferences with the retention time of the drugs. Conclusion: The proposed method for determining Clobetasol and Nadifloxacin in creams was simple, fast, precise, robust, and accurate. Sample recoveries from the formulation were in good accord with the label claim, suggesting no excipient interference. Linearity, precision, accuracy, and robustness were validated following ICH criteria.

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DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR SIMULTANEOUS ESTIMATION NEBIVOLOL HCL AND TELMISARTAN IN API AND ITS PHARMACEUTICAL FORMULATION

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Analytical techniques hold the key to the design, development, standardization and quality control of medical products. In the present research work a modest attempt has been made to develop validated analytical methods for the determination of single or combined dosage form. Research had done to developed simple, rapid and sensitive, stable and highly effective RP-HPLC method for determination of Nebivolol HCl and Telmisartan, to validate methods as per ICH Guidelines. The method employs Agilent C18 (250x 4.6nm 3μm particle size) column for the chromatographic separationand methanol and orthophosphoric acid (80:20) pH 7 was used as a mobile phase. separation was completed within 10 min with flow rate of 0.7ml/min and detection was at 286nm. The retention time of NebivololHCl and Telmisartan was found to be 3.00min and 5.46min respectively. The proposed method was found to have the linearity in the concentration range of 10-50μg/ml for both drugs.Linearity regression coefficient was found to be 0.999the value of % RSD are less than 2% indicating accuracy and precision of the method. The method was found to have suitable application in routine laboratory analysis with high degree of accuracy and precision.

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ASSAY METHOD DEVELOPMENT AND VALIDATION OF IAMIVUDINE IN ITS FORMULATION BY HPLC

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The Present Study describe to develop and validate a assay method and Lamivudine in its formulation by using a (HPLC) method . Lamivudine is a nucleoside reverse transcriptase inhibitor that is widely used for the treatment of HIV-1 infection in combination with other antiretrovirals. It is a highly effective agent that can be dosed once or twice daily due to its long intracellular half- life. High performance liquid chromatographic (HPLC) method for the assay of 100- mg Lamivudine tablets. The chromatographic conditions of the method employ a Phenomenex C-08-04 (5um).150x4.60mm column, isocratic elution with (pH 3.0) : ACN: phosphate buffer (65:35 % v/v) as the mobile phase at a flow rate of 1.5 ml/min, a 20 µl injection volume, and Detection Wavelength is 274nm. The active was analyzed at ambient column temperature, using peak area responses.

F-69

EFFECTIVE ESTIMATION OF RILPIVIRINE HCL BY ANALYTICAL METHOD IN SOILD DISPERSION AND ITS IN-VITRO DISSOLUTION ASSESSMENT

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Rilpivirine Hydrochloride (RPV) is a non-nucleoside reverse transcriptase inhibitor (NNRTI). It is indicated for the treatment of HIV-1 infection. The objective of the present investigation is to improve the dissolution rate and solubility of RPV, a poorly water-soluble drug by solid dispersion technique using a water soluble carrier beta-cyclodextrin. The approaches described are Kneading and Microwave Irradiation Methods using beta-cyclodextins as carrier. To evaluate the solubility and invitro drug release of solid dispersions by UV Spectroscopy and HPLC Spectroscopy is the aim for this study. The dispersions were evaluated for various parameters such as solubility study, dissolution study and Fourier transform infrared spectroscopy (FT-IR). Solid Dispersions were prepared with various concentrations of carrier, the prepared solid dispersions were examined for drug release profile. Drug and beta-cyclodextrin showed good result in the ratio 1:3 in Microwave Irradiation Solid Dispersion method.

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DEVELOPMENT AND VALIDATION OF HPTLC METHOD FOR SIMULTANEOUS ESTIMATION OF RUTIN AND QUERCETIN IN HYDROALCOHOLIC EXTRACT OF TRIPHALA CHURNA

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The present research work aims to develop and validate HPTLC method for markers in herbal extract of Triphala Churna. HPTLC procedure was optimized with view to quantify the herbal extract using precoated silica gel 60G- F254 plates. Different mobile phases were tried to develop method and a suitable mobile phase as ethyl acetate, formic acid , acetic acid, water in ratio of (10:1.1:1.1:0.6 v/v) was optimized. Well defined spot were obtained using Linomat 5 applicator on precoated silica gel 60G- F254 plates which were visualized under UV light at 254 nm without derivatization. CTS 4 version software was used for densitometric scanning. The identity of rutin and quercetin were confirmed by comparing chromatogram of standard rutin and quercetin with that of extract and by comparing retention factor of reference with standard. The retention factors of rutin and quercetin were 0.01 and 0.76 respectively. Linearity was obtained in the range of 200-600 ng for quercetin and rutin. Methods were validated according to ICH guidelines and can be adopted for the routine analysis of rutin and quercetin in hydroalcoholic extract of Triphala churna. Satisfactory recoveries of 99.60% and 98.61□100.56 % were obtained for Rutin and Quercetin. The results obtained validation assays indicate the accuracy and reliability of the developed simultaneous HPTLC method for the quantification of both markers. A new simple, precise, rapid and selective HPTLC method has been developed for the simultaneous determination of rutin and quercetin Ayurvedic formulations Triphala churna.

F-71

DEVELOPMENT AND VALIDATION OF STABILITY INDICATING RP-HPLC ASSAY METHOD FOR ESTIMATION OF BROMOCRIPTINE MESYLATE

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The current study deal with the degradation behaviour of Bromocriptine Mesylate and degradation kinetics of a drug in solution state. The study design involves selection of stability indicating RP-HPLC method for estimation of drug then evaluation of degradation kinetics, shelf life determination and validation of proposed method. The Shimadzu- HPLC series was used for stress degradation analysis of Bromocriptine Mesylate in tablet dosage form. The analysis was performed using Agilent ZORBAX SB-C8 (4.6×150×5um) column and Acetonitrile : Methanol in the ratio of 95:5 as mobile phase; wavelength selected for analysis was 300nm with the flow rate of 1mL/min at which drug showed sharp peak. The proposed method was found to be linear over the range 5 to 30 ug/mL. . The results indicate that Bromocriptine Mesylate was most stable in alkaline and at lower temperature conditions. The proposed method was found to be accurate, precise, robust and successfully applied

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ANALYTICAL METHOD FOR CERITINIB ESTIMATION: A REVIEW

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ALK positive (anaplastic lymphoma kinase positive, or ALK+) lung cancers occur in 1 out of 25 non-small-cell lung cancer patient (NSCLC – the most common type of lung cancer). The ALK mutation is a genetic alteration of lung cells' DNA that causes these cells to grow abnormally and ultimately behave as cancer cell. As these cancer cells begin to grow in lung they can potentially spread to other parts of body. Ceritinib is a novel, oral, highly potent, and selective second generation ALK inhibitor with a greater preclinical antitumor potency than crizotinib. It has been approved by the United State Food and Drug Administration (FDA) for the treatment of patients with ALK positive locally advanced or metastatic NSCLC who have progressed on or are intolerant to crizotinib. This article accentuates various analytical methods viz. HPLC, spectro-photometric, and LC-MS for the estimation of ceritinib in pharmaceutical formulations and in biological matrices.

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ENHANCEMENT OF ANTIFUNGAL POTENTIAL & EFFICACY OF DRUG THROUGH LIPOSOMAL DRUG DELIVERY SYSTEM

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Occurrence of skin fungal infections is increasing nowadays, although, a large number of antifungal agents are available for treatment of skin fungal infections but their toxic profile and physicochemical characteristics reduce therapeutic outcome. The conventional topical options suffer from limitations and are compromised with respect to patient compliance, safety, and efficacy of therapy. Hence, liposomal vesicular topical delivery system could be a better alternative for skin fungal infections. Eberconazole nitrate (EBZ) is an imidazole derivative used topically in the treatment of superficial fungal infections against a wide range of pathogens including Candida spp., Malassezia spp., dermatophytes, and gram-positive bacteria. The present investigation aimed at enhancing the antifungal potential of eberconazole through liposomal drug delivery system. Topical formulation of EBZ 1% w/w liposomal gel was thus formulated & studied for various parameters. Liposomes formulated by ethanol injection method were characterized for morphology, Entrapment efficiency, Particle size, TEM, Zeta Potential & in vitro drug release. Liposomal gel was formulated using Carbopol-950. Animal study on albino rats showed significant efficacy of liposomal gel against cutaneous candidiasis in comparison to control group animals. The optimized formulation (F4) showed, particle size (0.468μm), drug entrapment efficiency (90%), percent drug released (68%), zeta potential(-12.4mV) and showed good antifungal activity in albino rats. Thus formulated EBZ 1% w/w liposomal gel can be promising formulation for treating fungal infections.

F-79

DESIGN FORMULATION,OPTIMIZATIONANDEVALUATION OF MUCOADHESIVE MICROSPHERES OF CAPTOPRIL

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Aim & Objectives: to formulate and evaluate mucoadhesive captopril mucoadhesive microspheres to improve absorption, bio availability and to improve patient compliance and to also to enhance gastric retention time.Method: Ionic gelation method was used for the study. Captopril mucoadhesive microspheres formulated with extended retention in the upper gastro intestinal tract to improve absorption. The microspheres were formulated using the ionic gelation method. A study using FTIR demonstrates the compatibility of Captopril with other excipients. A variety of sodium alginate and captopril ratios nine formulations MM1 to MM9 formulated. Investigations were done effect of polymer concentration on the drug release profile was investigated. Response surface methodology was applied to systemically optimize the drug formulation. Polymer concentration and stirring speed were selected as independent variables. Drug entrapment efficiency, Particle size and in vitro drug release were selected as dependent variables. The optimized formulation (MM10) showed drug showed Entrapment efficiency82.17%, Particle size 401.03μm and Cumulative percent drug release 96.13%.Key words: Captopril, mucoadhesive microspheres,ionic gelation method, design expert,response surface methodology.

F-80

CHEMOMETRIC ASSISTED UV SPECTROPHOTOMETRIC METHOD FOR QUANTIFICATION OF EMTRICITABINE AND TENOFOVIR DISOPROXIL FUMARATE

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The objective of this study was to check the capability of UV spectrophotometric method for the simultaneous determination of Emtricitabine and Tenofovir Disoproxil Fumarate in tablet dosage form by Principal Component Regression(PCR) and Partial Least Squares(PLS) multivariate calibration methods. A double beam UV spectrophotometer (Jasco V-730) with 1cm quartz cell with 1nm data interval and scanning speed of 400nm/min was used in the study. The optimized wavelength range selected was 225-275 nm. The data obtained was processed using Unscrambler X (10.5)(64bit) software. The developed models showed good results over the concentration range of 6-36 μg/ml for Tenofovir Disoproxil Fumarate and 4-24 μg/ml for Emtricitabine with co-relation coefficient greater than 0.995 and %RSD less than 2%. The accuracy studies show % recovery within limits. The method was validated as per ICH Q2(R1) guideline.

F-81

DEVELOPMENT OF NEW SPECTROFLUORIMETRIC METHOD FOR THE ESTIMATION OF DOMPERIDONE MALEATE IN TABLET DOSAGE FORM

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Introduction: Domperidone is a peripheral dopamine (D2 and D3) receptor antagonist. It is used as an antiemetic to treat nausea and vomiting. Its maleate salt is used in tablet dosage form. Objective: A new spectrofluorimetric method for domperidone maleate in tablet dosage form has been developed and validated for Linearity, Accuracy, Precision, LOD and LOQ according to ICH guidelines. Methodology: Domperidone maleate standard stock solution was prepared in methanol and further dilutions were done in water. The excitation and emission wavelengths were found to be 282nm and 380nm respectively. Results & discussion: The method was found to be linear over the concentration range of 20ng/ml to 60ng/ml, with a correlation coefficient of 0.993. Intra-assay and intermediate precision were performed and the method was found to be precise with % RSD < 2. The mean recovery obtained was 99 %, which indicates that the method is accurate. The limit of detection (LOD) was found to be 3ng/ml and the limit of quantification (LOQ) was found to be 10ng/ml. Conclusion: The new spectrofluorimetric method was found to be linear, precise, accurate and sensitive. The details pertaining to the work shall be discussed during the presentation.

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METHOD DEVELOPMENT, VALIDATION AND FORCED DEGRADATION STUDY OF PHARMACEUTICAL DOSAGE FORM BY SIMULTANEOUS ESTIMATION OF EMPAGLIFLOZIN & LINAGLIPTIN

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The RP-HPLC method was developed for simultaneous determination of Empagliflozin and Linagliptin in combinations as the pharmaceutical dosage form. Chromatographic separation was achieved on a THERMO® C18 (250mmx4.6mm, 5 μm) column applying an isocratic elution based on potassium dihydrogen phosphate buffer pH (3.4) - methanol (70:30) as mobile phase. Linearity, accuracy, and precision were found to be acceptable over the concentration ranges of 50-150 μg/ml for Empagliflozin and Linagliptin, respectively. All the variables were studied to optimize the chromatographic conditions. The optimized method was validated and proved to be suitable for the quality control of the mentioned drugs in their different pharmaceutical dosage forms, according to ICH guidelines. The developed method was found to be fairly precise, rapid and economical for simultaneous estimation of Empagliflozin and Linagliptin when compared with the reported method.

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propylene glycol (PG), and malonic acid (MA). DRV is a protease inhibitor (PI) designed to treat human immunodeficiency virus (HIV-1) infection, but its therapeutic activity is limited by its low water solubility. The solubility and pH measurement of a total of 20 different NDESs preparations were assessed. The ChCl: PG (1:3) combination had the best solubility of DRV (17.76 ± 0.36 mg/mL) among the many NDESs tested, and a pH was found that was slightly acidic in nature. A crystalline transition in DRV in NDESs was discovered via motic digital microscopy and differential scanning calorimetry. The kind of the molecular interaction revealed by the selected NDESs-DRV preparation was also examined using FT-IR and 1H NMR. According to in vitro dissolving studies, DRV presented in NDESs disintegrated at a rate that was faster (89.58 %) than pure DRV (33.38 %). Overall, the results of our research indicate that NDES are excellent candidates for use as dissolution promoters in the creation of new and more efficient drug delivery systems.

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STABILITY INDICATING RP- HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF TEZACAFTOR AND EVACAFTOR IN TABLET DOSAGE FORM

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Aim: To develop a simple, accurate, precise method was developed for the simultaneous estimation of the Ivacaftor and Tezacaftor in Tablet dosage form. Methodology: Chromatography was run through Zodiacil C18 (150 x 4.6 mm, 3.5m) column. Mobile phase containing 0.01N KH2PO4 and Acetonitrile taken in the ratio 55:45 was pumped through column at a flow rate of 1.0 ml/min. Temperature was maintained at 30°C. Optimized wavelength selected was 292.0 nm. Results: Retention time of Ivacaftor and Tezacaftor were found to be 2.269 min and 3.164 min. %RSD of the Ivacaftor and Tezacaftor were and found to be 0.5 and 1.0 respectively. %Recovery was obtained as 100.14% and 100.07% for Ivacaftor and Tezacaftor respectively. LOD, LOQ values obtained from regression equations of Ivacaftor and Tezacaftor were 0.56, 1.71 μg/ml and 0.07, 0.11 μg/ml respectively. Regression equation of Ivacaftor is y = 14394x + 3350, and y = 6134.x + 432.1. for Tezacaftor. Conclusion: Retention times were decreased and that run time was decreased, so the method developed was simple and economical that can be adopted in regular Quality control test in Industries.

F-180

STABILITY INDICATING RP-HPLC METHOD DEVELOPMENT AND VALIDATION OF FOR ESTIMATION OF BILASTINE AND MONTELUKAST SODIUM IN PHARMACEUTICAL DOSAGE FORMS

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Aim: A simple, rapid, precise and highly selective Spectrophotometric method was developed for simultaneous estimation of Montelukast sodium and Bilastine in tablet dosage form. Experimental: The chromatographic separation was achieved on reverse phase BDS Hypersil C18 column (250 ×4.6 mm, 5μ). The drugs are freely soluble in Methanol. The mobile phase consists of mixture of 10 mM phosphate buffer and Acetonitrile. The pH adjusted to 4 using 1% Orthophosphoric acid. The flow rate was 1ml/min and the effluents were monitored at the detection wavelength of 250nm. Results: Linearity was observed in the concentration range of 6-24μg/ml for Bilastine and 4-24μg/ml for Montelukast sodium. The accuracy of the method was confirmed by recovery studies of tablet dosage forms and was found to be 98.33% and 98.5%for Bilastine and Montelukast sodium respectively. Conclusion:Thus the proposed method was found to be rapid, specific; precise, accurate and cost effective quality control tool for the routine analysis of Montelukast sodium and Bilastine in bulk and combined dosage form. The retention times of Montelukast sodium and Bilastine were found to be 6.7 and 3.6 min respectively. The method was validated for the linearity, accuracy, precision.

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METHOD DEVELOPMENT AND VALIDATION FOR QUANTIFICATION OF APIXABAN IN HUMAN PLASMA USING LC-MS/MS.

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Background: Therapeutic dose of apixaban results in nanogram level plasma concentrations. Therefore, a validated method for the estimation of Apixaban in biological matrices like human plasma for pharmacokinetic (PK) study is essential. Objective:The objective of the current study was to develop and validate a highly sensitive method with the lowest possible sample volumes, so that the same method can be used for any area wherever human plasma is used for analysis. Methodology: Isocratic program conditions were optimized with the composition of phase A ranging from 50 to 20% out of which 20% phase A and 80% phase B gave optimal results at a flow rate of 0.50 ml/min without a splitter. Results: Apixaban and Apixaban 13C D3 were selectively resolved on the reverse-phase column at 2.35 min with a total run time of 4.00 min. For apixaban, the calibration curves were found to be consistently accurate and precise over the range of 0.977 to 250.000 ng/mL. The regression coefficients (r) were greater than or equal to 0.99. The plasma sample extraction method gave consistent and reproducible recoveries for apixaban and internal standard from plasma with good recovery. Matrix effect was found to be ⩽15%. Intra- and inter-day accuracy and precision were found to be acceptable as per the guidelines. Stability studies were also done and the results were found to be within the limits during the entire process. Conclusion: From the results of all the validation parameters, we can conclude that the developed method can be useful for conducting pharmacokinetic, BA/BE and therapeutic drug monitoring studies.

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NEW SPECTROPHOTOMETRIC METHODS FOR THE ASSAY OF ENTACAPONE TABLETS

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Entacapone is a specific inhibitor of cathechol-O-methyltransferase (COMT) which is a major enzyme in the pathway of levodopa metabolism. As a result, entacapone slows the metabolism of levodopa, causing an increase in its bioavailability and duration of action. Entacapone inhibits COMT activity only peripherally, unlike tolcapone which acts both peripherally and centrally. Entacapone was approved for use in the United States in 2003, the second COMT inhibitor approved for use in the therapy of symptomatic Parkinson disease as an adjunct to levodopa/carbidopa therapy in patients with motor complications. At present the authors have developed new UV spectrophotometric methods for the assay of Entacapone tablets in Borate buffer pH 9.0 and the method was validated. Entacapone has shown ^max at 358 nm in Borate buffer pH 9.0. Linearity was observed over a wide concentration range and a calibration curve was plotted. This method was validated and found to be precise and accurate and can be used for the routine analysis of Entacapone tablets.

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OPTIMIZATION OF RP-HPLC METHOD ON ANTIHYPERTENSIVE AGENT BY USING QUALITY BY DESIGN (QBD) APPROACH

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Quality by design (QbD) is a modern and systematic approach for control of pharmaceuticals and product development. Pharmaceuticals quality can be assured by understanding and controlling variable parameters for formulation and manufacturing processes through such structured context. Now-a-days the concept of QbD can be extended to analytical and bio-analytical techniques. Olmesartn medoxomil is a prodrug, hydrolyzed to Olmesartan during absorption from the gastrointestinal tract. Olmesartan medoxomil (trade names Benicar (US), Olmetec (EU) is an angiotensin II receptor antagonist used to treat high blood pressure. In this project, as per our objectives, RP- HPLC method was developed by implementing QbD methodology with mobile phase Methanol: Water (80:20). The flow rate used was 0.8ml/min and UV detection was carried out at 255 nm. The retention time for Olmesartan was found to be 4.4 respectively. A systemic approach was utilized to develop an efficient and robust method which includes beginning with determination of target profile characteristics, risk assessment, design, Experiment and validation. The study was done by Box-Behenken Design (Design Expert Version 10.0.1). In this study interaction of 3 factors i.e. Flow rate, Wavelength, and Mobile phase composition vary at 3 levels. Effect of such critical process parameter on critical quality attribute of the method was studied. Responses in terms of retention times and revolution evaluated throughout all the runs in the design. By taking such runs, Method Operable Design Region (MODR) also termed as Analytical Design Space (ADS) was developed. A desirability function applied to determine the optimum conditions were obtained: the one with higher desirability was selected. Replicates of the run having optimized conditions were taken to confirm the predicted response with actual response. These QbD tools will minimize the risk by increasing the productivity and quality.

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TO STUDY THE EFFECT OF MIRCO – ENVIRONMENTAL CONDITION (PH) ON DRUG RELEASE OF CHITOSAN MATRICES (TABLETS).

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The main objective of the present study is to impact of micro-environmental PH, on drug release pattern from the developed formulation (Tablet) using different grades of chitosan. The chitosan contains a chitin which is a linear polysaccharide found in marine crustacean shells. It is the second most abundant natural polymer after cellulose. The novelty is that when chitosan used alone creates more retarding than HPMC at same level. Chitosan is a biodegradable polymer and the degradation depends on PH. The Aceclofenac is a Non steroidal anti-inflammatory drug analog of diclofenac. Aceclofenac film-coated tablets are supplied for oral administration and should be swallowed whole with a sufficient quantity of liquid. With the help of PH modifiers like Citric acid, Sodium Bicarbonate and Sodium Carbonate, the formulation of Aceclofenac matrix tablet containing chitosan shows the high aqueous solubility. As PH was raised from 1.2 to 6.8 solubility improved considerably. From DSC study a sharp endothermic was observed for Aceclofenac. It is a significant and better choice for the modified release tablet dosage form.

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ENHANCE ANTIBACTERIAL ACTIVITY OF CEFIXIME METAL NANOPARTICLES AGAINST RESISTANT MICROORGANISMS

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Cefixime is an antibiotic for oral administration in treatment of bronchitis, gonorrhoea and respiratory infections. Cefixime metal ion nanoparticles were synthesized with metal ions Ag, Pd, Cd, Ni and Zn and characterized by UV, FTIR, FESEM, Zeta potential and EDAX. The antibacterial effects of nanoparticles were studied using cup plate method against normal and resistant strains of bacteria. Cefixime nanoparticles have shown colour changes indicated the reduction of metal ions which ensures the formation of nanoparticles. UV spectrum of cefixime nanoparticles have shown absorbance in the range of 288-290 nm, the shifting or change of absorbance from λmax 288 might be due to formation of nanoparticles. FTIR spectrum show change in wave number might be due to coordinate bond formation with metal ion. FESEM analysis indicates morphology of Cef-Ni nanoparticles showed a hexagonal structure in the range 42.3 – 96.2 nm; spherical shape of Cef-Zn nanoparticle in the range 36.3 – 62.2 nm. Antibacterial study showed that Cef-Cd, Cef-Zn and Cef-Ni metal nanoparticles show a greater activity against P.aeruginosa and K.pneumoniae and Cef-Cd show better activity against P.aeruginosa. The lowest MIC against E.coli of Cef-Cd and cefixime was 30ug/ml and 50ug/ml was studies by rezasurine dye assay. The synthesized nanoparticles require less concentration as compared to plain drug to inhibit growth of microorganism. The histopathology examination and acute toxicity study of Cefixime silver shown no significant changes in liver and stomach cells of rat between control and experimental group indicates safe dose of nanoparticles.

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METHOD DEVELOPMENT AND VALIDATION OF SPARFLOXACIN AND OFLOXACIN IN TABLET DOSAGE FORMS BY VISIBLE SPECTROPHOTOMETRY

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For the study of Sparfloxacin and Ofloxacin in tablets, a simple, inexpensive, selective, precise, and accurate Visible spectrophotometric method was developed and validated in accordance with ICH guidelines. The DCC reagent was used in this approach to react with the carboxylic acid of Sparfloxacin and Ofloxacin (nucleophilic addition) and 2-Nitrophenyl hydrazine (nucleophilic substitution), resulting in the formation of an amide via DCC-induced coupling. Sparfloxacin and Ofloxacin were found to have absorbance maxima (λmax) at 425 nm and 415 nm, respectively, with linearities of 10-50µg/ml and 10-40µg/ml, respectively. The results showed that the respective R2 values were 0.995 and 0.992 for Sparfloxacin and Ofloxacin. Statistical analyses of data indicated that the developed methods were specific and reproducible. The obtained results from these visible spectrophotometric methods can be efficiently used for the further and routine studies of sparfloxacin and ofloxacin in tablet dosage forms.

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ACTIVATED CHARCOAL :- PROPERTIES AND APPLICATIONS

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Activated charcoal is a fine, odourless ,black powder often used in emergency rooms to treat overdoses. It's toxin - absorbing properties have a wide range of medicine and cosmetics uses, though none are scientifically proven. Activated charcoal is not the same substance as that found in charcoal bricks or burned peices of wood. 'Activation' process strips the charcoal of previously absorbed molecules and free up bonding sites again, increasing its overall surface. A few of the uses of activated charcoal supported by some evidence include:- kidney ,health, intestinal gas, water filteration, diarrhoea, oral health, skin care, deodrant, skin infection. In present review we are discussing applications and properties of activated charcoal. Activated charcoal can often help clear toxins and drugs that include NSAIDS and other OTC anti-inflammatory ,sedatives ,calcium channel blockers ,dapsone ,carbamazepine (Tegretol), Maleria Medications ,Methylxantines (mild stimulationts). To date , there have been no adverse reactions noted with activated charcoal in any of its various forms. Carbons with excellent surface properties and specific functionalities should be developed to create a high affinity for adorable adsorption.

F-194

STRATEGIES FOR IMPLEMENTING QUALITY CULTURE IN PHARMACEUTICAL ORGANISATION

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This Paper tells us about "Quality culture is a culture throughout the organisation that continually view quality as a primary goal it is the pattern the emotional scenery of human habit believe commitment awareness and behaviour concerning quality. It includes Leadership commitment of quality, Empowerment of the employees, Participation as a means of inspiring action recognition and rewards to employees who participate. Quality culture processing in pharmaceutical companies has increased challenges facing their customers safe medication which is effective and must have a high level of quality. New recent advancement in the manufacturing may lead to harm to patients. A number of strategies are now known and applied to the manufacturing company to improve the final quality of the product . However, a synthesis of the literature on these strategies has not previously been undertaken. We can now go through the case studies or article review so as to improve the method and procedures of implementing the strategies .

F-195

DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF EMTRICITABINE AND CLARITHROMYCIN IN BULK AND TABLET DOSAGE FORM

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A new simple, rapid selective, precise and accurate gradient reversed phase high performance liquid chromatographic method (RP-HPLC) has been developed and validated for simultaneous estimation of Emtricitabine and clarithromycin acid in bulk and tablet dosage form.Chromatographic analysis was performed on a c-18 column 9(250*4.6*5)at ambient temperature. The column used was an BDS in isocratic mode, with mobile phase containing tetrabutylammoniumhydroxide buffer and acetonitrile (70:30v/v) adjusted to ph 6.6 with dilute orthophosphoric acid solution. The flow rate was 0.8ml/min and effluents were monitored at 230nm. The retention times of emtricitamine and clarithromycin were found to be 2.33 min and 6.32 min, respectively. The method was validated as per ICH guidelines. The recoveries of emtricitamine and clarithromycin were found to be 98.53 to 100.03 and 98.5 to 99.9% respectively.the proposed method was found to be accurate, reproducible and consistent. It was successfully applied for the analysis of these drugs in marketed formulations and could be effectively used for the routine analysis of formulations containing any one of the above drugs or a combination, without any alteration in the chromatographic conditions.

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H-18

ASSESSMENT OF ERYTHROPOIETIN EFFICACY AND DOSING IN HEMODIALYSIS PATIENTS IN TERITIARY CARE HOSPITAL

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Chronic kidney disease (CKD) is defined by a reduction in the glomerular filtration rate (GFR). Erythropoietin deficiency is the most significant cause of anaemia in CKD. Because the kidney is the sole source of erythropoietin (EPO) synthesis. Morbidity and mortality in Haemodialysis in patients remain very high. To assess the efficacy of ESA in the treatment of anemia in CKD patient. The prospective observational study was conducted with 50 haemodialysis patients and the efficacy is tested through comparing Erythropoietin (4000 IU IV thrice weekly) versus Darbepoietin (40mcg IV twice weekly) such as group A and group B respectively. The male patients were more prone to CKD in (62%) than female and 80% of patients were under age group of 60 to 80 years. Hb level before the administration of Erythropoietin was about 6.4-9.5 g/dl and after the administration the range was between 6.6 -9.7 g/dl. Comparison of Cost Effectiveness found erythropoietin (Group-A) (4000IU/ml) and darbepoetin (Group-B) (40mcg/0.40ml) administered twice weekly. Total Cost is 1,52,496/- and 5,28,960/-rupees yearly. Administration of Darbepoetin (Group B) 40mcg/0.40 ml once a week effectively increased the haemoglobin level when compared to Erythropoietin alpha (Group B) 4000 IU/ml thrice weekly. Erythropoietin alpha (Group B) 4000 IU/ml was cost effective over the other.

H-19

ASSESSSMENT OF PHARMACOKINETIC PARAMETERS OF GABAPENTIN BASED REGIMENS IN DIABETIC PERIPHERAL NEUROPATHY

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Pharmacokinetic variation presents with a challenge during drug selection, administration. The aim of this study is to assess the pharmacokinetic parameters for gabapentin in diabetic peripheral neuropathy (DPN) patients with different drug regimens. A pilot study was carried out with 12 patients following an open labelled design. Patients were grouped into 2 groups where Group A received metformin, sitagliptin, gabapentin; Group B received metformin, voglibose, gabapentin. Blood samples were collected at various intervals and predicted using PMetrics (University of Southern California). Gabapentin levels are assessed using LCMS.The AUC (0-24) of Group A was found to be 163.24 ± 13.2, whereas Group B AUC (0-24) was found to be 121.31 ± 2.7. Despite being in therapeutic window Group A showed much significance ($p<0.05$). Tmax, Cmax also predicted within limits. This study suggests that use of sitagliptin based regimen may enhance the efficacy and therapeutic outcomes in gabapentin regimens in diabetic peripheral neuropathy (DPN).

H-20

MANAGEMENT OF METASTASIS CANCER – A REVIEW

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The current review is about the metastasis cancer that provides an overview of these metastasis essential steps related biochemical factors and targets for intervention. Metastasis cancer occurs when cancer cells break off from the original tumor, enter your blood stream or lymph system and spread to other areas of body. Current treatment for cancer metastasis chemotherapy and radiotherapy, though the new generation of anti-cancer drugs it has been effects on cancer metastasis in addition to their effects on cancer growth. Chemotherapy agents including temozolamide, cisplatin, 5-FU, cetuximab, and mitomycin for concomitant use with radiotherapy for specific indications. Hormone therapy can reach cancer cells almost anywhere in the body and not just in the breast. In such as drugs used selective estrogen receptor modulator (SERM), selective estrogen receptor degrader (SERD) and aromatase inhibitors. Immunotherapy is the use of medicines to boost a person's own immune system to recognize and destroy cancer cells more effectively some immunotherapy drugs for example, monoclonal antibodies, work in more than one way to control cancer cells and may also be considered targeted therapy. Adjuvant therapy is often used after primary treatment, such as surgery. Adjuvant therapy given before the main treatment is called neoadjuvant therapy. It's often used to make the primary treatment such as an operation or radiation treatment easier or more effective. Inhibiting key driver traits of metastasis, should yield survival benefit at any stage of the disease.

H-21

A CASE STUDY ON TETRALOGY OF FALLOT

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Tetralogy of Fallot is a rare of the rarest congenital heart condition that consists of heart abnormalities. To check the treatment approaches and clinical outcomes in one of the most rare disease Tetralogy of Fallot. In this case the patient had defects in the structure of heart – stenosis / narrowing of right ventricular outflow tract into pulmonary artery, which leads to narrowing of valve or infundibulum right below the valve. It caused right ventricular hypertrophy of the myocardium, ventricular septal defect and aortic override of septal defect and together these conditions result in cyanosis in neonates or Newborns. TOF affects about 10% of Newborns. This condition caused 'Tet spells', lethargy, shortness of breath, fainting, clubbing of nailbeds of fingers or toes, cyanosis. The presence of abnormal 'whooshing heart murmurs' is observed.Diagnostic tests include EKG, ECG, chest X-RAY, and cardiac catheterization.The treatment involves intracardiac repair, temporary shunt surgery and the patient given preventive treatment for complications like 'arrythmias' that may arise after surgery. Antihypertensives and multivitamin therapy was given as prophylactic. In this case the patient reported with complaints of sudden onset of shortness of breath (SOB) along with sweating from past 1 year. The confirmatory test for TOF in this patient were ECG, 2D-echo, CT-coronary Angio and post confirmation of TOF, the patient was advised and underwent intra cardiac surgery .The overall quality of life of the patient was improved.

H-22

EVALUATION OF DRUG UTILIZATION FOR LIFETIME ANTIPLATELET THERAPY IN ISCHEMIC STROKE PATIENTS

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Drug Utilisation Evaluation is the marketing, distribution, prescription, use of drugs in society. Stroke, Sudden impairment of brain function due to hypoxia, which may cause death of brain tissue. Dual antiplatelet therapy for longer than first 21days following a transient ischemic attack isn't recommended unless there is a specific indication. To run Drug Utilisation Evaluation for lifetime antiplatelet therapy -ischemic stroke patients. The Prospective Observational study conducted at Neurology department of KG hospital, for the Period of 6months with 200patients of Inclusion criteria. The demographic details indicates male(61%) more prone to Stroke than female(39%). The43% of patients were able to reason out whereas57% of patients weren't able to reason out the lifetime antiplatelet therapy. About52% of the study have accomplished duration of > 1year of their antiplatelet therapy. The recurrence/persistence of complications estimated to10% muscle weakness, memory loss3%, slurring speech5% among total study. The positive outcomes in lifetime antiplatelet therapy -ischemic stroke patients were56%. The clinical pharmacists perform by assessing prescription&reviewing patient information for possible drug interactions/therapeutic duplication for lifetime antiplatelet therapy.

H-23

ASSESSMENT ON QUALITY OF SLEEP AND DEPRESSION IN PREGNANT WOMEN

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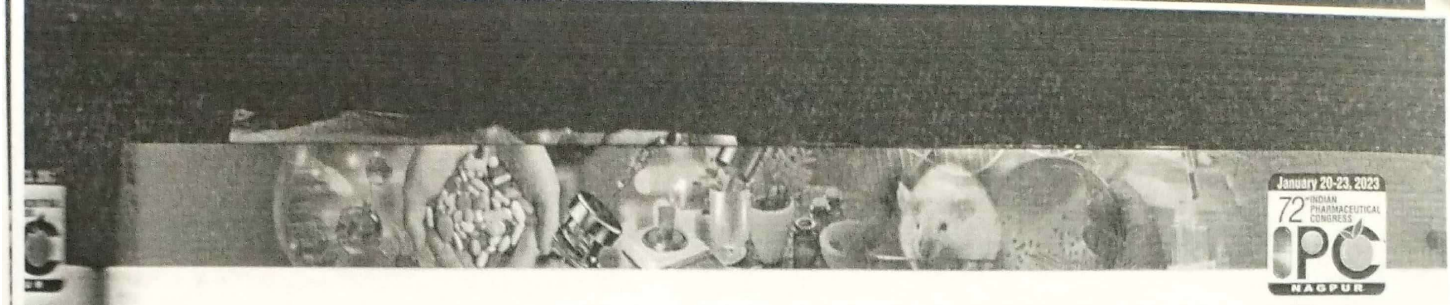
The objective of this study is to analyze the quality of sleep using Pittsburgh Sleep Quality Index (PSQI) and depression level of the patient's using Beck Depression Inventory (BDI), and to find the association between sleep quality and depression among pregnant women without comorbidities. Materials and Depression was assessed with the Beck Depression Inventory (BDI) and the quality of sleep in our study was assessed using Pittsburgh Sleep Quality Index (PSQI). PSQI is a validated self-rated questionnaire that assesses sleep problems or several aspects including sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medications, and daytime dysfunction. Inclusion criteria: pregnant women are eligible. Exclusion criteria: Pregnant women with comorbidities like hypertension, hypothyroid, diabetes. Our study assess that lack of sleep and depression is the most underlying causes in pregnancy First trimester – 23% sleep quality depravation and 18% depression [Rvalue– 0.62] -high correlation. Second trimester – 30% sleep quality depravation and 18% depression [Rvalue – 0.59]- medium correlation. Third trimester – 47% sleep quality depravation and 66% depression [Rvalue – 0.84]-very high correlation. Our study with aim assessing the quality of sleep among pregnant women demonstrated that the quality of sleep



reduces significantly with associated depression level of the patients.

H-24

A PROSPECTIVE STUDY TO ASSESS THE CLINICAL UTILITY OF TARGETED THERAPY IN HUMAN EPIDERMAL GROWTH FACTOR RECEPTOR (HER) 2 POSITIVE BREAST CANCER PATIENTS

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Breast cancer with high levels of the HER2 protein is known as HER2 positive breast cancer. The study was aimed to analyze the treatment approaches in patients suffering from HER-2 positive breast cancer. The prospective observational study was conducted for a period of 7 months. Data was analysed the clinical utility of anti-HER2 therapy in HER2 positive breast cancer patients. Among 35 HER2 positive breast cancer patients collected, 4 (11%) patients have found to be under stage 1 BC, 7 (20%) have stage 2A BC, 6 (18%) patients falls each under stage 2B and stage 3A, 4 (12%) have stage 3B, 3 (7%) patients have stage 3C, 5 (14%) have stage 4 breast cancer. Out of 35, it has been found based on tumor grade that 2 (6%) patients have T0 tumor grade, 7 (20%) patients falls each under T1,T3 and T4, while 12 (34.28%) have T2 tumor grade. Out of 35, 11 (32%) have N0 grade, 12 (34%) patients have N1, 7 (20%) patients have N2 and 25 (14%) have N3 grade. Out of 35, 30 (86%) patients have M0, while 5 (14%) patients have Mx. Out of 35, 9 patients were prescribed with Docetaxel, 4 patients were with Paclitaxel while 6 patients with Taxane therapy, Trastuzumab was prescribed to 26 patients, 17 patients were prescribed with AC therapy. The targeted therapy with Trastuzumab was not given as a monotherapy. The drug Pertuzumab was given to patients in whom there was evidence of metastasis.

H-25

TUBERCULOSIS AS A 'TICKING TIME BOMB: ARE WE READY FOR ANOTHER PANDEMIC WITH RAPID RESPONSE PLAN?

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It is the proverbial elephant in the room, everyone sees it, and no one talks about it. Same is the case with tuberculosis under the shadow of covid-19 in India. Before covid-19 became a global pandemic, much older is the epidemic- TB which affected 2.64 million Indians in 2019 and nearly 4 lakh deaths accounting over 1000 TB deaths per day. The question is are we ready for another pandemic? TB, is a well known bacterial infectious disease primarily affecting lungs and can affect 10-15 individuals more. It causes significant morbidity due to non-diagnosis, non-treatment, and discontinuation of anti-TB medication. Our study and literature shows the National state specific lockdown has affected all key interventions resulting in almost 60% decline in TB notification during lockdown period where gap between estimated TB cases and notified TB cases has been increasing. It was noticed that there was a drop of 62% in notifications during the period Jan-June,2020. The challenges faced during an pandemic are closure of public and private health facilities, fear of contracting virus, non-availability of transport services and lockdown related restrictions which affects access to diagnosis, medication adherence, and follow up. Strategies such as diagnostic algorithm and screening, case finding, consultation, monitoring and evaluation can assist revival of NTEP services during covid-19. Main objective is implementation of rapid response measures to normalize and expand coverage of TB service and revitalization of TB elimination efforts by adopting novel strategic interventions accelerating NTEP[National Tuberculosis Elimination Programme].

H-26

AWARENESS AND KNOWLEDGE REGARDING PCOD/PCOS AMONG SCHOOL AND COLLEGE GIRLS. 2022- TAMILNADU

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Background: PCOD/PCOS (Poly cystic ovary disease) is a type of hormonal disorder causing in enlargement of ovaries with small cysts on the outer edges, which is mostly caused by a combination of hormonal imbalance and genetic tendencies in girls/women. A prospective-based interventional study was carried out to access the awareness and knowledge regarding PCOD/PCOS among 1000 school and college girls in both urban and rural areas. Before the awareness program, the knowledge among 1000 students was reported at about 19% with the highest score of 46%. After the session, the student's knowledge was reported as 30% with a 93% score, 34% with a score of 86% scores and 25% with an 80% score, and the rest of the others with more than 70%. From the study, before the session, the awareness and knowledge about PCOD/PCOS among school and college girls are very poor. But after the session, the knowledge and awareness about PCOD/PCOS are being improved among the girls. Most of the women population are unaware of the causes and symptoms and even about PCOD/PCOS. A much grander awareness is required, especially among the society of women to prevent the aggressive effect of PCOD/PCOS in the next generation for a healthy future society.

H-27

EVALUATION OF SERUM FERRITIN AS A BIOMARKER FOR DISEASE SEVERITY IN COVID -19

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Ferritin is known for its use as a prognostic marker in COVID-19. In this study we aimed to evaluate its prediction ability on the disease severity (need for mechanical ventilation and Death) at a tertiary care hospital. A cross sectional study was carried out in a tertiary care hospital. Patients were divided into two groups as first groups included mild and moderate COVID-19 and second group included severe COVID-19 requiring mechanical ventilation or leading to death. Ferritin levels are evaluated and also concluded with other prognostic markers of COVID-19. 216 patients were enrolled, 38 patients belonged to severity group and 178 patients belonged to non-severe group. On performing logistics regression, although elevated ferritin levels are seen, it is not statistically significant ($p = 0.0596$), Pearson's correlation with lymphocyte count ($r = -0.614$), Albumin levels ($r = 0.712$) and directly .Our study revealed a conflicting result that ferritin alone cannot be initialised as a prognostic marker in COVID-19 severity.

H-29

PREVALENCE OF LIPID ABNORMALITIES IN TYPE 2 DIABETES MELLITUS

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Diabetes Mellitus is a metabolic syndrome characterized by increased blood sugar levels in the body. Lipid profile variations in diabetes are one of the most important reasons for silent heart attacks. The main aim of this study is to evaluate the incidence of lipid profile variations in type 2 Diabetes Mellitus.A Prospective observational study was carried out at Rohini super specialty hospital. Lipid profile values were obtained from the patient after obtaining a written consent form from each patient and correlated with American Dyslipidemic Association standard values. These values were correlated along with American Dyslipidemic Association values on the standard lipid profile panel. This study shows that around 41.42% of men who were diabetic possess a higher probability of incidence of hyperlipidemia and around 51.49% of women who were diabetic possess a higher probability of incidence of lipid profile variations. Diabetes Mellitus is the most common disease among the population across the world. Hyperlipidemia in Diabetes Mellitus possess a major threat of myocardial risk and heart attacks. Regular monitoring of lipid profiles is an important way to prevent silent heart attacks.

H-30

AGGRAVATION OF COVID -19 INFECTION IN HYPERTENSIVE AND NON-HYPERTENSIVE HOSPITALIZED PATIENTS

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In early December 2019, a series of pneumonia cases with unknown reason emerged in Wuhan, Hubei ,China which is later named as COVID-19 caused by novel Coronavirus.As per the WHO till date 663,601,048 people were infected and 6,596,542 died because of Coronavirus infection.COVID -19 is a respiratory infection which is caused by Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) led to pandemic of disease with high virulence and considerable high mortality with common symptoms of fever,fatigue, and dry cough ,loss of taste or smell , dyspnea , myalgia etc.In the current research, it was found that Hypertension is the most prevalent underlying disease in Hospitalized COVID-19 patients.Human pathogenic coronaviruses SARS-CoV-2 bind to their target cells through angiotensin-converting enzyme 2 (ACE2) protein, which is involved in the regulation of blood pressure in the human body.The objective behind the research was to assess the incidence of SARS-CoV infection in Hypertensive and Non-hypertensive groups of patients and the susceptibility of hypertension

H-98

A STUDY OF INTRAVENOUS INCOMPATIBILITY IN INTENSIVE CARE UNIT – ROLE OF CLINICAL PHARMACISTS IN PATIENT SAFETY

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Aim: To identify the incidence of incompatibilities occurring in intravenously administered drugs among critically ill patients. Methodology: A prospective observational study was conducted for a period of six months. 150 critically ill patients were selected for the study. The IV drug therapy given to them were analysed to detect the administration of incompatible drugs using Micromedex software, King guide to parenteral administration, Trissel's Handbook on injectable drugs. Result: A greater number of incompatibilities among all the drug combinations analysed were pantoprazole and ondansetron. 40.26% of incompatible drug combinations, 29.87% of compatible combinations, 20.12% of undocumented combinations and 9.74% of variable combinations were found. Cefuroxime + ciprofloxacin were the most common infusion-infusion drug combinations which were compatible. Among bolus-bolus and infusion-bolus, Ondansetron + Furosemide and Ciprofloxacin + Cefuroxime, were the common incompatible combinations, respectively. Conclusion: Through this study, significant number of incompatible IV drug combinations among admixtures and y-sites along with IV medication errors were identified. An incompatibility chart prepared could prevent the possible IV incompatibilities occurring in ICU settings by providing an alert to the health care professionals involved in the administration of IV drugs.

H-99

A COMPREHENSIVE REVIEW OF PROSTATOMEGALY TREATMENT AND POST SURGICAL COMPLICATIONS

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Benign prostatic hyperplasia (BPH) is also called as prostate gland enlargement is a common condition as men get older. The prostate gland is located at the junction of the urinary bladder and the urethra in men. It secretes a milky, alkaline fluid that constitutes approximately 30% of the volume of semen. It is covered by a connective tissue which contains smooth muscle fibers and elastic tissue. Uncomfortable urinary symptoms, such as blocking the urine flow out of the bladder can caused by an enlarged prostate gland. It can also cause bladder, urinary tract or kidney problems. Medications, minimally invasive therapies and surgery are the several effective treatments for prostate gland enlargement. To choose the best option, the patient and the doctor will consider the patients symptoms, the size of the prostate, other health conditions and the patients preference. Moderate to severe Lower Urinary Tract Symptoms (LUTS) from BPH or mild LUTS that are deemed bothersome by the patient may give pharmacologic treatment. Alpha-1 Adrenergic receptor antagonists and 5-alpha reductase inhibitors are the 2 major classes of medications for BPH . During the procedure of transurethral resection of the prostate (turp), patient may experience bladder perforation, bleeding, coagulopathy, transient bacteremia and septicemia, A major complication of TURP is the excessive absorption of irrigation solution resulting in hypervolemia and dilutional hyponatremia. This review provides an overview of the etiology, symptoms, management of benign prostatic hyperplasia as well as post-surgical complications and lifestyle modifications that may enhance patient conditions.

H-100

ASSESSING THE PRESCRIBING PATTERNS OF ANTIBIOTICS IN TERTIARY CARE HOSPITAL: A PROSPECTIVE STUDY

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Antibiotics are drugs used for treating infections caused by bacteria. Antibiotics are currently the most commonly prescribed drugs in hospitals worldwide. The aim of the study was to analyze the prescribing patterns of antibiotics and to observe the rational use of antibiotics. A prospective study was conducted for a period of 10 months in tertiary care hospital in Hyderabad. Prescriptions containing antibiotics were taken into consideration from patient case sheets who fitted the inclusion criteria. A total of 729 prescriptions with antibiotics were included, majority of the antibiotics prescribed to male patients with 69.5% and females patients with 30.5%. Most of the antibiotics were prescribed between the age group of 19-59.

Culture test was done in
negative, the most c
with 51%, 22%, 1
(40.3%), and
Infections t
was the m
Forte, Piptaz.
Augmentin (12%)
prescribed antibiotics
Fluoroquinolones 2% and
of antibiotics which was found

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H-101

IMPACT OF THIAMINE SUPPLEMENTA
PERIPHERAL NEUROPATHY

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Background-diabetic Peripheral Neuropathy(DPN) is one of the
complications of Diabetes Mellitus. Studies have suggested
observed in diabetes mellitus and predominantly in DPN patients.
incidence of thiamine deficiency and studied the effects of
patients. Materials And Method-A randomized trial study was
2021.Diabetic Peripheral Neuropathy patients clinically
conduction velocity (< 50 meters/second),elevated homocysteine
included in the study. Patients were grouped into two groups.
75mg/day along with other antidiabetic medications and
received B-complex with 10mg/day thiamine.NCV was carried out
months end point. RESULT-84 patients were included and
randomized permuted blocks.76 patients(group I-40 patients, group
the study. Insufficient levels of thiamine is observed in many patients
group showed significant improvement in glycemic profile.
hba1c($p < 0.001$). No significant adverse drug reaction and hypervitaminosis
groups. Conclusion-Thiamine as a supplement has shown significant
as well as neuropathy. We recommend further research to understand the
using thiamine.

H-102

A LUMPY SKIN DISEASE VIRUS: A REVIEW

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Lumpy skin disease is the most notifiable disease in cattle which is caused by a virus belonging to the Capripoxvirus genus of the family Poxviridae. LSD has been widespread to most of the African Countries as well as in Middle East countries and can be prevalent to rest of Asia and Europe can be considered. The objective of this review is to make available the accessible information on the various aspects of the lumpy skin disease such as its clinicopathology, transmission, epidemiology, diagnosis, prevention, treatments, and the potential role of wildlife in the further spread of disease. Recently the outbreak of lumpy skin disease was resulted in 1850,000 cases and death of over 97,000 cattle from July 22 to September 22 reported in Gujarat and Rajasthan. Over 50,000 deaths in Rajasthan, 1436 deaths in Maharashtra, 378 deaths in Uttar Pradesh have been reported. LSD causes economic losses to the livestock farmers and industries of affected counties such as mortality loss, milk loss, medication cost, labour cost, induce infertility in affected animals, cattle movement restriction also leads to indirect losses to the country. This review can be concluded that preventive measures should be implemented to prevent in future economic losses, which requires high level of awareness at technical and political level.

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J-19

MEDICINAL PLANTS IN ORAL CARE COSMECEUTICALS – A FIELD STUDY

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Herbs have been used for centuries to avert and treat disease. Oral hygiene products have been used by many people over the years. Toothpastes and mouthwashes were major products used for health and beauty, and demand for these dental products is high. Plants are our first choice when it comes to health issues, as they are such a large part of the nature that surrounds us. Compared to herbal products, chemical compounds are associated with more side effects, so herbal medicines are cheaper to use and researchers are more interested in such products. In oral hygiene products, anti-inflammatory and anti-hemorrhagic plant extracts are of great interest to dentists. Ayurveda is an ancient science- based Indian system for health care and longevity. The use of traditional means to maintain oral hygiene has a long tradition and is still widespread today in rural areas Africa, South America and the Indian subcontinent. The most commonly used herbal remedies include: It is derived from the plant in the form of chewing sticks, toothpastes, mouthwashes and chewing gums that show anti-plaque and antibacterial benefits. The herbs described in this article are Clove, Aloe Vera, Evening primrose, Neem, Thyme, Turmeric, Meswak and summary of other herbs that are useful in oral care products.

J-20

STUDY ON CHALLENGES AND OPPORTUNITIES OF COSMECEUTICALS IN INDIA.

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Cosmeceuticals products that cure, treat, mitigate, or prevent disease or that affect the structure or function of the human body, if a product makes such claims, it will be regulated as a drug. Nowadays, "cosmeceuticals" is a new topic in the cosmetic industry, which is the fastest-growing consumer products sector with huge growth opportunities for international companies. The personal care, cosmetics and cosmeceuticals industries in India have shown consistent high growth over the last few years. The high cost of manufacturing of cosmeceuticals has also become an entry barrier for the Indian market. It is an opportunity that innovative products with multiple benefits such as anti-ageing, moisturizing and SPF protection are gaining prominence in the cosmetics industry. The cosmeceuticals market has great potential among the main Asia-Pacific countries, including Japan, China, and India. India shared a total of 5.7% in the Asia Pacific cosmeceuticals industry, with stupendous growth witnessed in the hair care product segment at Compound annual growth rate of 22.0% from 2007- 2012. It describes a new category of products placed between cosmetics and pharmaceuticals that are used for the enhancement of both the health and beauty of the skin. They are the new pillars of skincare, as well as advancements in dermatological products. Every cosmeceutical makes the claim to have active substances with healing, disease-fighting, or therapeutic capabilities. This review highlights the recent knowledge about challenges and opportunities of cosmeceuticals in India.

J-21

THE CONSUMER PROTECTION ACT: NOW AND THEN

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Consumer protection is a socio-economic requirement carried out with a prime objective of consumer satisfaction and protection of their interests. Consumer protection has been a responsibility of the rulers in India even before 1947 but was implemented in indirect ways. One of the important legislation in this field was the Trade Practices Act, 1974 which came into existence on 1 October 1974. But a formal consumer protection law, which purely focuses on consumer protection, was enacted in India in the year 1986. Consumer Protection Act 1986 (CPA 1986), was much more detailed, comprehensive and effective in comparison to other consumer protection Acts in various countries. Any act cannot stand the pace of development and becomes fully or partly obsolete. This makes it necessary to amend them. With changes in economy, market dynamics, consumer needs and demands along with exponential growth of information technology and dependence on it, the consumer protection act was amended in 2019. This paper presents a comprehensive review of old and amended CPA and focuses on suggestions for betterment of CPA with futuristic view.

J-22

REGULATORY REQUIREMENTS PERTAINING BLOOD PRODUCT IN INDIA AND USA: A COMPARATIVE STUDY

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Blood and blood products are highly valuable that can give life to another patient. There isn't any substitute for human blood even though we have made enormous scientific and technological breakthroughs. We are still lacking a clear and rigid regulatory framework for the regulation of blood products. Because there is often a lack of blood during an emergency, it is the patient's relative or friend's responsibility to arrange for a replacement and in this circumstance, the healthcare provider fails to safeguard the public's health. comparison with the United States, India has very lax norms and regulations, which may be a result of the government's incapacity to enforce laws, regulations, and policies, as well as people who may not be aware of or unable to adhere to quality assurance and/or good manufacturing practices. Due to a severe shortage of donated blood, around 12000 individuals in India die every year. India collects about 11 million units of blood annually, when it needs about 15 million, which is far insufficient to meet the demand. This study indicates a number of issues that must be resolved since they may delay the timely delivery of safe blood products, which demands strengthening, planning and regulation of blood transfusion services. So, this study clarifies the comparative blood transfusion practices in both India and the United States. The goal of this study is to minimize the risk as far as practicably possible without significantly lowering the availability of resources that can save lives.

J-23

A CROSS-SECTIONAL SURVEY ON MANDATORY GENERIC PRESCRIBING AND GENERIC SUBSTITUTION FOR BRAND-NAME MEDICINES IN INDIA

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It is ironical that India has very low domestic consumption of the generics, despite being largest provider of generic drugs to the World dominated by branded medicines. It's matter of huge burden to public health funding of the Government as well as the patient's huge out-of-pocket expenditure. A cross-sectional study is performed for systematic review and critical appraisal of perception among various stakeholders on (i) mandatory prescribing with a generic name and (ii) generic substitution for brand-name medicines. The cross-sectional survey was done in the form of verbal interviews with stake holders (N=390) comprised of physicians (116), representatives of the industry (24) and regulatory bodies (12), pharmacists (140) and patients (98), which revealed a lot of misconceptions with lack of trust on the quality, stability and extent of regulatory control of generic medicines. Out of 390 respondents, 160 (41%) were found to have basic understanding on quality, safety, efficacy, cost & applicable regulatory controls on generics and lack of knowledge was conspicuous even among the educated group. It was observed that majority respondents were skeptical about the quality and regulatory control on generics and neither the physicians nor pharmacists are in favor of mandatory prescribing of medicines using generic names. There was a mixed response on the right to generic substitution by the pharmacist. The outcome of this study warrants the need for continued education and improving the perception of generics among all stakeholders.

J-24

EXPLORATION OF INSTRUCTION FOR USE AND GENERAL INFORMATION DISPLAYED ON DENTAL MATERIAL AND DEVICE LABELS/PACKAGES

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The regulatory agency (including FDA) regulates the marketing approval, licensing and clearance of OTC products (including dental material) to ensure product safety and effectiveness. The agency further extends its regulation to labelling and promotion of the product. Dentistry is the branch of medicine that is involved in the study, diagnosis, prevention, and treatment of diseases, disorders and conditions of the oral cavity. Although the practice of dentistry is governed by State law and regulations but dentist and patient must be aware of safety of the product. This can be achieved by proper labelling practice that can protect patients from adverse errors. Based on the data obtained, a unique packaging standardization checklist was developed. An exploratory cross-sectional study was performed using various search engines and websites to access the laws and regulations existing pertaining to dental materials packaging. This study considered 20 brands of dental material instruments for

functional new biologically active molecules toward desired properties. Many examples show how effective artificial intelligence is in this area. It is possible to combine drug discovery with synthesis planning and ease of synthesis, and shortly, more and more automated drug discovery by computers is anticipated

A-73

DESIGN AND INVITRO EVALUATION OF POLYHERBAL HAIR OIL

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Hair is a dynamic, captivating and beautifying part of the body. Herbal products have been generally used by individuals as home medications. In recent times the use of herbal medicines has increased enormously because they are safe, non-toxic, natural, easily available and well suited with all skin types when compared to synthetic products. The main aim of the study is to develop a polyherbal hair oil formulation that can be used to treat hair fall, dandruff, grey hair, baldness and dry hair. Experimental methods: Formulations subjected to evaluation includes organoleptic, phytochemical and physical parameters like pH, viscosity, specific gravity, refractive index, acid and saponification value. The herbs used are Emblica Officinalis, Lawsonialnermis, Indigo feratinctoria, Eclipta Alba, Tridaxprocumbens, Ocimumtenuiflorum, gel of Aloe barbadensis, oils of Cymbopogon Citratus and Cocos Nucifera. Out of all formulations of 2%, 4% and 8%, the 8% hair oil formulation isshowing color intensity more and the same is maintained even after shampooing three times and reported to have properties like hair growth, prevents premature greying of hair, antidandruff, and moisturizing properties. polyherbal hair oil were reported to havegood properties like hair growth, prevents premature greyingof hair, anti-dandruff and moisturization. Colour intensity of poly herbal oil after shampooing the hair for three times also showed satisfactory result.

...sed in the design of oleogels as potential controlled delivery systems. A ...tion is provided to their newest therapeutic applications.

A-115

...NT AND CHARACTERIZATION OF NIOSOMAL GEL FOR THE TOPICAL ADMINISTRATION OF LOSARTAN POTASSIUM

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...tassium is an angiotensin II receptor antagonist, used in the treatment of ... Losartan potassium is generally available in the form of oral formulation with a ...availability of 25-33%. In order to increase its bioavailability, topical ... of Losartan potassium was attempted. The topical administration of this drug ... formulating a gel incorporated with niosomes. After screening span 80 was ... nonionic surfactant. Drug excipient compatibility study was done by FT-IR ... Ether injection method was used to prepare niosomes though thin film hydration ... also tried. Six formulations were developed by taking different ratio of span 80 to ... The prepared niosomes were characterised for appearance, consistency, clarity, ... zeta potential and entrapment efficiency. These niosomal preparations are ... gel where Carbopol 934 was used as gelling agent. These niosomal gel ... were evaluated for pH, in vitro drug release studies using Franz diffusion cell. ... of F1 formulation was found to be 1835.0 nm. F1, F2 and F3 niosomal ... entrapment efficiency was found to be 78%, 58% and 55% respectively. The pH ... be in the limits which indicated less chances of irritancy on skin. The zeta ... of the niosomal dispersion is also said within the limit range i.e., -3.7mV. The ... index was also found out to be within the limits i.e., lesser than 0.7, the value ... indicates uniform niosomal vesicles. The in vitro release study was carried out ... formulations F1, F2 and F3 and it was found that F1 formulation has high drug ... compared to F2, F3. Thus, Losartan potassium can be tried for topical application to ...ability and further studies are required to be performed for pharmacodynamic

COMPARATIVE QUALITY CONTROL PARAMETERS OF THREE DIFFERENT BRANDS OF PARACETAMOL TABLETS IN DIFFERENT MEDIA

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Paracetamol is an analgesic and antipyretic OTC drug. Efficacy of tablet formulation in clinical trials depends on safety, released amount specified on label and its accessibility to the human body. The goal of an oral tablet is to deliver the medicine to the human body to achieve desired therapeutic impact.The study is designed to investigate the quality control parameters of paracetamol tablets of three different brands. The quality control parameters such as weight variation, hardness, friability, disintegration, dissolution and content uniformity were performed by using high precision balance, Roche Friabilator, Monsanto hardness tester, Dissolution apparatus (6 paddle), UV spectrophotometer.All paracetamol tablets of three different brands have passed the quality control test. The weight variation of all the three different brands of paracetamol tablets is within pharmacopoeial limits and none of the tablets deviated the limits (±5%). Similar results were repeated with hardness, friability, disintegration, dissolution, and content uniformity.

FORMULATION AND EVALUATION OF NISOLDIPINE SUBLINGUAL TABLETS USING SUPERDISINTEGRANTS

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Nisoldipine is a calcium channel blocker used for treatment of angina pectoris, hypertension and congestive heart failure etc. It belongs to BCS class-II i.e., low solubility & low bioavailability due to extensive pre-systemic metabolism of Nisoldipine. Objective: the main objective of this research work was focused to improve solubility and bioavailability of the Nisoldipine using superdisintegrants. Methodology: Sublingual tablets of Nisoldipine were successfully prepared by direct compression method using superdisintegrants like Crosspovidone, Crosscarmellose sodium and Sodium starch glycolate for the better patient compliance and effective therapy. The relative efficiency of these superdisintegrants is to improve the disintegration and dissolution rate. Results: The disintegration of F1, F2, F3 with Crosspovidone formulations was found to be as 8, 6, 5secs respectively and found better than F4, F5, F6, F7, F8, F9 formulations. In Formulation F3, In-vitro percentage drug release was found to be 96.96% in 10 minutes containing 6% crosspovidone. Prior to compression, the blend of drug and excipients were evaluated for flow properties such as Angle of repose, Bulk density, Tapped density, Percentage Compressibility, and Hausner's ratio. Conclusion: All the prepared formulations shown good flow properties. Post compression evaluations of prepared sublingual tablets were carried out and were found to be in compliance with pharmacopoeial and non pharmacopoeial limits. From this study, it is concluded that, the optimized F3 sublingual tablet formulation showed less disintegration time (5 secs) and more percent drug release within 10 minutes (96.96 %).

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effects. The transdermal route of delivery for many drugs is limited since very few drugs delivered at a viable rate using this route. The stratum corneum of skin works as an effective barrier, limiting most drugs' penetration through the skin. The use of nanocarriers for increasing the range of available drugs for the transdermal delivery has emerged as a unique and alternative method. Both the lipophilic and hydrophilic drugs can be delivered via a range of nanocarriers through the stratum corneum with the possibility of having local or systemic effects to treat various diseases. The skin structure and major obstacle for transdermal drug delivery, different nanocarriers used for transdermal delivery, i.e., nanoparticles, ethosomes, dendrimers, liposomes, etc., The combination of nanocarrier and physical methods, including iontophoresis, ultrasound, laser, and microneedles, improving the therapeutic efficacy of transdermal drugs

A-655

NASAL MICROEMULSION FOR THE MANAGEMENT OF ALZHEIMER'S DISEASE

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The aim of this investigation was to create novel intranasal microemulsion containing Donepezil for the treatment of Alzheimer's disease. Nasal route is preferred for the treatment of central nervous system ailments due to an olfactory route. Microemulsion was selected as suitable dosage form as these dosage forms are thermodynamically stable, optically transparent, isotropic dispersions of oil and water stabilized by a surfactant and co-surfactant. Isopropyl myristate was chosen as oil while tween 80 and polyethylene glycol 400 were chosen as surfactant and cosurfactant respectively based on phase solubility studies. Microemulsions were prepared by the spontaneous emulsification method. Pseudo-ternary phase diagrams were constructed to obtain the appropriate ratio of tween 80: polyethylene glycol 400 which can result in to large existence of microemulsion area. The prepared microemulsions were characterized for particle size, pH, drug content, polydispersity index, zeta potential, conductivity, viscosity and in vitro drug release. Ex vivo permeation studies were carried using sheep nasal mucosa membrane. Based on results of in vitro and ex vivo studies, one formulation selected for in vivo study in Swiss albino mice. The animals were divided into groups, control, standard (oral) and test (intranasal) respectively. The intranasal Donepezil microemulsion was shown lesser intensity of Alzheimer's symptoms which may be due to larger extent of selective nose to brain delivery of drug in comparison to oral suspension of Donepezil. This may help in decreasing the dose and frequency of administration of drug that may possibly maximize therapeutic benefits and may also reduce the cost of therapy.

possessing a methylsulfonyl COX-2 pharmacophore at the para position of the C-2 phenyl ring were synthesized as COX-2 inhibitors. Firstly, 2-(4-(methylsulphonyl)phenyl)quinoline-4-carboxylic acid (intermediate) was synthesized from isatin and 4-methylsulphonyl acetophenone via Pfitzinger reaction. Then, intermediate was converted to 2-(4-(methylsulphonyl)phenyl)quinoline-4-carboxamide derivatives (1a - j) when treated with corresponding primary aliphatic or aromatic amines via coupling reaction in presence of ethylcarbodiimide (EDC). All the synthesised derivatives were characterised by melting point, thin layer chromatography and spectral (IR, 1H NMR, 13C-NMR and MASS) studies. Molecular docking study of compounds 1a - j were performed against COX-2 (PDB ID: 1cx2) by using AutoDock Vina software. In docking study, the compounds 1a, 1b, 1c, 1e, 1h and 1j were showed acceptable binding interactions (affinity in kcal/mol) in comparison with reference drug celecoxib. The title compounds were screened in vivo using carrageenan induced rat paw edema model. Compounds 1a, 1b, 1c, 1e, 1h and 1j significantly inhibited the rat paw edema depending upon the dose employed when compared with reference drug celecoxib (50 mg/kg).

B-76

INSILICO DESIGN, MOLECULAR DOCKING STUDIES, PHARMACOKINETICS PREDICTION, SYNTHESIS, AND NTIMICROBIAL EVALUATION OF COUMARIN DERIVATIVES

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For early evaluation of potency, selectivity of lead molecules, and their potential ADMET to reduce cost, and failures and speed up the successful development of new molecular entities. In a drug intended for oral use, good drug absorption and appropriate drug delivery especially play a key role. The molecular structure is at the basis of ADMET (absorption, distribution, metabolism, and excretion) properties. Coumarin and its derivatives are remarkable because of

[illegible] extensive biological activities such as antidiabetic, antiallergic, antimutagenic, anticancer, antioxidant, antiparasitical, and antifungal activities.For this study, we designed coumarin derivatives and analyzed for Lipinski RO5[1] properties to know their oral drug like properties.The finding exposed that coumarin derivatives have good drug like properties and could be developed as oral drug candidates.Molecular docking investigations of designed coumarin derivatives displayed remarkable inhibition ability towards (1DY) with the binding energy of -8.3 to -9.3 kcal/mol. BS fig. 9a, 9b, 9c, 9d, 9e, 7a, 7b, 7c)more than standard indomethacin. 3-acetyl Coumarin derivatives (8) - 3 were synthesized and characterized by IR, H NMR, and Mass spectral data and evaluated for antimicrobial activity by Modified Kirbys-Bauer method with MIC[2] against three bacterial strains S. aureus,Salmonella typhi, K.pneumonia. The compound 7b showed the highest inhibition towards S. aureus, Compound 8, 8c, 8d and 8 showed the highest inhibition against Salmonella typhi. Compounds 8, 8b& 8d, showed the highest inhibition towards K.Pneumonia than the standard. This attempt is to select the drug molecule which shows desired therapeutic effect.

B-77

EVALUATION OF FLAVONOIDS IN THE LEAVES OF ARGYREIA SPECIOSA

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Argyreia speciosa which contain flavonoids having anthelmintic activity.The aim of this work is to extract, standardize and evaluate flavonoids present in the leaves of Argyreia speciosa.The present investigation the leaves of Argyreia speciosa have been extracted with appropriate organic solvents to yield flavonoid rich fraction. The defatted plant material was extracted for isolation of flavonoid rich fraction with the help of 80% ethanol using various methods like maceration, soxhlation, microwave assisted extraction, ultrasonication and reflux condensation.The maximum yield obtained is recorded. The TLC fingerprint profile for falvonoids rich fraction is also developed with the help of marker flavonoid.

B-78

MOLECULAR DOCKING: A NOVEL APPLIANCE FOR STRUCTURE BASED DRUG DISCOVERY

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Molecular docking has become an increasingly significant tool for drug discovery. In this review paper, we present a shortterm introduction of the available molecular docking methods, their development, and applications in drug discovery. The relevant basic theories, including sampling algorithms and scoring functions, are potted. Flexible receptors molecular docking approaches, especially those as well as backbone flexibility in receptors, are a challenge for obtainable docking methods. A newly developed Local Move Monte Carlo (LMMC) based approach is presented as a potential solution to flexible receptor docking problems. Molecular docking provides new approaches for drug discovery. Computer-Aided Drug Design and Discovery (CADDD) is a speedily rising area that has seen many successes in a very short period. Many massive pharmaceutical companies, in addition to the academe, adopt CADDD for drug lead discovery. Through Molecular Docking, the binding mode as well as the affinity of the complex formed is estimated and thus helpful in the Molecular Recognition Process docking on the way to the discovery of new drug leads.

B-79

SYNTHESIS, INSILICO DESIGN AND BIOLOGICAL EVALUATION OF DITHIOCARBAMATE DERIVATIVES AS CHEMOTHERAPEUTIC AGENTS

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Background: Dithiocarbamates are considered as an important motif owing to its substantial biological applications in medicinal chemistry. Concentrating on medicinal attributes of these compounds we got various synthetic approaches which leads in the drug discovery of small molecules. Recent advance study shows that they have anticancer, Antifungal, antibacterial, anti-Alzheimer, antitubercular, anti-glaucoma, anti-cholinergic, anti-inflammatory activities which elaborated with notable examples. Methods: The synthesis of this framework can easily be achieved via a one-pot reaction of primary/secondary amines, CS2, and alkyl or aralkyl [illegible] halides, either in the presence of a base or without base. Results: Present research work focuses on the synthesis, insilico drug design and evaluation of new dithiocarbamate derivatives as chemotherapeutic agents. All designed compounds were synthesized and characterized by using different spectroscopic techniques. Subsequently, subjected to molsoft, molinspiration, swiss admet and pkcsm to predict their molecular properties, which are important for the drug candidates. Simultaneously docking studies were performed using Autodock Vina software and evaluated for biological activity. Conclusion: The results indicate that, compounds satisfy to Lipinski's, as they should theoretically manifest good oral absorption. This acceptability with respect to Lipinski rule proves them as safe administered drugs and establishes their pharmacological activity. Among the synthesized compounds, 8 exhibited equivalent potency when compared standard drug Ceftriaxone. The docking study suggest that the hydrophobic interactions are important for antimicrobial activity rather than hydrogen bond interactions.

B-80

MOLECULAR DOCKING STUDIES OF 4-IODOSALICYLIC ACID HYDRAZONE DERIVATIVES AS ANTIMICROBIAL AGENTS

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4-iodosalicylic acid hydrazone derivatives have been reported to possess anti-microbial activity. Molecular docking was performed on a series of twenty two 4-iodosalicylic acid hydrazone derivatives on Penicillin Binding Protein (PDB code-3MZF, resolution: 1.5 Å, Imipenem, the co-crystallized ligand) using Molegro Virtual Docker 6.0. ISH16 [2-hydroxy-N-[(1H-imidazol-4-yl)methylidene]-4-iodobenzohydrazide] displayed four hydrogen bond interactions with Ser61, Ser110, His216, Thr214 and has equivalent binding affinity as compared to standard Ciprofloxacin. It exhibited significant binding on the active site in comparison to ciprofloxacin and cefuroxime. The binding interactions will be helpful in identifying the key areas of binding and will be fruitful in designing of new hydrazine derivatives as anti-microbial agents.

B-81

GSK-3 BETA INHIBITOR : AN EMERGING ANTI-ALZHEIMER AGENT WITH ITS INSILICO SCAFFOLD AND VIRTUAL SCREENING

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Alzheimer's disease (AD) is a neurological condition that affects older people and is progressive, multifaceted, and complicated in nature. Cholinesterase inhibitors, NMDA receptor antagonists, and their combination therapy, which is currently approved therapy, can temporarily relieve symptoms. GSK-3 Beta is an emerging target for the treatment of neuroinflammatory disorder like Alzheimer's disease. GSK-3 Beta is responsible for the hyperphosphorylation of tau protein which is the major component of neurofibrillary tangles (NFTs) and amyloid beta induced cell death that causes AD pathogenesis. For this, we have done virtual screening of various natural product database . Initially all the natural compounds were screened ,after that few of them were selected and ADMET is predicted and they were passed through BBB parameter. From the ADMET analysis, top compounds were chosen and employed for the docking studies by using Auto dock Vina. Then from that docking results have selected top compounds which are having the best activity against GSK-3 Beta and employed for the MDS studies. The development of potent and specific inhibitors is specific understanding molecular recognition and protein-ligand interactions.

B-82

QSAR & PHARMACOPHORIC ANALYSIS OF SOME 5-(SUBSTITUTED)-1H-PYRAZOLE-4-CARBONITRILES AS COX-II INHIBITORS

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Three Dimensional quantitative structure activity relationship (3D-QSAR) analysis using k-nearest neighbor molecular field analysis (kNN MFA) and pharmacophore studies were performed on data set of pyrazole derivatives [5-(substituted)-1-[5-(methylsulfonyl)-6-(methylsulfamoyl)pyridin-2-yl]-3-(di/tri-fluoromethyl)-1H-pyrazole-4-carbonitrile] to search the structural requirements for COX-II inhibitory activity. The best models exhibited the cross validated correlation coefficient (q2) value of 0.6955 and 0.6790 and predicted correlation coefficient (pred_r2) of 0.7718 and 0.4715 respectively. The pharmacophore was [illegible]

patients might involve reviewing the medical records of patients who have been prescribed these medications and assessing the frequency and severity of any adverse effects that have occurred. This could involve comparing the rates of adverse effects between the two medications and determining whether certain patient characteristics, such as age, sex, or coexisting medical conditions, are associated with a higher risk of adverse effects. The study might also assess the impact of different doses of the medications on the risk of adverse effects, and whether any measures, such as monitoring electrolyte levels or adjusting the dosage, can help to mitigate these effects.

B-180

ANALGESIC, ANTI-INFLAMMATORY, AND ANTIMICROBIAL ACTIVITIES OF NOVEL HETEROCYCLIC SUBSTITUTED BENZIMIDAZOLE SCAFFOLD ANALOGS

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In the current research, Analgesic, anti-inflammatory, and antimicrobial activities of novel heterocyclic substituted benzimidazole scaffold analogs were designed and synthesized. The objective behind the research was to synthesize novel analogs with negligible ulcer index, as new class of analgesic, anti-inflammatory and antimicrobial agents by hybrid approach. The synthesized compounds were characterized by FT-IR, 1H-NMR, Mass spectroscopy and by means of elemental analysis. From o-phenylene diamine and 4-amino benzoic acid, several novel benzimidazole scaffold containing isoxazole, pyrimidine, pyrazole moieties were synthesized by diazotization and coupling mechanism ethyl 2-(2-(4-(1H-benzimidazol-2-yl)phenyl)hydrazono)-2-cyanoacetate intermediate followed by dehydrative cyclization with amine derivatives. The coupling reagent containing active methylene group ethyl cyano acetate. All test compounds were screened for its analgesic, anti-inflammatory, and in vitro antimicrobial activity by tail flick method, carrageenan induced foot paw edema method and agar streak dilution method. Most active compounds were examined for its ulcerogenicity by pylorus ligation method. The relationship between chemical structure and biological activities of the test compounds were discussed. Among various tested compounds it was found that the pyrazolone derivative 4-(2-(4-(1H-Benzimidazole-2-yl)phenyl)hydrazone)-1-(4-methoxyphenyl)-3-amino-1H-pyrazol-5-one exhibited least ulcer index which are compared with that of standard Diclofenac than the isoxazolone derivatives and pyridimidinone derivatives. Thus, it can be concluded with the study one compound emerged out as the lead molecule with negligible ulcer index and designed good anti-bacterial activity. Nevertheless, further structural modification is designed to enhance these activities with the low ulcerogenicity index.

IN SILICO ANALYSIS AND MOLECULAR DOCKING STUDY FOR ANTI-DIABETIC AND ANTICONVULSANT ACTIVITY USING NOVEL MANNICH BASE BENZIMIDAZOLE DERIVATIVES

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The purpose of this study was to analyze the anti-diabetic and anti-convulsant activity of novel Mannich base benzimidazole derivatives, the main objective of molecular docking in current drug discovery is that it is employed to rationalize ligands activity towards a target of interest and to perform structure-based virtual screening. Docking is used for the virtual screening of databases and for the prediction of the strongest binders used on various scoring functions. In this we design mannich base benzimidazole derivatives which were used as a ligand for molecular interaction targeting NMDA and α -amylase receptors. For this study, we used PDB Lab, ChemDraww, and VLifeMDS 0.3 softwares.12 benzimidazole derivatives were designed and docked each derivative against four different NMDA receptors viz. 4NF8(A8,-5.430), 1PBQ(A4,-5.048), 3DEL(A4,-4.994), 3DEK(-5.182) and four different α -amylase receptors viz. 1HNA(A8,-5.048), 1BLI(A4,-4.702), 1SMD(A3-4.951), 4W93(A8,-5.212).from the current study we concluded that NMDA receptor PDB code 4NF8 shown significant anticonvulsant activity by A8 derivative with a minimum score of -5.430. Similarly, α -amylase receptor PDB code 1SMD showed significant antidiabetic activity by A8 derivative with a minimum score of -5.212. From the above discussion, we concluded that analogue was found to be more active for anticonvulsant and antidiabetic activity among all the derivatives.

B-207

MOLECULAR DESIGN, SYNTHESIS AND BIOLOGICAL EVALUATION OF NOVEL CYTOTOXIC TARGET PIM1 KINASE

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Cancer encompasses a collection of diseases in which normal cells progressively transform into malignant cells accompanied by an augmented proliferation, invasiveness and metastasis. Cancer treatment and prevention remains to be an unmet medical need despite the massive investments and advances in their therapeutic intervention. Targeted therapy of cancer is the new era of precision medicine that targets proteins, genes, and biomarkers that control how cancer cells grow, divide and spread. Targeted and specific inhibition of molecular oncogenic pathways is theorized to have a significant role in hindering the progression of a specific tumour and an effective strategy to combat cancer. The proviral integration site for Moloney murine leukemia virus 1 (Pim1) is a serine/threonine kinase and is able to promote cell proliferation, survival and drug resistance. Overexpression of Pim1 has been observed in B-lymphoid, myeloid cancers, hematopoietic malignancies, prostate, ovarian and uroepithelial cell carcinomas.

The present study involves the design, synthesis and characterization of a series of novel 5-bromo substituted isatin derivatives against PIM-1 kinase enzyme. The designed molecules were subjected to a quantitative estimate of drug-likeness properties and based on that molecules were screened for molecular docking studies to find the binding affinity against PIM-1 Kinase enzyme in order to rationalize their anticancer activity against SKV03 cell line. The compound 4d proved to be the best anticancer drug candidate with IC50 values of 9.70 μM when compared to standard drug doxorubicin with IC50 values of 9.70 μM, also compounds with good cytotoxic action were subjected to PIM-1 kinase assay activity. From the assay results, it is clear that compound 4d, showed the highest PIM-1 kinase inhibitory activity with IC50 value of 1.12 μM, and can be the promising lead as a PIM-1 kinase inhibitor.

B-208

SUBSTITUTED BENZYL TETRAHYDROPYRIDINES AS REVERSIBLE ACETYLCHOLINESTERASE ENZYME INHIBITORS AGAINST ALZHEIMER'S DISEASE

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Memory deficits found in the elderly population are characteristic of Alzheimer's disease (AD) and are partly due to cholinergic hypofunction; hyperactivity of acetylcholinesterase (AChE), disconnection between the cholinergic neurons and their early

formations which is linked to neurotoxicity. Inhibition of AChE evolves a strategy to restore lost cholinergic activity for the treatment of AD. In this regard, various third generation acetylcholinesterase (AChE) inhibitors have been designed, developed and tested. Many among them have bioavailability problems as well as lacking specificity to the enzyme in central nervous system (CNS), they also produce peripheral cholinergic side effects with this background, a novel series of N-substituted benzyl tetrahydropyridines (8a-e and 9a-e) have been designed. Molecular docking approach was used to design the molecules by considering their binding to the active site of amino acids of human AChE (PDB ID: 1B41) using the software MOE 2008.10. Further the designed derivatives were synthesized by suitable and convenient synthetic methods (scheme 1,2,3 and 4) and screened for their in-vitro inhibitory activity against rat brain, mice brain and human blood AChE. Among the tested compounds 8e showed better activity (IC50 = 20 ± 9.9 nM). Compared to the standard drug neostigmine (IC50 = 36 ± 8 nM) against human AChE.

B-209

SYNTHESIS AND DOCKING STUDIES OF PYRAZOLINE AS POTENTIAL EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) INHIBITORS

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A search for anticancer agents has prompted the design and synthesis of new chalcone, pyrazoline derivatives as potential epidermal growth factor receptor (EGFR) kinase inhibitors. Pyrazolines are one of the heterocyclic compounds with very important biological activities. In this view, it was proposed to synthesize some novel pyrazolines from chalcones. 3-Acetyl coumarin was treated with appropriate substituted benzaldehydes in the presence of ethanol as solvent and potassium hydroxide as basic medium to furnish some substituted chalcones. These chalcones were treated with thiosemicarbazide and condensation of chalcones of 3-acetyl coumarin yielding substituted 2-pyrazoline derivatives. The reaction progress for all synthesized compounds was checked by thin layer chromatography (TLC) and melting point techniques, the structure of synthesized compounds characterized using elemental analysis (CHN analysis) and spectroscopic techniques (FTIR).The Epidermal Growth Factor Receptor (known as EGFR) induces cell differentiation and proliferation upon activation through the binding of its ligands. Since EGFR is thought to be involved in the development of cancer, the identification of new target inhibitors is the most viable approach, which recently gained momentum as a potential anticancer therapy.These synthesized 2-pyrazoline derivatives' binding affinities were predicted by docking, which showed that chalcone and pyrazoline derivatives as EGFR-kinase inhibitors have good binding energies .

B-210

STEREOSELECTIVE SYNTHESIS OF SPIROPYROLIDINE DERIVATIVES AS ANTIPROLIFERATIVE AGENTS

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Spirocyclic compound plays important role in binding to target protein due to its 3D structu Several spiropyrrolidine derivatives are reported to be useful in targeting diseases like canc metabolic disorder, microbial infection and neurodegenerative diseases. Ninhydrin fu spiropyrrolidine derivatives especially are known to have cancer activity. In this paper, we h described a one-pot, multicomponent, [3+2] cycloaddition reaction to prepare spiropyrroli compounds in a highly stereoselective and regioselective method. The desired spiroc derivatives 5a-h were synthesised employing α,β-unsaturated carbonyl compoun dipolarophiles and azomethine ylides as dipoles which is produced in situ by reacting nin with sarcosine. The reaction conditions were optimized to achieve excellent regi stereoselectivity. The structure of all the eight spiro derivatives were confirmed from th 1H &13C NMR and ESI-MS spectra. The spiro-pyrrolidine compounds 5a-h were te their antineoplastic activity on sixty different cancer cell lines at National Cancer (NCI), Bethesda, USA. Among all, the spiropyrrolidine derivative 5e with 3-hydroxy a phenyl ring showed more than 50% growth inhibition against M14 melanoma c 10 μM concentration. These compounds further proved to be effective and anticancer molecules.

pyrimidine was able to form hydrogen bonding while rest of the part was involved in hydrophobic bonding. All the compounds were synthesized in good yield and confirmed by physical and spectral studies. In-vitro studies suggested that among all the synthesized compounds, 4-Phenyl-6-(phenylamino) pyrimidin-2-ol and 4-(4-hydroxy-3-methoxyphenyl)-6-(phenylamino) pyrimidin-2-ol when compared with standard drug Antipyrine while in-vivo data reflects compound above two compounds along with 4-(4-Nitrophenyl) amino}-6-phenylpyrimidine-2-ol and 4-(3-nitrophenyl)-6-(phenylamino) pyrimidin-2-ol were better, in controlling inflammation. The synthetic work Experimental studies reveals good result for compound having more than one electron releasing groups on aniline moiety of pyrimidine, also presence of electron withdrawing group favours for better anti-inflammatory activity on the target.

B-230

SYNTHESIS AND EVALUATION OF BIPHENYL-CURCUMIN ADDUCTS FOR THE TREATMENT OF POLY-CYSTIC OVARIAN SYNDROME

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Poly-cystic ovarian syndrome (PCOS) has affected one-third of the reproductive female population, leading to symptoms including Hirsutism, acne, insulin resistance, irregular menses and abnormal body weight. The main causality behind the disease is LH/FSH imbalance, eventually leading to androgen excess. Curcumin has proven its therapeutic utility against various diseases including PCOS. However, its bioavailability issues due to poor permeability across biological membrane has constantly challenged its use in the disease. Thus, we have designed and synthesized novel biphenyl adducts of curcumin, as potential anti-PCOS agents and evaluated there in vivo efficacy. A series of biphenyl-curcumin adducts was designed and docked against 17b-HSD5 enzyme. The compound with an excellent docking score was synthesized in the laboratory using conventional organic synthetic techniques. The structure of the synthesized compound was confirmed using elemental and spectral analytical techniques such as FT-IR, UV, 1H-NMR and 13C-NMR. Later, the compound was tested in vivo in Letrozole-induced PCOS in female wistar rats with curcumin as reference standard. The synthesized molecule demonstrated excellent anti-PCOS activity in vivo. The developed molecule may emerge as an excellent alternative for the treatment of polycystic ovarian syndrome.

B-231

GREEN SYNTHESIS OF 1,8- DIOXO-OCTAHYDROXANTHENE DERIVATIVES EXPLOITING WANG RESIN

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The green and sustainable chemistry has emerged as one of the key and priority research goals in academic as well as industrial R & D centers. However, in spite of devoting huge efforts in this area the development, establishing and implementation of eco-friendly process remained a challenging task. Indeed, the application of harmless, environmentally friendly and reusable reagents, catalysts and solvents in chemical reactions often require considerable research activities and efforts. Because of their importance and applications in different fields including organic and medicinal chemistry the 1,8-dioxo-octahydroxanthene and its derivatives have been found to be synthetic targets often in organic synthesis. Thus, over the years a range of reaction conditions commonly for the condensation of aldehyde with 1,3-cyclohexanedione or 5,5-dimethyl-1,3-cyclohexanedione leading to this class of O-heterocycles have been developed. In our effort, we have reported the synthesis of this class of compounds catalyzed by molecular iodine. of 1,8-dioxo-octahydroxanthenes against three cancer cell lines e.g. K562, Colo-205 and IMR32. On the other hand, similar and related nitrogen containing derivatives such as 1,8-dioxodecahydroacridines have been studied as potential inhibitors of sirtuins. All these reports prompted us to gain a convenient access to a library of molecules based on the 1,8-dioxo-octahydroxanthene scaffold for further pharmacological evaluation. We were mainly interested in an efficient green protocol for accessing these molecules.

B-232

DESIGN AND SYNTHESIS OF NOVEL VICINAL DIARYLTRIAZINE-BASED HETEROCYCLIC COMPOUNDS AS ANTI-ALZHEIMER AGENTS

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Alzheimer's disease (AD) is a chronic neurodegenerative disease that starts slowly and with time gets worsen. It was described by, and later named after, a German psychiatrist and pathologist Alois Alzheimer in 1906. The most common types of dementia, about 60-70% are caused due to Alzheimer's. Common symptoms include difficulty in remembering followed by problems with language, disorientation, mood swings, loss of motivation and behavioural issues in the later stages as the disease progress Alzheimer's disease (AD) is a chronic neurodegenerative disease that startsslowly and with time gets worsen. It was described by, and later named after, a German psychiatrist and pathologist Alois Alzheimer in 1906 . The most common types of dementia, about 60-70% are caused due to Alzheimer's. Common symptoms include difficulty in remembering followed by problems with language, disorientation, mood swings, loss of motivation and behavioural issues in the later stages as the disease progress Alzheimer's disease (AD) is a chronic neurodegenerative disease that starts slowly and with time gets worsen. It was described by, and later named after, a German psychiatrist and pathologist Alois Alzheimer in 1906. The most common types of dementia, about 60-70% are caused due to Alzheimer's. Common symptoms include difficulty in remembering followed by problems with language, disorientation, mood swings, loss of motivation and behavioural issues in the later stages as the diseaseprogressAlzheimer's disease (AD) is a chronic neurodegenerative disease that starts slowly and with time gets worsens. There is no such cure for AD. Currently, there are four primary therapeutic option approved by USFDA to treat the cognitive problems of AD wherein, three are acetylcholinesterase inhibitors (galantamine, rivastigmine and donepezil) while one N-Methyl-D-aspartate (NMDA) receptor blocker (memantine). As the disease is multifactorial, no medication has been shown to delay or halt the progression of the disease. An extensive literature survey on AChE inhibitors provided a sufficient platform to design a novel series of vicinal diaryltriazine derivatives. The designed novel vicinal diaryltriazine derivatives (16-33) have been successfully synthesized by using a convenient, mild and efficient protocol. The method offered the proposed final compounds with good yields and in considerably less time. All the synthesized compounds have been characterized by physical methods and their structures have been confirmed by IR, MASS and NMR spectroscopic methods. The synthesized compounds were evaluated for anti-Alzheimer activity. AChE and BuChE activity was carried out using Ellman's assay. Some of the compounds were found to be having potent activity.

B-233

SYNTHESIS, CHARACTERIZATION AND ANTI-BACTERIAL ACTIVITY OF NOVEL HETERO CYCLIC CHALCONES DERIVATIVES OF 2,4- THIAZOLIDINE DIONE

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Chalcone belonging to the flavonoid family are natural and synthetic products that have been reviewed for their wide range of biological activities as an-bacterial, anti-tumor, anti-inflammatory and anti-oxidant agents. They even show diverse spectrum of pharmacological properties and affinity for various biological targets. Recently appearance of drug-resistant pathogenic strains is most serious medical problem, so synthesis of novel TZD derivatives acts effectively against mostly all type of bacteria. Staphylococcus aureus is the one of the most successful modern pathogens. The same bacterium that lives as a skin and mucosal commensal can be transmitted in health care and community settings and causes severe infections. So there is a great challenge for a discovery of novel molecules against staphylococcus aureus and resistant strains. A series of heterocyclic chalcones analogues have been synthesized by knoevengel Condensation reaction between thiazolidine 2,4 dione and aromatic aldehydes followed by derivetization. The structures of synthesized chalcones were established by IR, H1NMR spectral data, elemental analysis and evaluated for anti-bacterial activity against gram positive and gram negative bacteria by cup plat method. Among the synthesized compounds 7a, 7b and 7c showed potent anti-bacterial activity against staphylococcus aureus. These results would provide promising access to future study about the development of novel anti-bacterial agents against bacterial infections. The potential molecules for future drug discovery, development, adjunct of antibiotics and medical devices coating.

C-64

[illegible] AND ANTI-DIABETIC POTENTIALS OF BERGAPTEN

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Aim: To Evaluate the In-vitro Hypolipidemic and Anti-diabetic potential of Bergapten. Materials and Methods: Method was used in the study. Bergapten a furanocoumarin was studied for [illegible] α amylase, α glucosidase and pancreatic lipase inhibitory activity. The inhibitory activity was evaluated for various different concentrations of bergapten. Diabetes mellitus is characterized by hyper-glycaemia increased levels of sugar in blood. A α amylase and α glucosidase inhibitors are used to achieve greater control over hyper-glycaemia in type 2 diabetes mellitus. Natural product has been a source of drugs to treat various chronic disorders due to reduced toxicity. The phytochemical bergapten exhibited significant α amylase, α glucosidase and pancreatic lipase inhibitory activities with an IC 50 value 8.54 µg/ml, 9.11 µg/ml and 7.22 µg/ml respectively. In the present study the pancreatic lipase, alpha amylase and alpha glucosidase inhibitors from natural sources was evaluated.

C-65

HERBAL RESPIRATORY MASK AS A PREVENTIVE MEASURE AGAINST COVID -19

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Respiratory masks remain as irreplaceable weapons against the spread of SARS-CoV-2, the virus that causes COVID-19. Studies hint that herbal masks might reduce the severity of infection against COVID-19. The present work was aimed to prepare and amalgamate the benefits of herbal masks in prevention of COVID-19. In the current research, a mixture of selected herbals namely, Neem, Turmeric, Licorice, Ajwain, Tulsi and Camphor which act synergistically as anti-microbial agents were selected and packed in a pouch. The pouches were placed in the pockets provided in the stitched cloth masks. The herbs contained in the masks were evaluated for their anti-microbial activity after Soxhlet extraction with alcohol against Staphylococcus pneumonia NCIM 5656, Streptococcus pyogenes NCIM 2608 and Aspergillus niger NCIM 563 at a concentration of 50, 100, 250 and 500 µg/ml for each microorganism, using standard agar disc diffusion technique. Zone of inhibition was compared with Gentamicin as standard disc for antibacterial and Amphotericin B for antifungal activity. Masks showed remarkable anti-microbial property against the tested organisms. Preliminary phytochemical analyses for the selected plants revealed the presence of various phytoconstituents that may be responsible for the significant anti-microbial property of the developed mask. To conclude, the masks were prepared with an aim to keep its design as simple as possible such that any small-scale manufacturers can prepare for commercial purpose and effective against respiratory infections caused by microbes. The herbal mask with their pleasant odour and anti-microbial activity might be helpful to boost customer compliance and protection against the existing pandemic.

C-66

REVIEW ON ANTI-CANCER HERBAL PLANTS AND THEIR PHYTOCHEMICALS.

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Cancer is a terrifying illness that ranks among the most pressing health concerns facing humanity and necessitates a proactive approach to treatment. A promising area for cancer research is plants, which serve as reservoirs for novel chemical entities. Chemotherapy has manifested some unpleasant side effects, despite being successful. Plants and plant-derived products, however, are changing the area as an easy, safe, environmentally friendly, inexpensive, quick, and less toxic alternative to conventional treatment methods. The actions of phytochemicals are focused on tumor cells and are selective in nature. A number of signaling pathways are involved in the complex phenomena known as carcinogenesis. Due to their therapeutic effects on the target event in several ways, phytochemicals are regarded as promising candidates for the development of anticancer drugs.Research is being done to identify possible candidates from these phytochemicals that can stop or reduce the proliferation of cancer cells without having any negative side effects. Numerous phytochemicals and the analogues they were generated from have been identified as possible cancer treatment options. Through this concise overview, an effort has been made to highlight the most recent advancements and significant achievements in Phytomolecules

based cancer therapeutics that target nuclear and cellular components.

C-67

IMPACT OF PESTICIDE AND FUNGICIDE ON SOIL MICRO-FLORA DEGRADATION AND THEIR RESIDUAL LEVELS ASSESSMENT IN PLANT AND SOIL

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The prolonged intensive and indiscriminate use of agrochemicals adversely affects the soil biodiversity, agricultural sustainability and food safety bringing in long-term harmful effects human and animal health. Most of the agrochemicals negatively affect soil microbial functions and biochemical processes. Here, we estimated the impact of fungicide and pesticide on the soil microflora in relation to soil health, fertility and their persistence level in plant and fruits. The response of soil microflora against Mancozeb (Fungicide), Chlorpyrifos (Pesticide) and Neem (Biopesticide) as an alternative were determined at field. We determined the linearity curve of Mancozeb (Fungicide), Chlorpyrifos (Pesticide) and Neem (Biopesticide) by established procedure. The lowest dosages corresponded to the maximum predicted environmental concentration (PEC) of pesticides applied in field conditions. Mancozeb and Chlorpyrifos (TEST gr.) was sprayed as 1gm/1000 ml and 1ml/1000 ml of water concentration respectively while Neem 1gm/1000ml (STD gr.) and without pesticide and fungicide (CTRL gr.) at 1150 feet2 of soil land were planned. The soil land was ploughed and planted with soil varities viz. forest sourced (FS), garden sourced (GS) and land sourced (LS) soil. Plant parts especially leaves, and fruits (Tomato, Capsicum and Rhizome (Raddish) were processed for homogenization and subsequent juice extracts for residual levels assessment of pesticide and fungicide presence. Since the agricultural pesticides that are exhaustively applied to land surface percolates down the groundwater and contaminate it. The recalcitrant nature of pesticide is harmful to the environment as it hampers the fertility and productivity of the soil.

C-68

SYNTHESIS, CHARACTERIZATION AND APPLICATION OF CATIONIC-MODIFIED BANANA STARCH AS A FLOCCULATING AGENT

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The study aimed to isolate banana starch (BS), synthesize Cationic banana starch (CBS), characterization, and its application as a flocculating agent. The sodium hydroxide (lye) solution was employed to isolate starch from unripe banana fruit. Starch was subjected esterification process for the synthesis of cationic starch by treating cationic moiety N-(3-chloro-2-hydroxypropyl) trimethyl ammonium chloride (CHPTAC) onto the backbone of banana starch, a branched polysaccharide. FTIR, SEM, TGA, DTG, XRD, and Elemental analysis were applied to characterize BS and CBS. The flocculation characteristics of these synthesized CBS were compared with flocculants. Synthesized CBS was slightly free-flowing and amorphous powder. The characterization exhibited that cationic moiety had been inserted into the BS backbone. Nitrogen is not present in significant concentrations in starch. The FTIR spectra and elemental analysis proved the cationization of BS. Cationizing and grafting BS with cationic monomer CHPTAC completely altered its granular structure. A study on flocculation characteristics reveals that CBS, having a longer CHPTAC chain, performs better than those with shorter chains. The optimized CBS was found to be comparable with some commercially available flocculants. Hence it can be concluded that incorporating a cationic moiety on the backbone of starch can be used as an effective flocculating agent.

C-69

PREPARATION AND PHYSIOCHEMICAL CHARACTERIZATION OF INDIAN TRADITIONAL MEDICINE: PRAVAL BHASMA BY USING MODERN ANALYTICAL TECHNIQUES.

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Praval is the calcareous skeleton of the marine organism called Anthezoa polypus and belongs to phylum Coelenterate. It is a natural source of rich calcium. In Indian Ayurvedic medicine it is widely used in Amlapitta, Netra Roga and Hridaya Roga and Ca deficiency. To ensure efficacy and safety parameters of prepared bhasma, the quality control tests of Rasa shastra like Varitara Rekhapurnatvam, Nishchandrata were performed. But these traditional tests do not ensure efficacy & safety of Bhasmas. Therefore modern techniques were used to study Chemical investigations of some commercial samples of Praval bhasma. The Praval bhasma was prepared strictly as per procedure mentioned in Ayurvedic formulary of India. To evaluate

C-75

[illegible]

C-76

[illegible] DENSITOMETRY METHOD FOR IDENTIFICATION OF CARBOHYDRATE AND PHENOLIC COMPOUNDS IN SELECTED MEDICINAL PLANTS

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[illegible] thin layer chromatography (HPTLC) is an analytical approach employed for [illegible] of group of compounds from hydro-alcoholic extract of numerous parts of plants, [illegible] bark, Cissus rependa root and Celosia argentea root. Simultaneous estimation [illegible] and phenolic compounds in mother extract and their fractions was [illegible] accomplished using HPTLC analysis method. The aim of research work is to [illegible] justify a simple and speedy HPTLC technique for identification and quantification [illegible] phytochemicals from hydroalcoholic extract of Cordia macleodii, Cissus rependa and [illegible] argentea. Research work was carried out by using Merck Al plate's silica gel 60 F254. [illegible] phase used for carbohydrate and phenolic compounds were n-butanol: 2-propanol: [illegible] acid (30:60:10) and Ethyl acetate: Methyl ethyl ketone: Formic acid: Water [illegible] respectively. Densitometric detection of carbohydrate and phenolic compounds were [illegible] at visible light and 366 nm respectively. A significant Rf value 0.17, 0.40 was [illegible] for quantification of carbohydrates and percent content was found to be 0.14% and [illegible] in Cordia macleodii and Celosia argentea respectively. Rf value 0.76, 0.75 was selected [illegible] of gallic acid with 1.38%, 0.86% in Cordia macleodii extract and its fraction. [illegible] Rf value 0.79 was selected for estimation of gallic acid with 2.83% in Celosia [illegible] fraction. In conclusion, the report confirm the presence of fructose, glucose and gallic [illegible] Cordia macleodii and Celosia argentea extract but no fluorescence band was detected in [illegible] rependa. Further HPTLC method will helpful for standardization of herbal drugs.

C-77

[illegible]NATION OF ANTI-ACNE POTENTIAL OF CYNODON DACTYLON, BOMBAX CEIBA, CARUM CARVI AND BLUMEA ERIANTHA FORMULATION

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[illegible] a common skin disease, characterized by areas of skin with seborrhea, comedones, [illegible], pimples and possibly scarring. The term acne comes from a mutation of the [illegible] ακμή (akmē), literally "point, edge". The causative agent of acne is [illegible]bacterium acne. Acne develops as a result of blockages in the follicles [illegible] formation of a plug of keratin and sebum. Major problem is the development [illegible] resistance and allergic reaction. The main objective of this study screen the anti-[illegible] activity of herbal formulation containing extracts of Cynodon dactylon, Bombax ceiba,

[illegible]

C-78

IN VITRO PANCREATIC LIPASE, ALPHA AMYLASE AND ALPHA GLUCOSIDASE INHIBITORY ACTIVITIES OF THE PHYTOCHEMICAL BARBALOIN

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Background: Pancreatic lipase is an enzyme that hydrolyzes the lipids obtained from the diet which acts as an important target to treat obesity. The natural medicines that can inhibit pancreatic lipase enzyme and thus decrease absorption of dietary fat in the body gained much attention for the treatment and prevention of obesity. Diabetes mellitus is a metabolic disorder marked by an elevated level of glucose that circulates in the blood plasma. Alpha amylase and alpha glucosidase inhibitors are used to attain control over hyperglycemia in type 2 diabetes mellitus. In the present study the phytochemical, barbaloin was investigated for in-vitro pancreatic lipase, alpha (α)-amylase and alpha (α)-glucosidase inhibitory activities. Methods: The present study was designed to screen the novel pancreatic lipase, alpha amylase and alpha glucosidase inhibitors using a phytochemical, barbaloin, at different concentrations in order to minimize the toxicity and side effects of the inhibitors which are used at present to treat the disorders like obesity and hyperglycemia. Orlistat is used as standard for pancreatic lipase inhibitory activity and acarbose is used as standard for α-amylase and α-glucosidase inhibitory activities. Results: The phytochemical, barbaloin exhibited significant pancreatic lipase, α-amylase and α-glucosidase inhibitory activities with an IC50 value 5.52 µg/ml, 8.22µg/ml and 5.81µg/ml respectively and well compared with standard orlistat for pancreatic lipase and acarbose for alpha (α)-amylase and alpha (α)-glucosidase inhibitory activities respectively. Conclusion: From the above results, it is concluded that the phytochemical, barbaloin can be used as an adjuvant for the management of obesity and complications associated with diabetes mellitus after prior in-vivo studies.

C-79

EVALUATION OF THE NEUROPROTECTIVE ACTION OF AZADIRACHTA INDICA LEAVES EXTRACT IN STREPTOZOTOCIN INDUCED DIABETIC RODENT MODEL

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Among the most common and painful consequences of diabetes mellitus, diabetic peripheral neuropathy (DPN) is one of the most common. For DPN management, a variety of techniques have been used, ranging from traditional medicines to alternative approaches. Natural compounds are also in the focus of research to explore the possible treatment by replacing or by combining with the existing therapies. Different neurological changes in diabetic neuropathy and effect of the Azadirachta indica (neem) extract were assessed with nerve conduction velocity; biochemical and histological analysis in Streptozotocin induced diabetic mellitus. The therapeutic effect of the extract was evaluated with doses 100, 200 and 500mg/kg body weight for 4 weeks after induction of diabetes. The protective effect was evaluated by treating the animals with hydroalcoholic extract of neem leaves in 500mg/kg dose prior to the induction of diabetes and post-treatment with the standard drug Metformin (500mg/kg). Both resulted in significant reduction in blood glucose, additionally 500mg/kg body weight dose revealed the [illegible] promising for future

symptoms or as a supplement to healthy well-being. Amla mouth spray can come at one's fingertip for all preventive and supportive oral care. Due to its antioxidant property it reduces the chances of gum diseases, oral infections and cavities. Amla Extract is a rich source of Vitamin C and numerous studies has reported role of Amla in Immunity Stimulation, Digestive issues, Skin and Hair Related Problems. Such multi faceted drug when incorporated into a user-friendly mouth spray can make the formulation a one stop solution to Antioxidants and Vitamin C intake for common people. Amla's High Vitamin C content and Tannin Components makes it a single source for Improving Immune Function and Decreasing Cellular Damage and Inflammation protecting individual from opportunistic infections and ageing. Formulating amla into Mouth Spray will not only allow to reap all such health benefits but will also address the problems with amla's absorption into the human body.

C-91

MAGICAL BENEFITS OF TURMERIC AS A ANTISEPTIC PEEL OFF MASK

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Bacterial acne, pimples, dry rough skin is the problem of skin facing by a wide range of population now a days. This paper aims to formulate and evaluate the herbal peel off mask for bright, glowing and elastic skin with antiseptic action. Turmeric (Curcuma longa), aloe vera is the key ingredient used in peel off with other excipients like sandalwood oil, multani soil. All this ingredients were found to be most effective herbal ingredients for acne, bacterial growth modulator for pimples with least side effect as compared to the synthetic peel off present in market. Curcumin found in turmeric have flavonoid which have uncountable skin benefit rejuvenate skins and make it more elastic. This peel formed by using all water phase formulation. The parameters evaluated are homogeneity, spreadiability, irritancy test, physical test, and various microbiological test for antiseptic nature. This review helps to take forward the development of skin care product for therapeutic as well as beauty purposes.

C-92

QUALITATIVE AND QUANTITATIVE PHYTOCHEMICAL ANALYSIS OF LEAVES EXTRACT OF PLANT PLUMBAGO ZYLANICA

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Traditional system of medicine consists of large number of plants with various medicinal and pharmacological uses and hence represents a number of new bioactive molecules. Plumbago zeylanica Linn. is one of the well-known herbal plant throughout India and Asia as a remedy for skin diseases, infections, and intestinal worms. The plant has been found vital in different clinical conditions, especially inflammation, leprosy, scabies, ringworm, dermatitis, ulcers, hemorrhoids, and hookworm. Plumbago zeylanica is commonly known as white chitraka, belongs to family plumbaginaceae. Hence Its research proved that It is a great medicinal plants around the world for treatment of various diseases. So the present work aims the presence of various phytochemicals in the leaves extract of methanol and petroleum ether. The quantitative analysis was evaluated for total phenol, flavonoid, alkaloid, and saponin content in methanolic extracts of Plumbago zeylanica. The standard Gallic acid was used for estimation of total phenol content. Methanolic extract of Plumbago zeylanica phenol content showed concentration 20.13±0.230. Rutin as standard was used for estimation of total flavonoid content in different extracts of plant. The methanolic extract of Plumbago zeylanica showed highest flavanoidal content with concentration 57.33± 2.516 mg/RE/g. The saponin tannin content was determined with standard diosgenin and found 3.0±0.333. The total alkaloid content was estimated with standard atropine compound and showed highest alkaloidal content with concentration 56.66±2.081 and on such basis In future, herbal formulation can be prepare form leaves extract of P.zylanica.

C-93

EVALUATION OF POLYHERBAL SOAPS

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Most of the commercial soaps contain chemicals that can be harmful to the skin. Using a natural herbal soap can be a good alternative. They provide relaxation, healing from stress also. In this research work the basic objective of the present study involve the evaluation of formulated polyherbal soap using sample 1, sample 2 and sample 3 was evaluated for various physicochemical features. This study intended to evaluate the physicochemical parameters such as pH, foam height, foam capacity and total alkali content, TMF, volatile content, chloride content, and matter insoluble in water of different soap samples. pH of sample 1, sample 2 and sample 3 was found to be 10.78, 10.21, and 10.68 respectively. The alkali content of the soaps was found to be 2.42% 2.36%, and 2.57% respectively. The total fat matter of sample 1 was found to be 82% and that of sample 2 is 85%. Sample 3 was found to have the highest fat content of 72%. The percentage amount of total matter insoluble in water for sample 3 was found to be highest i.e. 80%. While for sample 1 it is 50% and sample 2 showing the least value of 15%. Sample 1 has the highest loss of volatile matter i.e. 11.25% and also foam capacity batch sample 1 was found to have the highest value of 15.03 min.

C-94

HERBS USED IN SKIN DISORDER

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Skin diseases are a common health problem that affects everyone, from newborns to the elderly. These skin diseases aren't just simple; they cause harm to the skin in a variety of ways, and in many cases, these skin diseases are symptoms of more complicated underlying health issues, such as cancer, herpes, and cellulitis. As a result, there is a need to learn more about skin illnesses and their treatment with herbs, as herbs have more benefits than other pharmaceuticals and treatments. Plants are frequently utilised to treat a variety of ailments. These plants have been used from the beginning of time. They are inexpensive and secure. They are also valuable basic materials for the development of novel synthetic agents. This review looks at several plants that can be used to cure certain disorders.

C-95

STABILITY STUDIES OF SOME NEW POLYHERBAL TABLET FORMULATIONS FOR THE TREATMENT OF DIABETIS AND HYPERLIPIDEMIA

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In the present work, five different polyherbal tablets (F1 to F5) were formulated from three different standardized extracts, Momordica charantia (3% bitter principle), Cinnamomum cassia (10% total phenols) and Stevia rebaudiana by wet granulation using microcrystalline cellulose (MCC PH101) as diluents, Povidone K25 as a binder, magnesium stearate and talc as glidants. Methyl paraben (0.1%,0.2%) and propyl paraben (0.1%,0.2%) were used to prepare different composition of tablets (F2 to F5). Formulated tablets were evaluated for precompression parameters like angle of repose, bulk density, tapped density and compressibility index and post compression parameters like weight variation test, friability test, hardness test and stability studies. All the formulations (F1 to F5) were found to exhibit good precompression as well as postcompression parameters and were found to be within limits. Stability studies revealed that all the formulations F1 to F5 were stable upto 90 days. It was observed that the hardness of all the tablets (F1 to F5) increased from the 30 days to 90 days while their friability remained constant. Propyl paraben containing formulations F4 and F5 were found to be hard, less friable showing better dissolution than methyl paraben containing tablets (F2&F3). A concentration dependent effect of preservatives was observed among the tablets. The details pertaining to this work shall be discussed during the presentation.

C-96

COMPARATIVE PHYTOCHEMICAL EVALUATION OF NATURALLY GROWING AND COMMERCIALLY AVAILABLE BRAHMI (BACOPA MONNIERI)

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Purpose: Since time immemorial human beings are using natural products particularly of herbal origin for the treatment of variety of ailments. In last two decades use of herbs mentioned in Ayurveda or other traditional literature has been increased, while this increased demand has led to supply of substandard raw material. Hence, the purpose of present study is to standardize and compare physico-chemical parameter, morphological and microscopic characters of naturally growing and commercially available Brahmi. Methods: Extraction of crude material of different particle sizes (Mesh No. 10, 22, 44, 85) were done using cold maceration method with 200 ml of hydro-ethanol (70:30) for 7 days. Result:- Macroscopic examination of naturally growing and commercially available Brahmi provided detailed information regarding morphological and sensory characteristics such as size, shape, colour, taste, odour, etc. and

decreased in PCOS rats that were treated with β-caryophyllene ($p < 0.001$) ... antioxidant capacity ($p < 0.05$), glutathione peroxidase, and superoxide dismutase ... significantly increased ($p < 0.001$). Conclusion: Treatment With β-caryophyllene ... follicular quality by increasing antioxidant activities and scavenging oxidant levels in ... ovaries.

D-44

CHENOPODIUM ALBUM AMELIORATES ACETIC ACID INDUCED ULCERATIVE COLITIS IN RATS.

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...erative colitis (UC) is a chronic inflammatory disorder characterized by oxidative stress, ...ease of pro-inflammatory cytokines and colonic inflammation. Hydroalcoholic extract of ...enopodium album (HYCA) is considered to possess potent antioxidant and anti-inflammatory ...rties. The aim is to evaluate the possible mechanism of action of HYCA against acetic acid ...uced ulcerative colitis in rats. UC was induced in Wistar rats by intrarectal administration of ...(3%). HYCA was administered (100, 200, 400 mg/kg, p.o.) for 7 days after colitis was ...uced on the 4th day. Clinical, morphological, and biochemical changes were assessed in ...lon. Intrarectal administration of AA caused a significant reduction in percentage body ...ight, increased stool consistency score, macroscopic score, colon weight, weight to length ...io, ulcer area, ulcer index, etc. It increased MDA, MPO levels, and depleted GSH levels. It also ...sulted in histological changes in colon as mucosal damage associated with infiltration of ...flammatory cells in mucosa and submucosa. HYCA 400 mg/kg significantly restores loss of ...rcent body weight, reduced stool consistency score, ameliorates macroscopic changes, ...tological changes, colon weight to length ratio, ulcer index, reduced MPO, MDA level and ...stores GSH level when compared to Acetic acid induction control group. Results of the ...esent study indicate the anti-inflammatory and immunomodulatory potential of HYCA to heal ...tic acid-induced colitis in rats.

D-45

PHARMACOLOGICAL STUDIES ON COLLAGEN INDUCED ARTHRITIS IN SWISS ALBINO MICE

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...A is a chronic disease affecting over 1.3 million Americans and as much as 1% of the ...rldwide population. The specific cause of RA is not known, and as a result there is no known ...re for the disease. Aim and Objective: To develop &evaluate the effect the Mitocurcumin ...mg/kg twice a week) in Collagen induced arthritis model in mice. Material-Methods: Male ...wiss albino mice (20-25g),Freund's adjuvant (complete (FCA) and incomplete (IFA)), Bovine ...pe II collagen, Mitocurcumin (test sample), DMSO.Induction of Collagen Induced Arthritis ...withFCA & IFA was done ondays 0 (0.1 ml CFA emulsion at a site 0.5 cm away from the tail ...base) and 7 (booster dose of 0.1 ml of collagen and IFA emulsion at a site 1.5 cm away from the ...previous injection site i.e., from tail base.), in mice of groups 2 and 4 (Disease control and Drug ...treatment respectively) by intradermal injection. Mice were given1 mg/ml Mitocurcumin in 1% ...DMSO to groups 3 & 4 twice a week from the day of onset of initial symptoms of arthritis for 3 ...weeks.Assessment of disease development was done by measuring clinical parameters, ...biochemical parameters& cytokines using statistical analysis. Results: Global inflammatory ...response was indicated by increased IL-6, nitrite levels & lipidperoxidationand significant fall in ...SOD, CAT activities and GSH content in joint tissue of disease control mice.Significant reversal ...in biochemical and histopathological changes because of CFA immunization on intraperitoneal ...Mitocurcumin were observed; however, it is necessary to substantiate this effect using ...appropriately designed clinical studies.

D-46

ANTIOXIDANT ACTIVITY OF CAULIFLOWER (BRASSICA OLERACEA L.)

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...Recently, a number of studies on the health benefits associated with fruits, vegetables, herbs ...nd spices demonstrated that they possess potent antioxidant, anti-inflammatory, anti-...nutagenic, and anti-carcinogenic activity. The potential antioxidant activity of water and ...thanol extracts of cauliflower (Brassica oleracea L.) were investigated to evaluate their ...otential value as a natural ingredient for foods or cosmetic application. In this study ...ntioxidant activity was measured by 2,2'-azino-bis(3- ethylbenzthiazoline-6-sulfonic acid) (ABTS) radical scavenging, 1,1-diphenyl-2-picryl-hydrazyl free radical (DPPH·) scavenging, N,N-dimethyl-p-phenylenediamine dihydrochloride (DMPD) radical scavenging, superoxide anion ($O2^{\cdot -}$) radical scavenging, total antioxidant activity, reducing activity using $Fe+3-Fe+2$ transformation and CUPRAC assays, hydrogen peroxide ($H2O2$) scavenging, and ferrous metal chelating activity assays. The water extract of cauliflower (WEC) and ethanol extract of cauliflower (EEC), as antioxidants, neutralized the activity of radicals and inhibited the peroxidation reactions of linoleic acid emulsion. Total antioxidant activity was measured according to the ferric thiocyanate method. α-Tocopherol and trolox, a water soluble analogue of tocopherol, were used as the reference antioxidant compounds. WEC and EEC showed 88.6% and 80.1% inhibition of lipid peroxidation of linoleic acid emulsion, respectively, at the concentration of 30 μg ml−1. On the other hand, at the same concentration, the standard antioxidants α-tocopherol and trolox exhibited 68.1.4% and 81.3% inhibition of peroxidation of linoleic acid emulsion, respectively. In addition, WEC and EEC had effective DPPH·, ABTS·+, DMPD·+, and superoxide anion radical scavenging, hydrogen peroxide scavenging, total reducing power, and metal chelating of ferrous ion activity. Also, those various antioxidant activities were compared to α-tocopherol and trolox as references antioxidants.

D-47

EVALUATION OF FLAVONOID RICH EXTRACT OF TRIDAX PROCUMBENS LINN FOR ACUTE TOXICITY PROFILE AND ANTIUROLITHIATIC ACTIVITY

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Now-a-days interest of human in the use of traditional medicines has growing. To improve the acceptance, the variety of dosage forms were formulated and developed. In the present work Tridax procumbens has been developed in the form of liquid dosage. The developed formulation evaluated for different parameters and antilithiatic activity. Tridax procumbens (leaves and stem) was extracted using soxhlet apparatus. The extract was further used to develop formulation of the syrup. The physicochemical properties of the syrup were studied. The syrup was evaluated for antiurolithiatic action. The accelerated stability of syrup was evaluated during the period 6 months.The product was light brown semi-transparent syrup with sweet taste and characteristic odor. The pH and density were found to be 5.39 ± 0.01, 1.061 ± 0.13 g/ml respectively for selected formulation (F2). There was no significant change observed in the evaluation parameters during the accelerated stability studies. The overall results concluded that the formulated syrup of Tridax showed to good antiurolithic property. This herbal syrup successfully reduced kidney stones by a non-toxic and convenient way.

D-48

EVALUATION OF CHEMOPREVENTIVE EFFECT OF AQUEOUS EXTRACT OF ABRUS PRECATORIOUS AGAINST DMBA INDUCED BREAST CANCER IN RATS

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Aim & Objectives: This study was aimed at evaluating the chemopreventive potential of aqueous leaf extract of Abrus Precatorious (AP) on DMBA-induced breast cancer in rats. Materials and Methods: 42 female Sprague Dawley rats were divided in to seven groups and DMBA was administered through oropharyngeal route to the rats to induce breast cancer. Hot extraction protocol was employed in the preparation of aqueous extract of AP leaves. The histopathology of tumors, their size, multiplicity and morphological changes in mammary gland tumors were assessed to check its effect at cellular level. The effect of AP extract on antioxidant status was evaluated by measuring oxidative stress markers like SOD, Catalase, GSH and MDA. Pharmacokinetic effect of AP on Doxorubicin was assessed by determining its plasma concentration using HPLC. Results: There was a significant ($P < 0.001$) weight difference between the control and treatment groups. We found difference in the median number of tumors and their volume between the control and treatment groups. Compared to DMBA treated group, in extract treated group less hybernoma, necrosis and inflammation was observed in histopthology. There was a significant ($P < 0.001$) difference in antioxidative activity of AP, since a restoration of the GSH pool and decreased amount of hydroperoxide were observed. We found increase in plasma concentration of doxorubicin in combination o Abrus Precatorious extract in rat plasma. Conclusion: This study has shown that the aqueou leaf extract of Abrus Precatorious has chemopreventive effect against DMBA-induced brea cancer in rats.

...is a nerve growth and repair. However, later in life, the nerve cells are destroyed by ... form, leading to the loss of thought and memory in Alzheimer's disease. A new ... test has been developed that can measure the amount of amyloid beta oligomers in ... which could be used to predict future diagnosis of Alzheimer's disease. Many ... receive an Alzheimer's diagnosis only after exhibiting well-known symptoms of ... such as memory loss. At that point, the best treatments options are slow further ... of symptoms. However, research shows that the seeds of Alzheimer's disease can ... years earlier, long before cognitive deficits become apparent, making diagnosis ... These seeds are amyloid beta proteins that misfold and clump together to form small ... called oligomers. That "toxic" oligomers of amyloid beta are thought to develop into ... Disease. That Oligomer form a structure known as an alpha sheet (α-sheet). ... Development and testing of a soluble oligomer binding assay for detection of ... toxic oligomers." Soluble Oligomer Binding Assay(SOBA) that can measure ... amyloid beta (Aβ) peptide oligomers in blood and detect Alzheimer's disease at all ... including in presymptomatic cases. SOBA uses a synthetic α-sheet that can bind to ... oligomers in samples of either cerebrospinal fluid or blood. SOBA had detected ... oligomers before symptoms emerged. It can detect early Alzheimer's disease ... to the development of clinical symptoms.

D-55

YAMANAKA- A REVERSE EPIGENETIC AGING FACTOR

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... one of the major concern for the youth. At the biological level, ageing results from the ... and cellular damage over time which leads to a gradual decrease in physical and ... capacity, a growing risk of disease and ultimately death. It is a genetically determined ... Causes of aging include but are not limited to oxidative stress, glycation, telomere ... side reactions, mutations, aggregation of proteins, DNA damage. .The purpose of ... medicine is to slow, stop, or reverse the aging process . Anti-aging medicine is ... as a growing industry. The causes for aging are initiated by one of the enzyme sirtuins ... are class III nicotinamide adenine dinucleotide(NAD) -dependent histone ... (HDACs) that regulate a number of physiological processes, play important roles ... regulation of metabolism, aging, oncogenesis and cancer progression. Sirtuins involves in ... DNA repairing, chromatin regulation, mitochondrial function, cell cycle control. ... regulates NF-KB, FOXO3, p53, p73, E2F1, Ku70 which decreases apoptosis, increases ... repair, increases oxidative stress resistance, decreases inflammatory response which ... to longevity of cell survival. Foods that contain sirtuins activators include: blackcurrants, ... cocoa, dates, green tea, kale, miso, onions, olives and extra-virgin olive oil, parsley, tofu ... soy products, turmeric and walnuts. sirtuins are activated by NAMN, NMN, NMNH. ... studies said that Yamanaka factors reverse the cell age. It takes around 50 days of ... to these molecules for normal cells to be reprogrammed into induced pluripotent ... cells (iPSCs) which makes rejuvenation of normal cell without losing their previous ... ality.

D-56

ASSESSMENT OF ANTI DIABETIC POTENTIAL OF COMBRETUM ROXBURGHII BY INVITRO

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... the figure of persons bear from diabetes is trust to be standup by degrees and the ... antidiabetic treatments are often appear to have adverse side effects. Traditional ... plant use has reveal for the growth of low-cost antidiabetic agents with hardly any ... effects. The focus of this work was to explore the anti diabetic pursuit of methanolic leaf ... produced from Combretum roxburghii by invitro. The results of the plant extracts on ... discharge in Hep G2 cells were explored using cell culture policy. Alpha amylase, alpha ... inhibition assays were also carried out. Both MECR and EACR extracts ... elevated glucose uptake in Hep G2 cell lines, with potency remarkably elevated ... positive control, berberine. The MECR extract showed higher levels of inhibition on α- ... and α-glucosidase than EACR. The pursuit were not remarkably non-identical from ... The MECR and EACR extracts of C.roxburghii authorised, for that reason , carry ... working and corresponding non- toxic hypoglycaemic chemicals, which may be ... replacement in the therapy of diabetes mellitus.

D-57

ANTIOXIDANT ACTIVITY OF CAULIFLOWER (BRASSICA OLERACEA L.)

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Recently, a number of studies on the health benefits associated with fruits, vegetables, herbs and spices demonstrated that they possess potent antioxidant, anti-inflammatory, anti-mutagenic, and anti-carcinogenic activity. The potential antioxidant activity of water and ethanol extracts of cauliflower (Brassica oleracea L.) were investigated to evaluate their potential value as a natural ingredient for foods or cosmetic application. In this study antioxidant activity was measured by 2,2' azino-bis(3- ethylbenzthiazoline-6-sulfonic acid (ABTS) radical scavenging, 1,1-diphenyl-2-picryl-hydrazyl free radical (DPPH·) scavenging, N,N-dimethyl-p-phenylenediamine dihydrochloride (DMPD) radical scavenging, superoxide anion ($O2^{-}$) radical scavenging, total antioxidant activity, reducing activity using Fe^{+3}-Fe^{+2} transformation and CUPRAC assays, hydrogen peroxide (H_2O_2) scavenging, and ferrous metal chelating activity assays. The water extract of cauliflower (WEC) and ethanol extract of cauliflower (EEC), as antioxidants, neutralized the activity of radicals and inhibited the peroxidation reactions of linoleic acid emulsion. Total antioxidant activity was measured according to the ferric thiocyanate method. α-Tocopherol and trolox, a water-soluble analogue of tocopherol, were used as the reference antioxidant compounds. WEC and EEC showed 88.6% and 80.1% inhibition of lipid peroxidation of linoleic acid emulsion, respectively, at the concentration of 30 μg ml–1. On the other hand, at the same concentration, the standard antioxidants α-tocopherol and trolox exhibited 88.1.4% and 81.3% inhibition of peroxidation of linoleic acid emulsion, respectively. In addition, WEC and EEC had effective DPPH·, $ABTS^{+}$, $DMPD^{+}$, and superoxide anion radical scavenging, hydrogen peroxide scavenging, total reducing power, and metal chelating of ferrous ion activity. Also, those various antioxidant activities were compared to α-tocopherol and trolox as references antioxidants.

D-58

ASSESSMENT OF ANTI-DIABETIC ACTIVITY OF ETHANOLIC EXTRACT OF ROOTS OF SOLANUM NIGRUM IN STREPTOZOTOCIN INDUCED DIABETES IN RATS

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Hyperglycemia and decreased metabolic processes are two symptoms of the metabolic disease diabetes. Numerous allopathic medications, including Gleptines, Metformin, and Glibenclamide are available to treat diabetes, but their long-term use is linked with adverse effects and the development of tolerance, necessitating the use of numerous medications. Ayurveda, our ancient medical system, states that there were numerous medicinal plants used in antiquity that could treat diabetes and had benefits that were comparable to those of allopathic medications while being completely side effect free. All of these facts encouraged us to start the current investigation into Solanum nigrum (EERSN) antidiabetic potential in an animal model of diabetes caused by streptozotocin. Streptozotocin at a dose of 50 mg/kg (body weight) was used to successfully induce diabetes in this investigation. Animals that had glucose (blood) levels higher than 200 mg/dl after 48 hours were appended in the study. The elevated glucose levels were then significantly lowered and other altered parameters of cholesterol, LDL, HDL, and triglycerides were reversed after 21 days of treatment with ethanolic extract of roots of Solanum nigrum in these diabetic rats. The results of the current investigation suggest that Solanum nigrum roots (400 mg/kg) are effective in the treatment of diabetes mellitus.

D-59

EVALUATION OF CHEMOPREVENTIVE EFFECT OF AQUEOUS EXTRACT OF ABRUS PRECATORIOUS AGAINST DMBA INDUCED BREAST CANCER IN RATS

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Aim & Objectives: This study was aimed at evaluating the chemopreventive potential of aqueous leaf extract of Abrus Precatorious (AP) on DMBA-induced-breast cancer in rats. Materials and Methods: 42 female Sprague Dawley rats were divided in to seven groups and DMBA was administered through oropharyngeal route to the rats to induce breast cancer. Hot extraction protocol was employed in the preparation of aqueous extract of AP leaves. The histopathology of tumors, their size, multiplicity and morphological changes in mammary gland tumors were assessed to check its effect at cellular level. The effect of AP extract on antioxidant status was evaluated by measuring oxidative stress markers like SOD, Catalase,

D-97

AMELIORATIVE ROLE OF PRAVASTATIN ON METHIONINE-INDUCED HYPERHOMOCYSTEINEMIA AND HAEMATOLOGICAL CHANGES IN ALBINO RATS

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The study was designed to investigate the ameliorative effect of pravastatin on methionine-induced hyperhomocysteinaemia and haematological changes in albino rats. Methionine (orally) administration to pathogenic control rats (i.e. group II) for 30 days significantly ($P<0.01$) increased the levels of homocysteine , total cholesterol (TC), low density lipoprotein (LDL-C), very low density lipoprotein (VLDL-C) and triglycerides(TGs)and decreased the levels of high density lipoprotein (HDL-C) in serum. Haematological observations of the peripheral blood smears of pathogenic rats fed with methionine also showed crenation of RBCs cell membrane and significant increase in total leucocyte count, differential leucocyte count and platelet counts with significant increase in the mean haemoglobin levels as compared to vehicle control rats. Administration of pravastatin (10mg/kg body weight) to hyperhomocysteinaemia rats significantly decreased level of homocysteine,TC,TGs,LDL-C,VLDL-C and increased the levels of HDL-C in serum .The present results provide clear evidence that oral treatment with pravastatin exhibit homocysteine and lipid lowering activity and also reversal of haematological changes induced by methionine in albino rats .

D-98

ANTIOXIDANT ACTIVITY OF - β -CARYOPHYLLENE ON OVERIAN MORPHOLOGY AGAINST ESTRADIOL VALERATE INDUCED POLYCYSTIC OVERIAN IN FEMALE WISTER RATS

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The present study examines the antioxidant effects of β -caryophyllene, on ovarian tissue in estradiol valerate induced PCOS in rats. Oxidative stress is the most frequent cause of female infertility disorders including polycystic ovary syndrome (PCOS). β -caryophyllene, as a major component of soybean isoflavone scavenges free radicals by antioxidant activities. In histological observation, the induced PCOS rats displayed a greater number of atretic follicles. The follicular quality in - β -caryophyllene treated rats was similar to the control groups. The plasma and ovaries malondialdehyde levels significantly increased in PCOS rats ($p < 0.001$), while the total antioxidant capacity levels, glutathione peroxidase, and superoxide dismutase activities significantly decreased ($p < 0.001$). The plasma and ovary malondialdehyde levels significantly decreased in PCOS rats that were treated with - β -caryophyllene ($p < 0.001$) and the total antioxidant capacity (p 0.05), glutathione peroxidase, and superoxide dismutase activities significantly increased (p 0.001). Conclusion:

Treatment With - β -caryophyllene preserved follicular quality by increasing antioxidant activities and scavenging oxidant levels in PCOS rats.

D-99

EVALUATION OF ANTI-DIABETIC ACTIVITY OF ETHANOLIC EXTRACT OF ROOTS OF SOLANUM NIGRUM IN ALLOXAN INDUCED DIABETES IN RATS

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Worldwide, diabetes is a metabolic condition. According to the International Diabetes Federation (IDF), 366 million people worldwide had diabetes in 2011, and that number is expected to rise to 552 million by the year 2050. The number of diabetics in India was anticipated to be 40 million in 2007, and by 2025, it was possible to predict that this number would reach over 70 million. The present study was to evaluate the anti-diabetic activity of ethanolic extract of roots of Solanum nigrum (EERSN) in rats. Alloxan hydrate was given to rats at a dose of 150 mg/kg i.p. after 48 hours, and the EERSN was given at a dose of 200 mg/kg and 400 mg/kg p.o. for a total of 21 days. Serum biochemical factors such as glucose, total cholesterol, triglycerides, LDL, HDL, and VLDL were examined at the conclusion of the experimental research. After 21 days of therapy with an ethanolic extract of the roots of Solanum nigrum in rats, the high glucose levels were then greatly reduced, and other altered parameters of total cholesterol, triglycerides, LDL, and VLDL levels, but decreased HDL levels, were reversed. The results of the current investigation suggest that Solanum nigrum roots are effective in the treatment of diabetes mellitus. In diabetic model rats, Solanum nigrum roots at a dose of 400 mg/kg significantly decreased glucose, TC, TG, LDL, and VLDL levels while significantly increasing HDL levels. Solanum nigrum roots may therefore have a role in preventing the development of atherosclerosis and coronary heart disease.

D-100

PHARMACOLOGICAL SCREENING OF ANTISNAKE VENOM AND CARDIOPROTECTIVE ACTIVITY OF ORTHOSIPHON STAMINEUS LEAVES IN EXPERIMENTAL ANIMALS

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In India, it is conservatively estimated that up to 20,000 people die annually from snakebites.Various medicinal plants and their compounds reported against snake venom activity. An ethno botanical survey of folk plants used in snake bites in southern parts of Tamil Nadu reports the use of 72 medicinal plants in snake bites. AIM:The Plant Orthosiphon stamineus was authenticated and evaluating the Preliminary phyto chemical screening,Anti-snake venom andCardioprotective activity. METHODOLOGY: Snake venom of NajaNaja was dissolved in 0.9% (w/v) saline, centrifuged and the supernatant was used. Thegroups were treated with venom, after 5 min of oral administration of anti snake venom serum (10mg/kg) and methanolic extracts (200, 400mg/kg), respectively. The mice were observed for 24 hours for the number of mice which were survived.OSE (400 mg kg-1, respectively) Showed marked improvement. RESULT: The study observed that the survival of the mice increased progressively with increasing the dose of the extract in a dose dependant manner. α - Cobratoxin is a substance of the venom of NajaNaja. It is a nicotinic acetylcholine receptor (nAChR) antagonist which binds antagonistically and slowly reversible to muscle-type and neuronal type nAChRs2. This bond will block the receptor's ability to bind acetylcholine and thereby inhibits the ion flow through the postsynaptic membrane, which will lead to paralysation. CONCLUSION: The methanolic extract of O.stamineuspossess significant anti-snake venom activity. Further studies are required to confirm the exact mechanism underlying.

D-101

INVOLVEMENT OF GABA AND BDNF RECEPTOR IN NEUROSUPPORTIVE EFFECT OF EPIPHYLLUM OXYPETALUM AND TRADESCANTIA SPATHACEA IN PTZ KINDLED RAT MODEL

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Epilepsy is being oldest neurological disorders with bad social stigma and profoundly affects many aspects of quality of life. Natural products significantly contributed to the discovery of modern drugs and are alternative source for antiepileptic drugs with better safety and efficacy profiles. Current study identifies plants-Epiphyllum Oxypetalum and Tradescantia Spathacea, being folklore medicine using by tribal species for epilepsy and anxiety as traditional medicine without any scientific study support. Crude exacts of the study plants were tested for antiepileptic action. The Important natural components present in extracts were identified through validated HPLC method and docked with GABA-A and BDNF receptors to check possible interactions in our previous studies. Anti-epileptic properties of these plants through PTZ kindled model using 160 animals in 8 validated groups were studied. Biomarkers like GABA-T, AchE checked through ELISA kits. Electrolyte balance was checked. Associated neuroprotective effect observed through established behavioral tests (Analysis of spatial learning and emotional memory performance using Morris Water Maze). Antioxidant activities (Estimation of oxidative biomarkers like MDA, GSH, SOD, Total protein from brain homogenate) were assessed through ANOVA and p Value determined. Prolongation of latency for onset of seizures and decrease the susceptibility for higher grade of seizures when PTZ challenge was applied as compared to control is observed. Reduced oxidative stress observed. Neuroprotective action confirmed through improved emotional learning and memory parameters like Short escape latency, Quick exploration and less retention time. Vital organ toxicity parameter is checked and noted accordingly.

[illegible]

D-108

[illegible] HEPATOPROTECTIVE ACTIVITY OF METHANOLIC EXTRACT OF [illegible] IN CARBON TETRACHLORIDE AND ETHANOL INDUCED HEPATOTOXICITY IN RATS

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[illegible] the hepatoprotective activity of the methanolic extract of Abrus precatorius in [illegible] and ethanol induced hepatotoxicity in rats. Method: Acute toxicity study, [illegible] activity, estimation of biochemical parameters and histopathological studies were done. Acute toxicity studies was conducted in mice for a period of 14 days. [illegible] is a traditional medicinal plant that is commonly used to treat various [illegible] like diuretics, boils, convulsions etc., in India. The preliminary phytochemical [illegible] shows the presence of Alkaloids, triterpenes, saponins, flavonoids etc. The [illegible] activity of the methanolic extract of Abrusprecatorious (125mg/kg, [illegible], 500mg/kg b/w) against carbontetrachloride (1:1 olive oil and [illegible]) and Ethanol [illegible] with corn oil [illegible] induced toxicity in rats was studied. The development of [illegible] induced by carbontetrachloride is promoted by oxidative stress [illegible] and hydrogen peroxide. carbontetrachloride and ethanol treated groups [illegible] ($p < 0.01$) elevated the SGOT, SGPT, ALP, proteins and total bilirubin which were [illegible] towards normalization by standard and APME induced groups. Dose 250mg/kg of [illegible] has significantly decreased the increased serum enzyme levels. Histological analysis of [illegible] of these toxicity induced rats revealed marked necro inflammatory changes by [illegible]. The activity of Abrusprecatorious methnolic extract at 250mg/kg b/w was comparable to [illegible] drug silymarin (50mg/kg b/w).

D-109

ETHICALLY CONTROVERSIAL & SURGICALLY CHALLENGING: HEAD TRANSPLANTATION

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[illegible] the turn of the last century, the prospect of head transplantation has captured the [illegible] of scientists and the general public. Recently, head transplant has regained [illegible] in popular media, as neurosurgeons have proposed performing this procedure in 2017. [illegible] impact of such a procedure determine if it is even technically possible to perform [illegible] procedure on humans today. Head body transplantation concept was beginning early [illegible], people have discussed the possibility of head transplantation. In 1908, Carrel and [illegible] physiologist, Dr. Charles Guthrie, performed the first dog head transplantation but [illegible] survive. In 1950 surgeon Dr. Vladmir Demikhov grafted the upper bodies of young [illegible] the shoulders of other dogs. In 1965, Robert White, an American neurosurgeon, also [illegible] head transplantation. He performed four cephalosomatic associations between [illegible] monkey heads and isolated monkey bodies, employing direct suture of the carotid and [illegible]. In 2013 Canavero proposed Human head transplant, a procedure involving a clean [illegible] spinal cord to minimize damage and using polyethylene glycol to fuse the spinal cord. [illegible] Head transplantation in mice: Xiao-Ping Ren and colleagues in China report a head-[illegible] experiment in mice, resulting in a white mouse with a black head, and vice versa, [illegible] for 3 hours. In 2015 Canavero details head transplant procedure. He proposes [illegible] the head and donor body to limit cell damage [illegible], and fusing the spinal [illegible] a process called GEMINI.

D-110

[illegible]

[illegible]

D-111

PHARMACOLOGICAL EVALUATION OF PHENOTHIAZINE DERIVATIVE FOR THE TREATMENT OF RHEUMATOID ARTHRITIS IN ANIMAL MODEL

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Despite the permanent progress in medical sciences, the effective treatment of Rheumatoid Arthritis still partly remains elusive. Rheumatoid arthritis (RA) is an autoimmune inflammatory disease, withstanding the invention of several drugs there's more of a went to introduce newer, more secure, and extra powerful reasserts of drugs. Present research work is based on the hypothesis that established antipsychotics (Phenothiazine derivative) is shown effective result for the treatment of RA. The different biomarkers such as TNF α, interleukin (IL)-1β), chemokines, matrix metalloproteinases ((MMP)-3 and -9), and some angiogenic factors are responsible for inflammation in RA. The progression of inflammation is processed by increased expression of Cyclooxygenase-2 (COX-2). The inhibition of overexpression of COX-2 is the prime target site for the treatment of RA. The aim of this study is to establish anti-inflammatory and anti-arthritic property of the Phenothiazine derivative (Flupentixol) through performing different in Vitro assay. In Vitro anti-inflammatory (Fresh Hen's Egg Albumin and Bovine Serum Albumin) protein denaturation assay and In Vitro anti-inflammatory HRBC membrane stabilization method assay was performed. The treatment of Phenothiazine derivative (Flupentixol) was given the nearest result in the comparison with the treatment of standard Diclofenac sodium injection IP approximately in case of percentage protection and percentage of inhibition. The present investigation has been established on the basis of hypothesis which showed that Phenothiazine derivative (Flupentixol) has anti-inflammatory activity which gives us a new treatment strategy for RA in biomedical research.

D-112

DIABETIC HYPERTENSION: REVIEW ON THE MAJOR SECONDARY COMPLICATIONS OF DIABETES

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Worldwide, Hypertension is a significant factor in diabetic patients' deaths. An elevated risk of fatal infections and COVID-19 is shown in people who also have diabetes and hypertension. A higher risk of sudden cardiac arrest is linked to diabetes mellitus and hypertension, especially impaired fasting glucose, and prehypertension. The risk of mortality, hospitalization, and disability is significantly increased by comorbidities such as diabetes and hypertension. Diabetes, hypertension, and frailty all raise the risk of cognitive and physical decline as well as chronic kidney damage. This review does a good job of explaining diseases like insulin resistance and [illegible] as well as their connection to cardiovascular disease. A high

D-135

PHARMACOKINETIC & TOXICITY (ADMET) PROFILING: AN OVERVIEW

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Drug discovery and development is very complex, costly and timely process, which includes disease selection, target identification, lead identification, validation & optimization, preclinical and clinical studies. During this exhaustive process, several drug candidates fail to become a drug because of improper pharmacokinetic properties and toxicities. Therefore, an effective molecule with better ADMET can well stand in drug development process. Consequently, the present review elaborates about in-vivo studies, In-vitro assay and In-silico prediction as profound approaches for ADMET studies. In-vivo studies include experimental animal testing, which plays an essential role in the evaluation of drug safety before progression into clinical trials. Several in vivo tests have been developed to measure bioavailability, metabolic rate, excretion rate and toxicity of potential therapeutic molecules. In-vitro studies is conducted to facilitate selection of drug candidates with the best safety and pharmacological profile while understanding the mechanisms behind their activity. Parallel Membrane Permeability Assay (PMPA), P glycoprotein cell culture assay, hepatocyte cell culture assay, MTT assay, Ames assay, hERG (human Ether a go-go Related Gene) assay are

D-137

FERULIC ACID AND PROTOCATECHUIC ACID AMELIORATES EXPERIMENTALLY INDUCED DIABETIC NEPHROPATHY IN RAT THROUGH ANTIOXIDANT CAPABILITIES

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The present study was aimed to evaluate the therapeutic effects of ferulic acid (FA) and protocatechuic acid (PCA) against alone and in combination with streptozotocin (STZ) induced diabetic nephropathy (DN) in rats. Male Wistar rats were divided into 5 different groups with 6 rats in each group. The protocol was approved by the IAEC of the institute. The groups were assigned as control, diabetic nephropathy (DN), DN + FA (100 mg/kg, p.o.), DN + PCA (50 mg/kg, p.o.), and DN + FA + PCA. After induction of DN (4 weeks) the treatment was continued for a further 4 weeks, so the total study duration was 8 weeks. DN was assessed by evaluating various biochemical parameters (BGL, serum creatinine, albumin, urea, uric acid, and micro-albumin) as well as kidney oxidative stress markers (SOD, CAT, GSH, and MDA). The treatment with antioxidants significantly restores the elevated levels of biochemical parameters whereas significant alteration of markers of oxidative stress was observed. Collectively, FA and PCA attenuated diabetes-induced nephropathy in rats through their antioxidant potential. In conclusion, combined FA and PCA treatment shows an antioxidant effect in diabetes by significantly decreasing oxidative stress and improving renal function in diabetic rats.

enzyme than other peripheral tissues. Phloroglucinol can be utilised as a test substance because it has been discovered to reduce reactive oxygen species in the brain. Furthermore, due to ethical considerations and the high cost of experimenting, insilico techniques have grown in their ability to develop treatments for certain disorders. In this study a total of five proteins have been identified based on previous studies as potential targets: β- amyloid (2MXU), Amyloid Precursor Proteins (5TPT), Tau (2MZ7), Parkin (5C9V) and α - synuclein (7STX). The compound structure was extracted online from Protein Data Bank and Insilico docking methods were applied to obtain docking scores with the ligand Phloroglucinol. In this study it was found that Phloroglucinol possess good binding ability with the given targets and could be used in for treatment of neurodegenerative disease with further pre-clinical and clinical trials.

D-144

TRANSDERMAL PATCHES FOR THE TREATMENT OF ANGINA PECTORIS: AN EFFECTIVE DRUG DELIVERY SYSTEM.

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Transdermal drug delivery has evolved throughout time, with the event of passive and active technologies that have resulted in increased Distribution, accuracy in drug dose, and higher fulfilment of the necessities of the individual. The seek for a lot of powerful prescribed drugs That can be delivered to the skin through applicable transdermic technologies can still be attention within the development of medicine for Transdermal patches and alternative kinds of delivery. Topical and transdermic distribution has been around for a short time, however this review can specialize in Transdermal patches and the way they've evolved. The articles are searched on completely different search engines like Scopus information, Science direct, PubMed, Google scholar, and philosopher science victimization multiple keywords. Associate degree adhesive skin patch is applied to the skin and contains drugs That is absorbed into the blood through the skin. It aids within the recovery of associate degree afflicted a part of the body. In comparison to oral, topical, i.v., And I.m. administration systems, transdermic drug delivery permits a controlled unleash of the medication into patients, usually by either a porous Membrane or by body heat melting tiny layers of medication embedded within the adhesive. The basic disadvantage of transdermic delivery Methods is that the skin may be a extremely economical barrier, therefore, solely little molecules will enter the skin and be administered during this manner.

D-145

AN AYURVEDIC FORMULATION OF PSORALEA CORYLIFOLIA LINN (BAKUCHI TAILA) OF DIFFERENT DOSAGE FORMS FOR ITS ANTI-MICROBIAL POTENTIAL

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Psoriasis is a dermatological disorder consists of abnormal multiplied skin cells than normal one. It causes the thickness of skin is increased and forms a red patches and white scales in the lesion. The disease causing several adverse problems in patient's i.e., adverse physical and mental conditions that are same to malignancies, heart disorder, diabetes mellitus, and depression. Psoriasis is an immune-mediated inflammatory disease characterized by excessive growth and abnormal differentiation of keratinocytes. Psoralea corylifolia Linn. commonly known as "Bakuchi" used in Indian traditional medicine. Ayurveda for the treatment of leucoderma, scabies, leprosy, psoriasis, dermatitis etc. Bakuchi taila is one of the Ayurvedic formulation which is used externally in skin disease. Hence, an attempt has been made to convert Bakuchi taila into its different dosage forms and to evaluate anti-microbial activity against gram positive and gram-negative bacilli. Bakuchi taila, Bakuchi gel, Bakuchi siktha taila and Bakuchi ointment possess significant anti-microbial activity against Bacillus subtilis, Staphylococcus aureus, Escherichia coli and Klebsiella pneumonia. These results confirmed that potential of Bakuchi seeds (Psoralea corylifolia Linn.) in the development of Ayurvedic topical skin formulations.

D-146

ROLE OF CUCURBITACINS FOR THE TREATMENT OF CANCER

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Tetracyclic triterpenoids that are substantially oxidized are known as Cucurbitacins. They are extensively dispersed across the plant world and serve as heterologous chemical pheromones that shield plants from external biological threats. There are several types of Cucurbitacins were isolated from medicinal plants and partially synthesized Cucurbitacins are also available. Cucurbitacins are plays an important role in the treatment of cancer by anti-proliferation, cell cycle arrest, and apoptosis induction. One of the main causes of death is cancer. Chemotherapy is frequently used to treat cancer after surgery or when it is in its early stages. Chemotherapy majorly associates with side effects and negative consequences. Additionally, the majority of chemotherapeutic medicines on the market lack tumor cell selectivity. Cucurbitacins' capacity to alter mitochondrial transmembrane potential, transcriptional activity through multiple factors or genes, and their ability to activate or inhibit pro- or anti-apoptotic proteins are the most important mechanisms underlying their ability to cause apoptosis.

D-147

IN-VIVO ANTI-RHEUMATIC ACTIVITY OF CAULERPA SERTULARIOIDES (GREEN ALGAE) CHLOROFORM EXTRACT BY USING TYPE-II COLLAGEN INDUCED ARTHRITIS MODEL

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To investigate the anti-arthritis effects of chloroform extract of Caulerpa Sertularioides (green algae) in type-II collagen induced arthritis (CIA) induced model in Swiss albino rats. Rat oedema was produced by sub-plantar injection of 0.1 ml of CIA with complete Freund's adjuvant (CFA). Chloroform extract of Caulerpa sertularioides (CECS) was administered orally for 28 days in various concentration 100 mg/kg, 200 mg/kg and 400 mg/kg. Arthritic assessment was carried out based on parameters including body weight, ankle joint measurement and arthritic Score. At the end of study period, animals were sacrificed and various haematological, biochemical and oxidative stress parameters were evaluated. Administration of CSCE significantly attenuated the behavioural, biochemical, haematological induced by the CIA in dose dependent manner. Our research brings us to the conclusion that plant's chloroform extract has a significant anti-arthritic, anti-inflammatory, and immune regulating effect. The strength of the anti-oxidant action was greatly regulated.

D-148

EVALUATING ANTI-OXIDANT, ANTI-DIABETIC CAPABILITIES OF MORUS ALBA EXTRACTS TO TARGET DIABETIC CARDIOMYOPATHY BASED ON INFLAMMATORY MECHANISTIC EVENTS.

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Patients with diabetes mellitus often get diabetic cardiomyopathy (DCM) as a consequence. The pathophysiology of DCM involves several molecules and signaling pathways including p38 mitogen-activated protein kinase (p38 MAPK), c-Jun N-terminal kinase and extracellular-regulated protein kinases (ERK). In this study, Morus Alba, was extracted using three solvents such as methanol, ethyl acetate, and chloroform, and evaluated for potential anti-oxidant (DPPH assay, Superoxide anion radical scavenging capacity) and diabetic properties (α -glucosidase inhibitory assay). Methanolic leaf extract showed the DPPH free radical scavenging and Superoxide anion radical scavenging capacity activities IC50 of 255.7138 ± 7.38 and 237.92 ± 7.38 μg/mL, respectively. Similarly, it also exhibited potential alpha-glucosidase inhibitory activity among other extracts with an IC50 of 9.58 μg/mL. Based on the results, the methanolic leaf extract of Morus alba was selected for GC-MS/MS analysis in order to derive the molecular composition. GC-MS/MS analysis revealed the presence of Chlorogenic acid, Caffeic acid, Quercetin, kaempferol, Rutin, Cyanidin-3-glucoside, and 1-Deoxynojirimycin as major components. Results demonstrated that methanolic fraction of the crude Morus alba extract showed superior SOD and alpha-glucosidase activities with an IC50 of 191.29 ± 14.22, and 171.75 ± 11.06, respectively. The two fractions were studied for their anti-inflammatory mechanism with p38 MAPK inhibition. Results ,Peak 2 displayed superior protein denaturation with IC50 of 36.1 μg/ml and MAP kinase inhibition with an IC50 of 56.87 μg/Ml, and reduced DCM via lower imbalance and p38-mediated inflammation.

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have significant effect during animal studies for neuropharmacological disorders.

D-155

GILBERT'S SYNDROME IN A YOUNG INDIAN

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Case Study Background: Gilbert's Syndrome is a benign, familial, characterized by recurrent severe symptomatic condition. It was diagnosed by unconjugated hyperbilirubinemia due to haemolysis reported in inherited autosomal dominant disordered patient. It is a result of mutation in bilirubin uridine diphosphate glucuronyltransferase gene(UGT1A1).
Case Presentation: A 21 year old male having cleft lip and cleft palate, presented with recurrent episodes of jaundice, blood vomitings, haematuria, blood infection, testical pain, cold, dry cough. In addition to this BP, diabetes, nutritional defeciences over 10 years. All laboratory parameters were normal except for unconjugated hyperbilirubinemia. After careful examination, diagnosis of Gilbert's Syndrome was made.Conclusion : As this case study is fulfilling the criteria of Gilbert's Syndrome, prescribed plan of care is followed in order to reduce the clinical complications and risk factors of hyperbilirubinemia. Regular monitoring of glucose, BP and body functions. Management by counselling to avoid stressful conditions and prolonged fasting.

D-156

INTERACTIVE STUDY OF WITHANIA SOMNIFERA ROOTS EXTRACT WITH ORAL HYPOGLYCEMIC AGENTS IN DIABETES INDUCED NEUROPATHY

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Diabetic neuropathy, is a secondary complication associated with diabetes mellitus. The aim was to evaluate the antidiabetic and antinociceptive activity of Withania somnifera root extract (WSRE) in combination with low dose of oral hypoglycemic agents in diabetic neuropathic pain models. Male Sprague Dawley rats were divided into eight groups with 6 animals in each group. Type 2 diabetes was induced by high fat diet / low dose STZ model. Blood glucose level estimation was done once in 15 days. Single and multiple dose studies of WSRE with and without standard oral hypoglycemic agents (OHA) were performed for a period of ten weeks. Eddy's hot plate and formalin test are the diabetic neuropathic pain models. Antioxidant status in the sciatic nerve was performed. Sciatic nerve and pancreas histopathological studies are also carried out. Diabetic rats treated with WSRE alone and its combination with low dose of standard OHAs produced the significant decrease in blood glucose level. Imbalance in the antioxidant level was rectified after the treatment. WSRE alone and its combination with low dose OHAs increased the pain threshold levels in diabetic neuropathic rats. Histopathological studies proved no damage in the sciatic nerve among the treated groups. Combined treatment of WSRE with standard OHAs in diabetic neuropathy increased the threshold towards glucose and neuropathic pain.

D-157

INSITE SICKLE CELL ANEMIA.

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Sickle cell anemia, an inherited group of disorders, red blood cells convert into a sickle shape. The cells die early, leaving a shortage of healthy red blood cells and can block blood flow causing pain. There are about 100,000 people with sickle cell anemia in the United States. Worldwide there are about 300,000 babies birth with sickle cell disease every year. Signs and symptoms include Swelling of hands and feet, Frequent infections, Delayed growth or puberty, Vision problems, Episodes of pain. Sickle cell anemia is caused by a change in the gene that tells the body to make the iron-rich compound in red blood cells called hemoglobin. Hemoglobin enables red blood cells to carry oxygen from the lungs throughout the body. The hemoglobin associated with sickle cell anemia causes red blood cells to become rigid, sticky and misshapen. Sickle cell anemia can lead to complications including Stroke, Pulmonary hypertension, Organ damage, Blindness Deep vein thrombosis, Pregnancy complications. A blood test can check for the form of hemoglobin that underlies sickle cell anemia. Treatment include medications and blood transfusions. For some children and teenagers, a stem cell transplant might cure the disease. Medication include Hydroxyurea (Droxia, Hydrea, Siklos) L-glutamine oral powder (Endari) Crizanlizumab (Adakveo). To avoid complications of sickle cell anemia Take folic acid supplements daily and choose a healthy diet Drink plenty of water Avoid temperature extremes Exercise regularly Don't smoke.

D-158

A REVIEW OF CAMPHOR POISONING CAUSED BY VICKS VAPORUB IN NEONATES

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Camphor is a pleasant-smelling compound of terpene group. It is highly volatile and toxic in nature. Camphor is one of the commonest ingredients present in topical ointments like Vicks VapoRub and Tiger balm which is most widely used in India. These are available in over the counter used to get temporary relief from minor aches, common cold, cough and congestion. We report a case of a 22-day-old neonate who experienced abnormal eye and limb movements after applying VapoRub to treat a mild cough. The baby was alive but had no movement or response to pain. After a brief history collection from the parents, they concluded that it is camphor poisoning. The Food and Drug Administration (FDA) approved concentration of camphor in these products is 0.1% to 11% VapoRub has a 4.7% of camphor. But in the case of neonates, they have a higher body surface area to weight ratio, thinner stratum corneum and increased skin perfusion can cause increased transdermal absorption of drugs which reaches into systemic circulation rapidly. It can lead to toxicity when it is used for a longer period. Vicks VapoRub is widely effective, but there are certain precautions one needs to take care before using it. The label of Vicks VapoRub, clearly states that it is not meant for children under 2 years of age. Due to a lack of awareness among parents and other users applying VapoRub to babies can cause seizure, hepatic and renal damage. In some cases, it can also lead to death.

D-159

EVALUATION OF THE HYPOGLYCEMIC EFFECT OF VITEXIN FORMULATION INFLUENCES THE LIVER CIRCADIAN CLOCK REGULATION

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Circadian Clock is associated with endogenous biological activity system that synchronizes physiology, mental and behaviour to day and night cycles which denotes the Active and Rest phases. They have the effects on sleep, hormones, appetite, and alternative body functions. Abnormal or deregulating rhythms are also involved in avoirdupois, diabetes, depression, emotional disturbance, sleep disorders etc. In different zeitgebar times (ZT) corresponding genes regulate metabolic functions like nutrient uptake, processing, and detoxification for align organ perform to cycle with nutrient provide and demand. Genetic or environmental disruption of the ZT clock causes metabolic diseases. The aim of the research is to prove the evaluation of the effect of Vitexin formulation influences the Liver Circadian Clock System. The already established impact of Vitexin on streptozotocin induced diabetic rats was shown important effect in reducing glucose level. The lead molecule was preparatory designated as Vitexin Microspheres were prepared for the evaluation purpose which were given as the treatment in isolated hepatic cells of Wister rats. The isolated hepatic cells in control condition the cell viability was confirmed. By haemolysis profiling the comparison between Vitexin Standard and Vitexin Microsphere, formulation was shown better result. The formulation of antidiabetic compound, can control the Liver Circadian Rhythms in diabetic patients and also for further studies.

D-160

ANTI-OBESITY ACTIVITY OF AQUEOUS EXTRACT OF CYPERUS ROTUNDUS LINN. COMBINATION OF CAFETERIA DIET AND STREPTOZOTOCIN INDUCED OBESITY IN WISTAR RATS

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Diabetes and obesity are two of the most prevalent health issues affecting millions of individuals. An Indian medicinal plant known as Cyperus rotundus Linn. has been shown to have numerous health advantages. Therefore, the aqueous extract's anti-obesity effect is also investigated in the current study. Except for the animals in the control groups, all of the experimental animals were made obese. Experimental rats were made obese by feeding them food similar to the standard cafeteria diet. Additionally, co-morbid conditions including diabetes were produced by STZ. The following study parameters were used: body weight, locomotor activity, rectal temperature, glucose tolerance test, and several biochemical

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Certificate

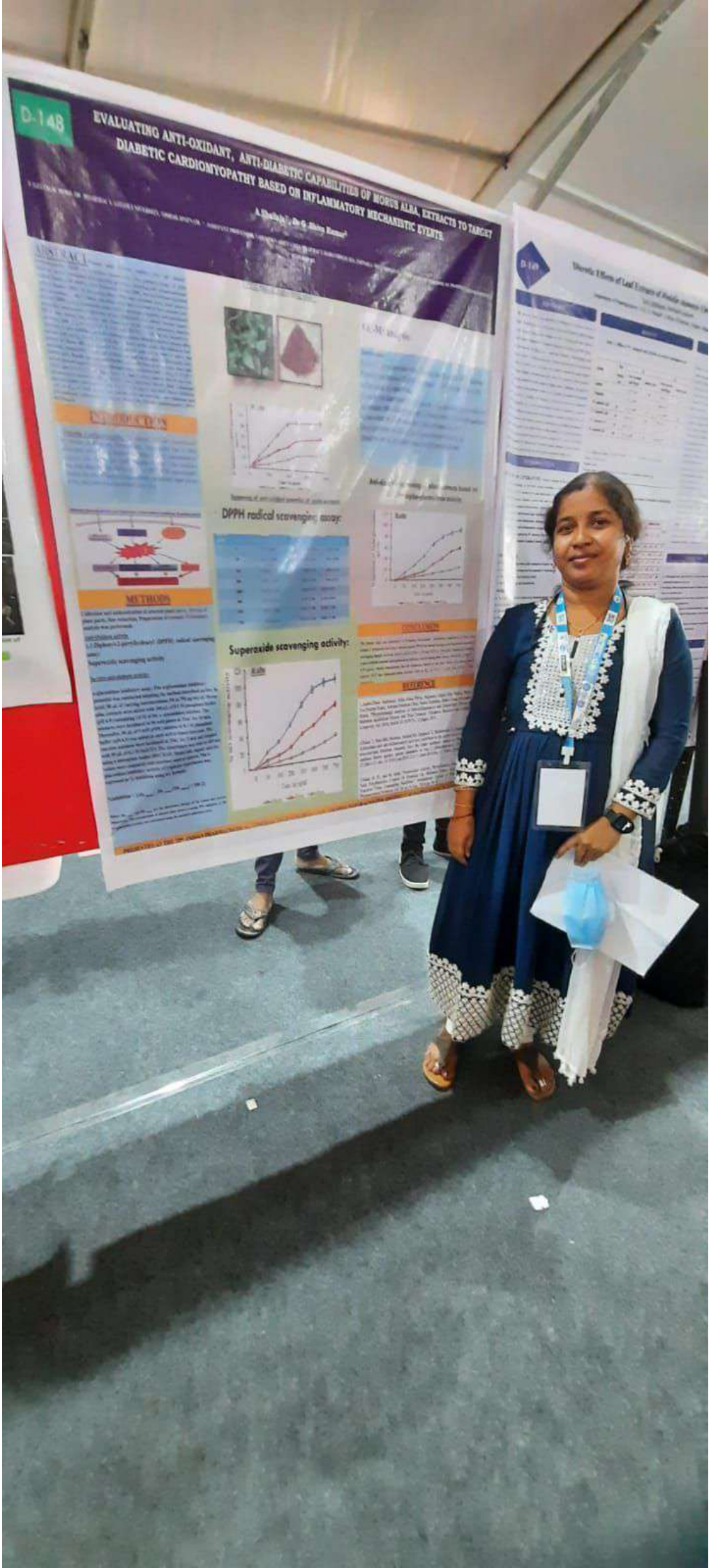
POSTER

It is our pleasure to certify that,

A. SHAILAJA presented a Poster in Scientific Session entitled **"EVALUATING ANTI-OXIDANT, ANTI-DIABETIC CAPABILITIES OF MORUS ALBA, EXTRACTS TO TARGET DIABETIC CARDIOMYOPATHY BASED ON INFLAMMATORY MECHANISTIC EVENTS."** in the 72nd Indian Pharmaceutical Congress held at Department of Pharmaceutical Sciences, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur during January 20-22, 2023.

Dr. V. G. Somani	Mr. Atul Mandlekar	Prof. Milind Umekar	Prof. Prakash Itankar	Prof. Roop K. Khar	Prof. Dadasaheb M. Kokare
President, IPCA	Chairman,LOC	Organising Secretary,LOC	Organising Secretary,LOC	Convener, IPCA-SSC	Chairman, Scientific Committee, LOC

Presentation Code: D-148


D-148
EVALUATING ANTI-OXIDANT, ANTI-DIABETIC CAPABILITIES OF MORUS ALBA, EXTRACTS TO TARGET DIABETIC CARDIOMYOPATHY BASED ON INFLAMMATORY MECHANISTIC EVENTS.
DPPH radical scavenging assay:
Superoxide scavenging activity:

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Theme:
"Access to Quality & Affordable Medical Products"

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POSTER

It is our pleasure to certify that,

POLEPAKA KAVITHA BABURAO presented a Poster in Scientific Session entitled **"SYNTHESIS, CHARACTERIZATION AND ANTI-BACTERIAL ACTIVITY OF NOVEL HETEROCYCLIC CHALCONES DERIVATIVES OF 2, 4- THIAZOLIDINE DIONE"** in the 72nd Indian Pharmaceutical Congress held at Department of Pharmaceutical Sciences, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur during January 20-22, 2023.

Dr. V. G. Somani	Mr. Atul Mandlekar	Prof. Milind Umekar	Prof. Prakash Itankar	Prof. Roop K. Khar	Prof. Dadasaheb M. Kokare
President, IPCA	Chairman,LOC	Organising Secretary,LOC	Organising Secretary,LOC	Convener, IPCA-SSC	Chairman, Scientific Committee, LOC

Presentation Code: B-233


B-233
THAIZOLIDINE DIONE
RESULTS
Synthetic scheme for the synthesis of compounds 7a-d
CONCLUSIONS
REFERENCE
ACKNOWLEDGEMENTS
Certificate

72nd INDIAN PHARMACEUTICAL CONGRESS

IPC NAGPUR

NITIKA

Theme: "Access to Quality & Affordable Medical Products"

72nd Indian Pharmaceutical Congress, Nagpur

Certificate

POSTER

It is our pleasure to certify that,

KALAM SIRISHA presented a Poster in Scientific Session entitled **"METHOD DEVELOPMENT AND VALIDATION OF SPARFLOXACIN AND OFLOXACIN IN TABLET DOSAGE FORMS BY VISIBLE SPECTROPHOTOMETRY"** in the 72nd Indian Pharmaceutical Congress held at Department of Pharmaceutical Sciences, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur during January 20-22, 2023.

Dr. V. G. Somani	Mr. Atul Mandlekar	Prof. Milind Umekar	Prof. Prakash Itankar	Prof. Roop K. Khar	Prof. Dadasaheb M. Kokare
President, IPCA	Chairman,LOC	Organising Secretary,LOC	Organising Secretary,LOC	Convener, IPCA-SSC	Chairman, Scientific Committee, LOC

Presentation Code: E-10


F-191
F-192
METHOD DEVELOPMENT AND VALIDATION OF SPARFLOXACIN AND OFLOXACIN IN TABLET DOSAGE FORMS BY VISIBLE SPECTROPHOTOMETRY

72nd INDIAN PHARMACEUTICAL CONGRESS

IPC

NAGPUR

NITIKA

Theme:
"Access to Quality & Affordable Medical Products"

INTAS

72nd Indian Pharmaceutical Congress, Nagpur

Certificate

POSTER

It is our pleasure to certify that,

P VIVEK SAGAR presented a Poster in Scientific Session entitled **"METHOD DEVELOPMENT AND VALIDATION FOR QUANTIFICATION OF APIXABAN IN HUMAN PLASMA USING LC-MS/MS."** in the 72nd Indian Pharmaceutical Congress held at Department of Pharmaceutical Sciences, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur during January 20-22, 2023.

Dr. V. G. Somani	Mr. Atul Mandlekar	Prof. Milind Umekar	Prof. Prakash Itankar	Prof. Roop K. Khar	Prof. Dadasaheb M. Kokare
President, IPCA	Chairman,LOC	Organising Secretary,LOC	Organising Secretary,LOC	Convener, IPCA-SSC	Chairman, Scientific Committee, LOC

Presentation Code: F...

72nd INDIAN PHARMACEUTICAL CONGRESS

IPC NAGPUR

NITIKA

Theme:
"Access to Quality & Affordable Medical Products"

INTAS

72nd Indian Pharmaceutical Congress, Nagpur

Certificate

POSTER

It is our pleasure to certify that,

MADATHALA SREEKANTH presented a Poster in Scientific Session entitled **"ASSESSMENT OF POTENTIAL ANTIUROLITHIATIC PROPERTY OF CARISSA CARANDAS LINN. LEAVES BY IN-VITRO STUDIES"** in the 72nd Indian Pharmaceutical Congress held at Department of Pharmaceutical Sciences, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur during January 20-22, 2023.

Dr. V. G. Somani	Mr. Atul Mandlekar	Prof. Milind Umekar	Prof. Prakash Itankar	Prof. Roop K. Khar	Prof. Dadasaheb M. Kokare
President, IPCA	Chairman,LOC	Organising Secretary,LOC	Organising Secretary,LOC	Convener, IPCA-SSC	Chairman, Scientific Committee, LOC

Presentation Code: D-136

72nd INDIAN PHARMACEUTICAL CONGRESS

IPC

NAGPUR

NITIKA

Theme:
"Access to Quality & Affordable Medical Products"

INTAS

72nd Indian Pharmaceutical Congress, Nagpur

Certificate

POSTER

It is our pleasure to certify that,

MARKA SHIVA RAMA KRISHNA presented a Poster in Scientific Session entitled **"A PROSPECTIVE OBSERVATIONAL STUDY ON POLYPHARMACY LED INAPPROPRIATE MEDICATION IN GERIATRICS USING STOPP/START CRITERIA"** in the 72nd Indian Pharmaceutical Congress held at Department of Pharmaceutical Sciences, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur during January 20-22, 2023.

Dr. V. G. Somani	Mr. Atul Mandlekar	Prof. Milind Umekar	Prof. Prakash Itankar	Prof. Roop K. Khar	Prof. Dadasaheb M. Kokare
President, IPCA	Chairman,LOC	Organising Secretary,LOC	Organising Secretary,LOC	Convener, IPCA-SSC	Chairman, Scientific Committee, LOC

Presentation Code: H-33


gencrest


A-655
Nasal Microemulsion for The Management of Alzheimer's Disease

72nd INDIAN PHARMACEUTICAL CONGRESS

IPC NAGPUR

NITIKA

Theme:
"Access to Quality & Affordable Medical Products"

72nd Indian Pharmaceutical Congress, Nagpur

Certificate

POSTER

It is our pleasure to certify that,

NIMMAGADDA SRINIVAS presented a Poster in Scientific Session entitled **"A CROSS-SECTIONAL SURVEY ON MANDATORY GENERIC PRESCRIBING AND GENERIC SUBSTITUTION FOR BRAND-NAME MEDICINES IN INDIA"** in the 72nd Indian Pharmaceutical Congress held at Department of Pharmaceutical Sciences, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur during January 20-22, 2023.

Dr. V. G. Somani	Mr. Atul Mandlekar	Prof. Milind Umekar	Prof. Prak[illegible] Hankar	K. Khar	Prof. Dadasaheb M. Kokare
President, IPCA	Chairman,LOC	Organising Secretary,LOC	Organising Secr[illegible]	A-SSC	Chairman, Scientific Committee, LOC

GPAT DISCUSSION CENTRE

Presentation Code: J-23