

### **Liposomes in cosmetics: A Study**

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**Abstract:** Liposomes are commonly used in dermal applications as protective systems for active ingredients and for their moisturizing properties. They are spherical vesicles composed of phospholipids with an aqueous core. Either lipophilic or hydrophilic active ingredients can be incorporated in these vesicles. But they may also have the property to penetrate into the skin, carrying actives to the target site, where these molecules will be released. Liposome acting as such a dermal carrier have to be small sized, unilamellar and equipped with a flexible membrane. Nowadays skin care formulations must meet high standards of efficacy - preferably visible effects for the consumers are much more sophisticated than in the past. As a result, consumers expect and demand real performance from their products. To ensure effectiveness of the cosmetic formulation, the actives have to be transported to the target site, mostly into the epidermis. Flexible liposomes are the only choice to carry active molecules into the deeper skin layers (biological syringe) by stabilizing the actives and even acting as pharmaceutical or cosmetic ingredient due to its chemical nature.

**Keywords:** Flexible liposomes, Cosmotics, penetration enhancers.

### **Psychiatric Diseases: First Do No Harm; Evidence Based Medicine**

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**Abstract:** Evidence based drugs is an approach to medical practices that uses the results of patient care research and other available objectives evidence as a component of clinical decision making. Evidence based medicine doesn't replace clinical judgment with the current best evidence. Evidence based medicine seeks the best existing evidence from basic science to clinical research with which to in from clinical decision. The practice of Evidence based medicine is to recognize information need while caring for a patient. There are three step processes of applying to EBM process to Pharmacotherapeutics decision they are: Recognize information needs and convert them into answerable question. Conduct efficient searches for the best evidence. Critically appraise the evidence for its validity. Apart from medical treatments, a lot can be done to the patients who are suffering from Psychiatry disorders. EBM may play important role to get right treatment to patient. The major tools used to develop reliable evidence consist of the randomized clinical trial and the large observational register.

**Key Words:** Psychiatry Disorders, EBM, Clinical & Randomized Trails.

## **Broken Heart Syndrome or Stress Induced Cardiomyopathy**

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**Abstract:** Stress-induced cardiomyopathy or Takotsubo cardiomyopathy is a recently increasing diagnosed disease showed by transient apical or mid left ventricular dilation and dysfunction. This sign is similar to acute myocardial infarction but without significant coronary artery stenosis and intra coronary clots. On the other hand there are important and essential differences in their management. Consequently, our physicians should know about its pathophysiology, diagnosis and treatment.

**Keywords:** Stress induced cardiomyopathy, Takotsubo cardiomyopathy, Broken heart syndrome, Apical ballooning syndrome, Ampulla cardiomyopathy

## **Role of Pharmacist in Smoking Cessation**

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**Abstract:** Smoking is one of the health hazards in human life .Tobacco smoking consist of harmful toxic substances leading to cancer even to death ,it can affect all categories in human life irrespective of age ,gender etc .smoking cessation is the preventive measure to avoid harmful effect which is carried out by health care team .this program is worked out for fruitful result with effective patient counseling by pharmacist with NRT provide ward with appropriate smoking cessation pharmacotherapies and involving with patient medical reconciliation and to provide advice to other clinical staff regarding nicotine withdrawal and arrange discharge advise for patient regarding ongoing pharmacotherapy and to minimize the withdrawal symptoms .pharmacist is essential for interpretation the management of smoking cessation using patient clinical data and NRT therapy. Patient counseling strategies include open closed questioners which is carried on with minimum time using quitting programmers like 5A's counselling that includes to explaining quiet smoking with both pharmacological and non-pharmacological management smoking cessation can be carried out by six strategies including academics, campaign and advertisement.

**Key words:** smoking cessation, NRT, bupropion and varenicline.

## **Assessment of the Attitude, Knowledge and Practices of Medical Professionals About Adverse Drug Reactions and Their Reporting During Practice in Government Hospital and Private Setup**

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**Abstract:** Adverse drug reactions ' the response of the drug which is noxious and unintended, occurs at normal dose for using prophylaxis, diagnosis, or therapy of disease, or for the modifications of physiological function. The ADR'S plays a major role since 19<sup>th</sup> century which can leads to moderate to severe conditions health complications, life threatening conditions and sometimes which can lead to death of the patient. The ADR'S are measured by WHO scale. There are many ADR'S are arises while treating the patient or during the treatment. To monitoring and prevent the ADR'S in treatment, it is one of the most important factor for better quality of treatment, to give quality of life to the patient and better patient compliance. The statistical collected by the study is conducted on adverse drug reactions are evolved during treatment, it is based on knowledge about ADR'S and their reporting during practice of all health care professionals (Physicians, Clinical Pharmacists, Pharmacists, Nurses) working on government and private hospitals and clinics in Suryapet (dist.) Telangana.

**Key Words:** Adverse Drug reaction; Health Care Professionals; WHO scale.

## **Anemia's: Crisis in Developing Countries**

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**Abstract:** Anemia is the in ability of the blood to carry enough oxygen to meet body needs. It can result from in adequate Red blood cell (RBC) production or low levels of hemoglobin in the blood, but in some times it is due to production of faulty hemoglobin, production of insufficient or defective erythrocytes and blood loss or excessive erythrocytes breakdown (Hemolysis). Anemia can have caused by abnormal changes in red cell size or color. Anemia associated with a normal RBC count and no abnormalities of erythrocytes structure is may be due to normochromic, normocytic Anemia. As per WHO, the severity anemia follows mild, moderate, severe and very severe. Mainly three major groups; Blood loss, Hemolysis, Decreased production of RBC's. Genetic factors may include Haemoglobinopathies (thalassemia), enzyme abnormalities of the glycolytic pathways, defect of the RBC cytoskeleton, congenital dyserythropoietic Anemia, Rh null disease, Hereditaryexocytosis, a beta lipoproteinemia and Fanconi Anemia. Nutritional etiologies include Iron deficiency, vitamin B<sub>12</sub>, folate deficiency, starvation and generalized malnutrition. Physical causes include trauma, burns, frostbite.

**Key Words:** Anemia, RBC, WHO, Thalassemia.

## **Edible Vaccines: A New Approach to Oral Immunization**

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**Abstract:** Edible vaccines offer exciting possibilities for significantly reducing the burden of diseases like hepatitis and diarrhoea, particularly in developing world where storing and administering vaccines are the major problems. Edible vaccines are prepared by molecular farming using the science of genetic engineering. Selected genes are introduced into the plants. The transgenic plant is then induced to manufacture the encoded protein. Owing to its low cost, it will be suitable for developing countries like India. Edible vaccines are mucosal-targeted vaccines, which cause stimulation of both systematic and mucosal immune response. Edible vaccines are being developed for various diseases, such as measles, cholera and hepatitis B, and many more are in the process of development. Thus, they may also help to suppress autoimmune disorders such as Type-I diabetes, diarrhoea, multiple sclerosis, rheumatoid arthritis, etc. Human trials conducted by the National Institute of Allergy and Infectious Diseases (NIAID), US Department of Health and Human Services, USA show that edible vaccines are feasible. ProdiGene, a biotech company, has a patent for vaccine against, viral diseases of hepatitis and transmissible gastroenteritis virus. This review comprises methods of preparation, mechanism of action, recent developments, clinical trials and therapeutic applications of edible vaccines.

**Keywords:** Transgenic plant, edible vaccine, oral immunization, mucosal immunity, autoimmunity.

## **Gold Nanoparticles in Drug Delivery-A Novel Approach**

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**Abstract:** Gold nanoparticles provide non-toxic carriers for drug and gene delivery applications. With these systems, the gold core imparts stability to the assembly, while the monolayer allows tuning of surface properties such as charge and hydrophobicity. Among nanoparticles, gold nanoparticles demonstrate special advantages in this field due to their unique properties, small size and high surface area-to-volume ratio. These particles have been widely used in various biomedical applications and drug delivery systems due to their inert nature, stability, high dispersity, non-cytotoxicity and biocompatibility. Gold nanoparticles as therapeutics and diagnostic agents. However, there are challenges in using gold nanoparticles as drug delivery systems such as biodistribution, pharmacokinetics, and possible toxicity. Gold nanoparticles could be prepared and conjugated with many functionalizing agents, such as polymers, surfactants, ligands, dendrimers, drugs, DNA, RNA, proteins, peptides and oligonucleotides. Overall, Gold nanoparticles would be a promising vehicle for drug delivery and therapies.

**Key words:** Hydrophobicity, non-cytotoxicity, polymers, surfactants, ligands, oligonucleotides

### **Antibiotic: Friend And Foe**

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**Abstract:** Antibiotics are weapons of choice in fight against infectious bacterial diseases. They either kill bacteria directly or prevent the bacterium from dividing and therefore multiplying. Antibiotics are requiring in the treatment of infections such as urinary tract infections, strep throat, ear infections and pneumonia. The use of antibiotics is increasing steadily to the point where antibiotics are not only used against dangerous disease but also against harmless but bother some conditions. The rise of “Superbugs” such as MRSA has been attributed to antibiotic overuse. Overuse of antibiotics actually makes the immune system weaker. Each time antibiotic is administered, an opportunity for the host immune system to develop is lost. High incidence in the population increases the chance of being infected with resistant bacteria, regardless of an individual’s antibiotic use. This poster describes the therapeutic and side effects of antibiotics.

**Key words:** Antibiotics, Bacteria, Super-bugs and immune system

### **Isolation of Vitexin From Methanolic Extract of Beet Root and Evaluation of In Vivo Antitumour Activity on S-180 AC Rat Model Followed By Molecular Docking Against Topoisomerase-I**

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**Abstract:** The main objective of the present research work was the isolation of the bioactive molecule vitexin present in the methanolic extract of beet root (*Beta vulgaris*) and evaluation of antitumour activity. Vitexin was characterized by HPLC-MS, IR, H<sup>1</sup>-NMR, <sup>13</sup>C-NMR etc. Molecular docking of vitexin with respect to the target protein Topoisomerase-I was evaluated by Auto dock program with PDB id 1A36 and displayed the binding energy -3.95 k.cal/mol. In vivo antitumor activity of ME-BRT was carried out against S-180-AC rat model. ME-BRT (100 mg/kg), ME-BRT (200 mg/kg) significantly increased the PILS. While topotecan increased the life span of S-180-AC 78.57%, ME-BRT (100 mg/kg) increased it by 57.14% and 71.42 % ME-BRT (200 mg/kg) respectively. So ME-BRT at dose 100 and 200 mg/kg significantly improved the overall survival of all treated animals and topotecan was not significantly differed from each other in improving the overall survival of S-180-AC. Both extracts displayed a significant inhibition of tumour growth at doses of 100 and 200 mg/kg with values of 81.90 and 88.33%, respectively, with no mortality, compared standard drug topotecan (95.94%).

**Key words:** HPLC-MS, Molecular docking, S-180-AC, antitumor activity etc.

### **Distillation: The Ancient Skilled Workmen**

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**Abstract:** Distillation is a method of separating mixture based on differences in volatilities of components in a boiling liquid mixture. Distillation is basically carried out in three ways: Differential or simple distillation. Rectification or fractionation. Flash or equilibrium distillation. The Flash Distillation model is normally carried out either continuously or in batches. In this method, a liquid mixture is partially vaporized, the vapor and liquid are allowed to attain equilibrium and finally withdrawn separately. Material balance in a Flash distillation column is-

$$[\text{accumulation}] = [\text{in}] - [\text{out}] + [\text{generation}] - [\text{consumption}]$$

The flash distillation is used on a large scale in petroleum industry in which petroleum sections are heated in pipe stills and the heated fluid flashed into overheated vapor and residual liquid streams

**Key words:** Distillation, rectification, flash distillation

### **Rheumatoid Arthritis**

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**Abstract:** Rheumatoid arthritis is the most common inflammatory arthritis and is a major cause of disability. It existed in early native American populations several thousand years ago. T-cell mediated antigen-specific responses; T-cell independent cytokine networks and tumor like behavior of rheumatoid synovium have also been implicated. More recently, the contribution of autoantibodies has returned to the forefront. Based on the pathogenic mechanisms, specific therapeutic interventions can be designed to suppress synovial inflammation and joint destruction in rheumatoid arthritis.

**Keywords:** Rheumatoid arthritis, inflammatory arthritis

### **Epilepsy Disease Diagnosis Treatment**

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**Abstract:** Epilepsy is a neurological disorder that affects the central nervous system and brain. The patient may have periods of unusual behavior, seizures, sensation and loss of consciousness. Anyone can develop epilepsy, but it's more common in young children and older adults. It occurs slightly more in males than in females. Causes and Symptoms of Epilepsy: Major Epilepsy causes are chronic illness, problems during delivery, tumors, brain injury, infections of the brain and abnormal brain development. There are several reasons you might have a seizure. These include: high fever, very low blood sugar, head trauma and even alcohol withdrawal. Seizures are the main symptom of epilepsy. Epilepsy symptoms includes changes to sense of smell, taste, sight, hearing,

touch, dizziness, tingling and twitching of limbs, sudden jerks in arms. Other symptoms include: staring blankly, performing repetitive movements, unresponsiveness, strange feeling, stiffness in muscles, sudden blackout & fainting, twitching or trembling of muscles.

**Keywords:** Epilepsy, central nervous system, seizures

## **Pharamkokinetic Parameters in Pregonancy**

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**Abstract:** Pregnancy is state in which changes in maternal physiology have evolved to favour the development and growth of placenta and foetus. The variations in physiology may alter the pharmacokinetics that determine drug dosing and effect. Various pharmacokinetic factors are necessary to achieve effective treatment and limit maternal foetal risk. Over two-thirds of women receive prescription drugs while pregnant, within treatment and dosing strategies. It follows that detailed pharmacologic information is required to adjust therapeutic strategies during pregnancy. The adaptations during pregnancy may effect pre-existing disease or result in pregnancy.

**Key words:** pregnancy, phamakokinetics

## **Needle Free Injection**

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**Abstract:** The term needle free is used to describe an extensive range of technologies that do not have a needle but make use of electrophoresis to derive drugs through the skin. Needle free devices can take the forms of power sprays, edible products inhalers and skin patches. Devices are available in reducible and disposable forms, for home or physicians office use and also in variations for multiple patients and institutional uses. This technology avoids various disadvantages that are associated with needle use, needle phobia, injection site pain. Needle free drug delivery was first projected in the early 19<sup>th</sup> century. The first needle free injection was present in the form of air powdered devices were developed during the 1940s and 1950s.

**Keywords:** Needle Free Injection, electrophoresis, skin, pain

## **Paper Chromatography—An Overview**

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**Abstract:** Paper chromatography is an analytical method used to separate coloured chemicals or substances. A paper chromatography variant, two dimensional chromatography involves using two solvents and rotating the paper 90° in between. These are useful in separating complex mixtures of compounds having similar polarity for example Aminoacids. In this method testing the purity of compounds and identifying substances because it is relatively quic and requires only small quantities of materials. Seperation in paper chromatography involves the same principles in thin layer chromatography. In paper chromatography, substances are distributed between a stationary phase and mobile phase. The stationary phase is the water trapped between the cellulose of the

fibres of the paper. The mobile phase is a developing solution that travels up the stationary phase, carrying the samples with its components of the sample will separate readily according to how strongly they absorb onto the stationary phase versus how readily they dissolve in mobile phase.

**Keyword:** Dimension polarity, Identifying, Trapped, Readily, Developing.

### **Angina Pectoris –An Overview**

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**Abstract:** Angina pectoris is usually due to obstruction or spasm of the coronary arteries. Other causes includes anemia, abnormal heart rhythms and heart failure there is a weak relationship between severity of pain and degree of oxygen deprivation in the heart muscle worsening angina attack sudden onset angina at rest, & angina lasting more than 15 minutes are symptoms of unstable angina. Angina usually causes uncomfortable pressure, fullness, squeezing or pain in the center of the chest. You may also feel the discomfort like heart burn, lung infection or inflammation. Severely narrowed arteries may allow enough blood to reach the heart when the demand for oxygen is low, such as when you're sitting. But with physical exertion like walking up a hill/ climbing stairs the heart works harder & needs more oxygen.

**Keywords:** Coronary arteries, Heart burn, Squeezing, Oxygen.

### **Epilepsy Disease Diagnosis Treatment**

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**Abstract:** Epilepsy is a neurological disorder that affects the central nervous system and brain. The patient may have periods of unusual behaviour, seizures, sensation and loss of consciousness. Anyone can develop epilepsy, but it's more common in young children and older adults. It occurs slightly more in males than in females. Causes and Symptoms of Epilepsy. Major Epilepsy causes are chronic illness, problems during delivery, tumour, brain injury, infections of the brain and abnormal brain development. There are several reasons you might have a seizure. These include: high fever, very low blood sugar, head trauma and even alcohol withdrawal. Seizures are the main symptom of epilepsy. Epilepsy symptoms includes changes to sense of smell, taste, sight, hearing, touch, dizziness, tingling and twitching of limbs, sudden jerks in arms. Other symptoms include: staring blankly, performing repetitive movements, unresponsiveness, strange feeling, stiffness in muscles, sudden blackout & fainting, twitching or trembling of muscles.

**Keywords:** Epilepsy, Diagnosis, consciousness

### **Effect on Anti Diabetic of Kernel Seeds of Apricots on Male Wister Rats**

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**Abstract:** Apricots are a sweet summer-fruit staple and a wonderful addition to your diabetes meal plan. One apricot has just 17 calories and 4 g of carbohydrates. Four fresh apricots equal one serving and provide more than 50 percent of your daily vitamin A requirement. These fruity jewels are also a good source of fiber. Try mixing some diced fresh apricots into hot or cold cereal, or toss some in a salad. In this study alloxan induced diabetic activity model rat was used.

Alloxan forms an increased glucose levels that generates diabetes. Pretreatment with *apricot kernal* extract produced significant decrease in glucose levels indicating the protective effect of tissue. On alloxan treatment a dose dependent decrease in glucose levels were observed. Pretreatment with *apricot kernal* extract and metformin produced significant alteration in levels.

**Keywords:** apricot kernal, diabetic activity, wistar rats etc

## **Electrochemicalbiosensors in Pharmaceutical Analysis**

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**Abstract:** Given the increasing demand for practical and low-cost analytical techniques, biosensors have attracted attention for use in the quality analysis of drugs, medicines, and other analytes of interest in the pharmaceutical area. Biosensors allow quantification not only of the active component in pharmaceutical formulations, but also the analysis of degradation products and metabolites in biological fluids. Thus, this article presents a brief review of biosensor use in pharmaceutical analysis, focusing on enzymatic electrochemical sensors.

Uniterms: Biosensors. Pharmaceutical analysis. Electrochemical sensors. Enzymes.

**Keywords:** Electrochemicalbiosensors, Pharmaceutical, Analysis, biosensors

## **Progeroid Syndrome**

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**Abstract:** Progeria is characterised by clinical features that mimic premature ageing. Although the mutation responsible for this syndrome has been deciphered, the mechanism of its active remains elusive. The term progeroid syndrome does not necessarily imply progeria (HUTCHISON Gil ford progeria syndrome)

**Keywords:** Progeroid, Syndrome, ageing, mutation

## **Bio Chipping Technology**

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**Abstract:** Brain implants or neural implants, are technological devices that connect directly to a biological subject's brain – usually placed on the surface of the brain, or attached to the brain's cortex. The purpose of modern brain implants is to insert chips in the areas of the brain that have become dysfunctional after a stroke or other head injuries. There are many other bio chips that can be implanted in the eye to restore functional vision in the partial or totally blind people.

**Keywords:** Brain, chips, implants

## **Can Oil Reduce the Diabetes**

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**Abstract:** Diabetes is the very common problem in the entire world. In world approximately 422 million people are suffered with this problem. several treatments are available for treating the diabetes but all are comes under the synthetic medication those are insulin, oral hypoglyceamics etc. but recent technologies some oils also have the property to cure the diabetes that is “canola oil” branded name of the oil is “ wagga wagga”. Canola oil is made from the rapeseed bred to be low in erucic acid from the brassicaceae family of plants, or to the plants namely brasiuca napus, brassica rapa, and brasicca juncea. Canola was developed through conventional plant breeding from rapeseed, rapeseed contains more amount i.e 50% of erucic acid in conventional breeding they reduce the erucic acid upto 2%. Canola seed is traditionally processed using solvent extraction in order to separate the oil from the meal.this process, called pre –press solvent extraction. Canola oil contain oleic acid, linoleic acid, saturated fatty acids, palmitic acid stearic acid , erucic acid due to presence of this constituents reduces the type-2 diabetes and reduces the risk of coronary heart diseases. Canola oil reduces the glycemic load of our meal by allowing a gradual release of blood sugar instead of a sudden spike. Type 2 diabetes does not dependent on insulin, so reducing blood sugar levels by using other drugs .by taking of this oil it controls cholesterol and reduces sudden increase of glucose levels in blood

**Keywords:** Diabetes, synthetic medication, canola oil, wagga wagga

## **Robotics in Medicine**

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Medical robotics is an interdisciplinary field that focuses on developing electromechanical devices for clinical applications. The goal of this field is to enable new medical techniques by providing new capabilities to the physician or by providing assistance during surgical procedures. Medical robotics is a relatively young field, as the first recorded medical application occurred in 1985 for a brain biopsy. It has tremendous potential for improving the precision and capabilities of physicians when performing surgical procedures, and it is believed that the field will continue to grow as improved systems become available. This chapter offers a comprehensive overview about medical robotics field and its applications.

**Keywords:** Medical, robotics, clinical, medical, application

## **Plasma Proteins Drug Binding**

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**Abstract:** In spite of the large amount of plasma protein binding data for drugs, it is not obvious and there is no clear consensus among different disciplines how to deal with this parameter in multidimensional lead optimization strategies. In this work, we have made a comprehensive study on the importance of plasma protein binding and the influencing factors in order to get new insights for this molecular property. Our analysis of the distribution of percentage plasma protein binding among therapeutic drugs showed that no general rules for protein binding can be derived, except for the class of chemotherapeutics, where a clear trend towards lower binding could be observed. For the majority of indication areas, however, empirical rules are missing. We present here an extensive list of multiply determined primary association constants for binding to human serum albumin (HSA) for 138 compounds from the literature. Correlating these binding constants with the percentage fraction of protein bound showed that the percentage data above 90%, corresponding to a binding constant below 6 microM, are of insufficient accuracy. Furthermore, it could be demonstrated that the lipophilicity of drugs, traditionally felt to dominate binding to HSA, is not the only relevant descriptor. Here, we report a generic model for the prediction of drug association constants to HSA, which uses a pharmacophoric similarity concept and partial least square analysis (PLS) to construct a quantitative structure-activity relationship. It is able to single out the submicromolar to nanomolar binders, i.e. to differentiate between 99.0 and 99.99% plasma protein binding. Depending on the system, this can be important in medicinal chemistry programs and may together with other computed physicochemical and ADME properties assist in the prioritization of synthetic strategies.

**Keywords:** plasma, protein, binding, therapeutic

## **Black Seeds (*Nigella Sativa*)**

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**Abstract:** *Nigella sativa* seeds have wide therapeutic effects and have been reported to have significant effects against many ailments such as skin diseases, jaundice, gastrointestinal problems, anorexia, conjunctivitis, dyspepsia, rheumatism, diabetes, hypertension, intrinsic hemorrhage, paralysis, amenorrhea, anorexia, asthma, cough, bronchitis, headache, fever, influenza and eczema. Thymoquinone (TQ) is one of the most active constituent and has different beneficial properties. Focus on antimicrobial effects, different extracts of *N. sativa* as well as TQ, have a broad antimicrobial spectrum including Gram-negative, Gram-positive bacteria, viruses, parasites, and fungi. The effectiveness of *N. sativa* seeds and TQ is variable and depends on species of target microorganisms. The present review paper tries to describe all antimicrobial

activities that have been carried out by various researchers.

**Keywords:** *Nigella sativa*, ailments, dyspepsia, therapeutic effects

### **Self Emulsifying Drug Delivery System**

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**Abstract:** Self emulsifying drug delivery systems (SEEDS) to improve the oral bio availability of purely aqueous soluble drugs. The aim of present work was to develop and evaluate solid emulsifying drug delivery system (SEEDS) for oral water soluble drugs. SEEDS are the isotropic mixtures of oil, surfactant and co solvent can be used for the design of formulations in order to improve the oral absorption of highly lipophilic drug compounds. It can be orally administered in soft or hard gelatin capsules. Principle characteristic of the systems is their ability to form fine oil-in-water (O/W) emulsions or micro emulsions upon mild agitation provided by gastric mobility. Many parameters like surfactant concentration, oil/surfactant ratio, and polarity of emulsion, droplet size, particle size distribution and zeta potential were carried out to conform the stability of the formed SEEDS. The prepared formulation has a significant improvement in terms of drug solubility

**Keywords:** emulsifying, surfactant, parameters

### **Insulin Patches**

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**Abstract:** Insulin patches are currently an experimental form of insulin delivery that are at an early stage of research. An insulin patch aims to painlessly deliver insulin through the skin similar to how transdermal patches such as nicotine patches or muscle pain relief patches work. If insulin patches can be successfully developed, it would present the chance for people on insulin therapy to take insulin without needing to put needles or cannulas (the very thin tube that delivers insulin into the body from insulin pumps) into the body. An insulin patch works by being placed on the skin and agents within the patch help insulin to pass through the skin and then into blood stream. An insulin patch contains a set dose of insulin that is absorbed over a number of hours. Different types of insulin patches have been developed to release insulin more quickly to counteract rises in blood sugar following meals (bolus insulin patches) and other insulin patches have been developed to counteract the gradual release of glucose through the day by the liver (basal insulin patches).

**Keywords:** Insulin patches, insulin delivery

## **Monoclonal Antibodies**

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**Abstract:** The most significant recent advances in the application of monoclonal antibodies (mAbs) to oncology have been the introduction and approval of bevacizumab (Avastin), an anti-vascular endothelial growth factor antibody, and of cetuximab (Erbix), an anti-epidermal growth factor antibody. In combination with standard chemotherapy regimens, bevacizumab significantly prolongs the survival of patients with metastatic cancers of the colorectum, breast and lung. Cetuximab, used alone or with salvage chemotherapy, produces clinically meaningful anti-tumor responses in patients with chemotherapy-refractory cancers of the colon and rectum. In addition, the anti-HER2/neu antibody trastuzumab (Herceptin), in combination with standard adjuvant chemotherapy, has been shown to reduce relapses and prolong disease-free and overall survival in high-risk patients after definitive local therapy for breast cancer. These exciting recent results provide optimism for the development of mAbs that bind novel targets, exploit novel mechanisms of action or possess improved tumor targeting. Progress in the clinical use of radioimmunoconjugates remains hindered by complexity of administration, toxicity concerns and insufficiently selective tumor targeting.

**Keywords:** monoclonal antibodies, growth factor, Cetuximab

## **Design and characterization of Aceclofenac matrix tablets**

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**Abstract:** Colonic delivery refers to targeted delivery of drugs into the lower GI tract, which occurs primarily in the large intestine (i.e. colon). The site-specific delivery of drugs to lower parts of the GI tract is advantageous for localized treatment of several colonic diseases. Targeting of drugs to the colon by the oral route could be achieved by different approaches including matrix and coated systems, for which the drug release is controlled by the gastrointestinal pH, transit times or intestinal flora. The aim of the present study is to develop colon targeted matrix tablets of Aceclofenac using HPMC K 15 M, Carbopol 936 and SCMC polymers as matrix forming agents. The tablets were prepared by wet granulation method. Prepared matrix tablets were evaluated for various parameters like Weight variation, diameter, thickness, hardness, Friability, swelling index and were subjected to *in-vitro* drug release studies. All formulations show satisfactory results. Among 10 formulations AMT 5 shows maximum desired release, 98.65% over the period of 12hr. Thus, aceclofenac matrix tablets prepared by using HPMC K 15 M were successfully developed and mechanism of drug release was by zero order kinetics

**Key Words:** Aceclofenac, HPMC K 15 M, Carbopol 936 and SCMC.

## **Prevalence, risk factors and Prescribing Pattern for respiratory distress syndrome in a Tertiary Level Neonatal Intensive Care Unit**

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**Abstract:** Acute respiratory distress syndrome (ARDS) is a permeability pulmonary edema characterized by increased permeability of pulmonary capillary endothelial cells and alveolar epithelial cells, leading to hypoxemia that is refractory to usual oxygen therapy. It is a major cause of acute respiratory failure. Its development leads to high rates of mortality, as well as short- and long-term complications, such as physical and cognitive impairment. So, without mechanical ventilation most patients would die. A prospective observational study was carried out for neonates. The data regarding patient demographics,maternal type of delivery,risk factors(lack of Surfactant,caesarian delivery, prematurity,maternal diabetes) and their prescribing pattern of drugs was collected daily in a structured proforma. Collected data was subjected to statistical analysis. Out of total 250 neonates 62% of neonates are of preterm and 38% are of full term. The majority of neonates Prescribed with Neb.Levolin,1-2 antibiotics,Vit-k injection, calcium gluconate injection. Antibiotics include Cefixime (or) ceftriaxone, Amikacin sulphate,piperacillin citrate and tazobactam. In conclusion, the results of the present investigation show that the discussed risk factors were mostly effected and this condition should be counselled to every mother and preventive measures should be taken into consideration as this condition may lead to mortality. These findings have important clinical implications for the diagnosis and treatment of neonatal RDS.

**Key words:** Respiratory distress syndrome, neonates, risk factors.

## **PHARMACOGENOMICS An Overview**

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**Abstract:** Pharmacogenomics aims to develop rational means to optimize drug therapy, with respect to the patients' genotype, to ensure maximum efficacy with minimal adverse effects. Pharmacogenomics is the study of the role of the genome in drug response. Its name (pharmaco- + genomics) reflects its combining of pharmacology and genomics. The aim is to use the genome sequence data to effectively make decisions in order to minimise the negative impacts on a patient or the health industry in general. A large amount of research in the biomedical sciences regarding Pharmacogenomics as of late stems from combinatorial chemistry, genomic mining and high throughput screening. In order for the field to grow, rich knowledge enterprises and business must work more closely together and adopt simulation strategies. more commonly known applications of pharmacogenomics improve drug safety, and reduce ADRs,Tailor treatments to meet patients' unique genetic pre-disposition, identifying optimal dosing, Improve drug discovery targeted to human disease and improve proof of principle for efficacy trials.

**Keywords:** Pharmacogenomics, genomicmining.

## **Pharmaceutical Technology Transfer**

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**Abstract:** A proper technology transfer (TT) is both essential and important to drug discovery and development for new medicinal products. It is also required to upgrade drug quality planned during research development and to final product during manufacturing as well as to guarantee that stable quality is transferred. In pharmaceutical industry, technology transfer is very important for the better growth of the firm by setting business, interest in the profitable exploitation, through technology transfer, the knowledge increases by transferring the technology between department inside a firm and firm to firm (small scale to large scale). Successful transfer needs a good relationship between transfer and receiver. It is a continuous information exchange between both the parties to maintain the product manufacturing.

**Keywords:** technology transfer (TT), pharmaceutical industry, profitable exploitation

## **Formulation And Evaluation Of Immediate Release Metoprolol Tartarate Tablets**

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**ABSTRACT:** Microparticulate floating dosage forms provide us with new and important therapeutic options. In the present study, a gastroretentive microparticulate system of an NSAID, capable of floating on simulated gastric fluid for more than 12 hours was formulated by solvent evaporation technique. Biocompatible polymers like Ethyl cellulose and were used along with the drug in different proportions.. The formulated microspheres were free flowing with good packability characteristics. Practical yield of the microspheres was up to 89%. Encapsulation efficiencies of upto 96% were achieved. Scanning electron microscopy confirmed their porous and spherical structure and the particles were of the size range of 300-750  $\mu\text{m}$ . The microspheres with Ethyl cellulose showed higher buoyancies. *In vitro* release of the drug showed a biphasic release pattern with a controlled release of ~ 12 hours with Ethyl cellulose. Stability studies showed no significant change in the drug content in the formulations even after 3 months. The data obtained in this study thus suggests that a micro particulate floating dosage form of an NSAID can be successfully designed to give controlled drug delivery and improved oral bioavailability.

**Keywords:** NSAID; Bioavailability; Ethyl cellulose; Solvent evaporation technique.

## **A New Method Development And Validation Of Axitinib By Using UV-Visible Spectroscopy**

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### **ABSTRACT**

The objective of the present work was to develop a simple, efficient and reproducible spectrophotometric method for the quantitative estimation of Axitinib drug in its active pharmaceutical ingredient (API) form. The developed UV-Visible spectrophotometric method for the quantitative estimation of drug –Axitinib measurement of absorption at a wavelength maximum ( $\lambda_{\text{max}}$ ) of 336nm using dimethylsulphoxide (DMSO) and methanol, water (5:20:75) as diluents. The method was validated as per the ICH guidelines. The proposed method can be successfully applied for the estimation of Axitinib in pharmaceutical dosage forms. The linearity dynamic range 25-250  $\mu\text{g/ml}$  and effective mean percentage recoveries were 99.63% and LOQ,

LOD values of axitinib were found to be 0.62.

**KEY WORDS:** Axitinib, Method Development, Validation, UV-Visible spectrophotometry

### **A New Pharmaceutical Excipients in Solid Dosage Forms**

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**Abstract:** The objective of a medicinal formulation development project is to deliver drug to the patient in the required amount. at the required rate, consistently with a batch, from batch to batch, and over the products shelf life. To produce a drug substance in a final dosage form requires pharmaceutical ingredients. In selecting excipients for pharmaceutical dosage forms and drug products the development pharmacy should be certain that standards exist and are available assure the consistence quality and functioning of the excipient from lot to lot the development of new materials for use as pharmaceutical excipients requires the demonstration of the absence of toxicity and freedom from adverse reactions. The selection and testing of non active ingredients or excipient in the design of drug dosage form present to the formulator the challenge of productive fore sight. While the ability to solve problems when they occur is a valuable attribute, the ability to prevent the problem through adequate experimental design is a virtue. Newer excipients provide the means for simplifying formulation development, and improving overall operational cost while preserving the quality that is expected by the industry. The present review focus on search newer excipients which have proved their potential in developing efficient solid dosage forms.

Key words : Pharmaceutical excipients, Nonactive ingredients, Solid dosage form.

### **Formulation and Evaluation Of Immediate Release Metoprolol Tartarate Tablets**

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**ABSTRACT:** Metoprolol is a competitive. Metoprolol is an effective antagonist  $\beta$ -1 selective antagonist of the inotropic and chronotropic responses to isoproterenol. Metoprolol reduces the plasma renin activity in both normal subject and patient and inhibits the rise in renin activity induced by standings. Blockade of  $\beta$ -1 receptors resulting in reduction of heart rate and blood pressure is the main action of metoprolol. Metoprolol has been shown to reduce cardiac output and inhibits renin release. In comparison with non-cardio selective beta-blockers, metoprolol produces a small reduction in peripheral blood flow and a smaller increase in peripheral resistance and diastolic blood pressure in the presence of epinephrine or isoproterenol in both normal and hypertensive. Metoprolol being antihypertensive drug requires immediate plasma levels and hence the main aim the present work is to formulate and evaluate the Metoprolol immediate release tablets. Four formulations, M1, M2, M3 and M4 were prepared by using various super disintegrants and by following wet granulation method. The IR spectra revealed the compatibility of drug and excipients. From the results of the flow properties it was observed that the formulation is free flowing and can be compressed. Average weight of the tablet was found to be 321.76mg. Hardness was ranging from 3 to 4. All the other tablet properties were within the limits. The disintegration time was found to be between 10 to 14 minutes. Among the formulations, M3 was found to have 10minutes of disintegration time. The *invitro* % drug release was found to between 74% to 93% and the M3 formulation with carmellose as disintegrant was found to release 93% within 30minutes.

**KEYWORDS :**  $\beta$ -1 selective antagonist, super disintegrants, caramellose, disintegration time

## **RP-HPLC Method Development And Validation For Simultaneous Estimation Of Silodosin and Dutasteride By RP-HPLC Method**

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**ABSTRACT:** A new, simple, precise, rapid and accurate RP-HPLC (Reverse Phase – High Performance Liquid Chromatography) method has been developed for the simultaneous estimation of Silodosin and Dutasteride in bulk and in tablet formulations. The chromatographic separation was achieved on Waters e 2695 HPLC using Unison C<sub>18</sub>, 5 mm, 250 mm x 4.6 mm column maintained at ambient temperature with mobile phase, Buffer: Acetonitrile: Methanol (50:30:20 v/v/v), flow rate 1.0 ml/min, load volume 10  $\mu$ l and a run time of 12 min. The PDA detection was performed at 275 nm. Buffer was prepared with Dipotassium hydrogen phosphate and adjusted pH to 3.0 with Ortho-Phosphoric Acid. The retention time and mean recoveries obtained for Silodosin was 2.47 min and 100.1%, for Dutasteride was 10.98 min and 100.4% respectively. Linearity response was established over the concentration range of 50-150  $\mu$ g/ml for AT and 5-15  $\mu$ g/ml for AB. The correlation coefficient for AT and AB was 0.9992 and 0.9998 respectively. The recovery studies ascertained the accuracy of proposed method and the results were validated as per ICH guidelines. This novel method can be used for the routine quality control of both drugs in combination in tablet dosage form

**Key words:** Silodosin, Dutasteride, HPLC Method, Methanol, Validation.

## **Physicochemical Standardization and Formulation Development of Poly-herbal Tablet containing indigenous antidiabetic plants of Assam**

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**Abstract:** Diabetes is one of the leading health problems in the current world population. India is a poor country in which 92% populations having income less than 10000 INR per month and even nearly 75 percent of them survive on a monthly income of less than Rs 5,000. In this scenario, due to high cost of modern medicines, it is very difficult to do the treatment of diabetics for poor Indians. So, this kind of cost effective herbal formulation can help them. *Objective:* The present study is aimed to formulate and evaluate a cost effective antidiabetic herbal tablet using commonly available indigenous herbal antidiabetic plants (*Oryza sativa L.* var Joha Rice belongs to the family Poaceae, *Dillenia indica* belongs to the family Dilleniaceae and *Syzygium cumini*

var. or *Ugenia caryophyllifolia* (Lam.) belongs to the family Myrtaceae ) of Assam. **Material & Methods:** The plants materials were obtained from local area and authenticated by botanist and extracted using solvent ethanol. Pre-formulations studies were performed for powder blends. Drug excipients compatibility and microbiological limits were also evaluated. **Results:** All the tablets were prepared by using hand rotating single punch tablet punching machine and were evaluated for various tablet compression parameters, i.e. tab densities, bulk densities, an angle of repose, general appearance, weight uniformity, hardness, friability, and disintegration. All formulations are found to be nil or under the standard limit. **Conclusion:** The laboratory scale preparation of poly-herbal tablet may lead to a new potent and stable oral dosage formulations for DM and enlighten the area of synergistic action of herbs.

**Keywords:** *Oryza sativa L.* var Joha Rice, *Dillenia indica*, *Ugenia caryophyllifolia*, Antidiabetic tablet, polyherbal

### **Synthesis of Novel (R)-5-Bromo-3-(N-Methylpyrrolidine-2-yl-Methyl)-1H (Substituted)-Indole Derivatives as Potential COX-2 Inhibitors via Japp-Klingemann and Fischer Indole Cyclization Reactions**

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**Abstract:** A series of novel (R)-5-bromo-3-(N-methylpyrrolidine-2-yl-methyl)-1H (substituted)-indole (T1-T5) derivatives were synthesized by electrophilic substitution at 1<sup>st</sup> position of (R)-5-bromo-3-(N-methylpyrrolidine-2-yl-methyl)-1H-indole with various halides. The starting material (R)-5-bromo-3-(N-methylpyrrolidine-2-yl-methyl)-1H-indole was synthesized from 4-bromo aniline by multistep synthesis. The synthesized compounds were characterized by IR, <sup>1</sup>H NMR and MASS spectroscopy and newly synthesized compounds were evaluated for their analgesic activity by tail immersion technique using wistar albino mice. Among the synthesized compounds T3, T4, T5 have shown significant activity by tail immersion technique. Compound (R)- 5-bromo-1-ethyl-3-[(1-methylpyrrolidin-2-yl)methyl]-1H-indole (T3) emerged as the most potent analgesic agent and it is equipotent when compared to the reference standard diclofenac sodium.

**Keywords:** Indole derivatives; Analgesic activity; Tail immersion technique.

### **In Vitro Anti-Inflammatory activity of *Leportea crenulata***

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**Abstract:** **Aim:** To evaluate In Vitro Anti-Inflammatory activity of *Leportea crenulata*. **Materials:** Reaction mixture, egg albumin, phosphate buffer saline 6.4, Extracts, Ethanol, Diclofenac Sodium. **Method:** The reaction mixture (5ml) consist of 0.2 ml of egg albumin , 2.8 ml of

phosphate buffer saline(PBS, pH 6.4) and required amount of extract so that final concentration became 70, 100, 150 µg/ml. A similar volume of ethanol served as the control. Next, the mixture were incubated at  $37 \pm 2^\circ\text{C}$  in a BOD incubated for 15 min and then heated at  $70^\circ\text{C}$  for 5 min. After cooling, their absorbance was measured at 660 nm by using vehicle as a blank. Diclofenac sodium in the final concentration of (70, 100, 150 µg/ml) was used as the reference drug and treated similarly for the determination of absorbance. The percentage inhibition of protein denaturation was calculated by using the following formula: % Inhibition=  $\{1 - V_t / V_c\} \times 100$ ;  $V_t$ : Absorbance of test,  $V_c$ : Absorbance of control. **Results:** As part of the investigation on the mechanism of the anti-inflammation activity, ability of plant extract to inhibit protein denaturation was studied. It was effective in inhibiting heat induced albumin denaturation. Maximum inhibition 64.77 % was observed at 150 µg/ml. **Conclusion:** *Leptotea crenulata* shows moderate anti-inflammatory activity. Based on the results, it can be reasonably concluded that for better development more research and further more studies can be done in this aspects.

**Keywords.** Protein denaturation , Egg albumin, Absorbance

### **Formulation and Evaluation Of Orodispersible Tablet**

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**ABSTRACT:** Patient compliance is one of the most important aspects in the pharmacy practice. In the pharmaceutical industry Oral delivery is currently regarded as the gold standard as it is safest, most convenient and most economical method of drug delivery. Tablet is the most popular among all dosage forms existing today because of its convenience of self administration, high level of patient compliance and low cost. Difficulties of swallowing and first-pass metabolism are of the major limitations of oral medicaments resulting in patient non-compliance and poor oral bioavailability. A variety of drugs can be administered in the form of OD tablets as they give the advantage of the liquid medication in the solid preparation. Orodispersible - or mouth dissolving tablets have been formulated for pediatric, geriatric, and bedridden patients and for active patients who are busy and traveling and may not have access to water. Technologies used for manufacturing of orally disintegrating tablets are either conventional technologies or patented technologies. In conventional freeze drying, tablet molding, sublimation, spray drying etc. and in patented technology such as Zydis, Orasolv, Durasolv, Wowtab and Flashdose technology are important. Important ingredients that are used in the formulation of ODTs should allow quick release of the drug, resulting in faster dissolution. This research describes the various formulation aspects, Superdisintegrants employed and technologies developed for Orodispersible tablets.

**Key words:** Orodispersible tablets, Superdisintegrants, Zydis, Orasolv, Durasolv technology.

### **Antifertility Activity Of Some Plant Extracts**

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#### **Abstract**

Some medicinal plants used as antifertility agents in females throughout the world by various tribes and ethnic groups. We undertook an extensive bibliographic review by analyzing classical text books and peer reviewed papers, and further consulting well accepted worldwide scientific databases. We performed CENTRAL, Embase, and PubMed searches using terms such as “antifertility”, “anti-implantation”, “antiovulation”, and “antispermatogenic” activity of plants. Plants, including their parts and extracts, that have traditionally been used to facilitate antifertility have been considered as antifertility agents. In this paper, various medicinal plants have been reviewed for thorough studies such as Polygonum hydropiper Linn, Citrus limonum, Piper nigrum Linn, Juniperis communis, Achyranthes aspera, Azadirachta indica, Tinospora cordifolia, and Barleria prionitis. Many of these medicinal plants appear to act through an antizygotic mechanism. This review clearly demonstrates that it is time to expand upon experimental studies to source new potential chemical constituents from medicinal plants; plant extracts and their active constituents should be further investigated for their mechanisms. This review creates a solid foundation upon which to further study the efficacy of plants that are both currently used by women as traditional antifertility medicines, but also could be efficacious as an antifertility agent with additional research and study

**Keywords:** Antifertility, Polygonum hydropiper, Indole derivatives; Analgesic activity; Tail immersion technique.

### **Recently Discovered Organ Inside Human Body – Mesentery**

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**ABSTRACT:** The system study of mesentery is now possible because clarification of its structure. Although this area of science is in an early phase, important advances have already been made and the opportunities uncovered. For example, distinctive anatomical and functional features have been revealed that justified designation of the mesentery of an organ. Accordingly, the mesentery should be subjected to the same investigatory focus that is applied to the other organs and systems. In this presentation, I summarise the findings of the scientific investigation of mesentery so far and explore its role in human diseases. I aim to provide a platform from which to direct future of scientific investigation of the human mesentery in health and disease. The parietal peritoneum lines the anterior, lateral and posterior walls of the peritoneal cavity. The deepest portion of the peritoneal cavity is the pouch of Douglas in women and the retro vesicle space in men, both in the upright and the supine position. The mesentery is a double fold of the peritoneum.

**Key words:** Mesentery, Advances, Opportunities, Designations, Investigators, Summarize, Human disease, Peritoneum, Pouch of Douglas, Retro vesicles.

## **Method Development and Validation Of Sofosbuvir In Bulk And Pharmaceutical Dosage Form By Using Rp-Hplc Method**

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**ABSTRACT:** A simple, sensitive RP-HPLC method for the determination of sofosbuvir in bulk and pharmaceutical dosage form. Chromatographic determination was performed in a reverse phase X-Bridge C18 Column (150mm X 4.6, 5 $\mu$  Particle size) using a mixture of Phaspate buffer pH 2.5:Methanol:Acetonitrile (50:35:15 V/V) as mobile phase and delivered at a flow rate of 0.8 ml/min. The UV detection was set at 261 nm. The retention time of Sofosbuvir was 3.513 and total run time was 6 Minutes.

**Key words:** Sofosbuvir, HPLC Method, Methanol, Validation.

## **Formulation And Evaluation Of Sublingual Tablets Of Glibenclamide**

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**ABSTRACT:** An oral solid dosage form should ideally disperse into the primary particles from which it was prepared. Tablets and capsules which need rapid disintegration, the inclusion of the right disintegrant is a prerequisite for optimal bioavailability. Superdisintegrants are used to improve the efficacy of solid dosage forms. This is achieved by decreasing the disintegration time which in turn enhances drug dissolution rate. The present study comprises the effect of superdisintegrants which are being used in the formulation to provide the safer, effective drug delivery with patient's compliance. Glibenclamide, a sulphonyl urea is a poorly water soluble orally active hypoglycemic agent, with problems of bioavailability indicating extensive first pass metabolism in liver. In view of substantial first pass effect and shorter elimination half-life, this work investigated the possibility of developing Glibenclamide tablets allowing fast and complete drug dissolution by using three superdisintegrants namely Crosspovidone, Crosscarmellose and Sodium starch glycolate in different concentrations. Tablets were prepared by direct compression method and evaluated for weight variation, hardness, friability, disintegration time and dissolution rate and results were found to be within standard limits. Among all the six formulations, F6 was found to be fast dissolving formulation on basis of %drug release, disintegration time & wetting time.

**Keywords:** Hypoglycemic agent, sodium starch glycolate, crosspovidine, crosscarmellose, direct compression method.

## **Pharmacognostical evaluation of Indian *Asparagus officinalis* Linn Family Lamiaceae**

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**ABSTRACT:** *Asparagus officinalis* is an erect, unarmed, branched herbaceous perennial herb. It is considered one of the most important vegetable crops in some Asian, African, European and

American countries. *Asparagus* is one of the most nutritionally well balanced vegetables in existence, which is high in folic acid, thiamin, vitamin B6, rutin. Traditionally, the plant is used for the Prevention of kidney and bladder stones, Dropsy, Rheumatic conditions, Liver disease, Bronchial asthma and gout. The pharmacognostic parameters were studied for identification of species through macro and microscopical, physicochemical, phytochemical screening. The plant is characterized by scale-like leaves; scales are very minute, the cladodes fascicled, 0.5 to 1.5 centimeters long and rudimentary, rootstock creeping, thick, tuberously swollen, and short-jointed. Stems (ferns) are with much branched feathery foliage. The anatomy of the root shows presence of covering trichomes and stem showed glandular trichomes. The trichomes which were present on the surface are sessile, quadricellular heads, unicellular stalk with 2 to 4 celler glandular head. The preliminary phytochemical chemical tests showed the presence of, alkaloids, flavonoids, phenolic compounds, steroids, amino acids and proteins. Powdered microscopy shows the presence of large number of vessel elements either entire or fragments.

**Keywords:** *Asparagus officinalis*, Phytochemical screening, Cladodes, Glandular trichomes, Saponins, Flavanoids.

### **GENERIC DRUGS Vs BRAND DRUGS**

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**ABSTRACT:** Generic drugs are equivalent to the brand formulation if they have the same active substances, the same pharmaceutical form and the same therapeutic indications and a similar bioequivalence respect to the reference medicinal products. The use of generic medicines is indicated from many countries in order to reduce medication price. However some points, such as bioequivalence and the role of excipients, may be clarified regarding the clinical efficiency and safety during the switch from brand to generic formulations. In conclusion, the use of generic drugs could be related with an increased days of disease (time to relapse) or might lead to a therapeutic failure, on the other hand, a higher drug concentration might expose patients to an increased risk of dose dependent side - effects.

**Keywords:** Antibiotics, bioequivalence, brand, clinical efficiency, generic safety.

### **Artificial Blood- An Alternative Approach**

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**ABSTRACT:** Artificial blood is a product made to act as a substitute for red blood cells. The artificial blood is made from a plastic, it is light to carry and easy to store. It is made of plastic molecules that have an iron atom as the basics, like haemoglobin, that carry oxygen. It is derived from human and animal blood cells. Depending on the type of artificial blood, it can be produced in different ways using synthetic production, chemical isolation, recombinant biochemical technology, molecular assemblies technology.

**Keywords:** Artificial blood, red blood cells, plastic

### **Electronic Aspirin**

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**ABSTRACT:** The ATI (Autonomic Technological Inc.) Neurostimulation system, commonly known as electronic aspirin, is a fairly recent development in the biomedical field, introduced within this past year. The aim is to prevent severe headaches and facial pain for victims of cluster headaches or migrains not sufficiently treated with prescription are more generally known as reactive oxygen species (ROS) and reactive nitrogen species (RNS). Over production of (ROS) results in oxidative stress, induces a cellular redox imbalance which has been found to be present in various cancer cells compared with normal cells ;the redox imbalance thus may be related to oncogenic stimulation. To overcome the free radicals causing cancer disease, we are going to use antioxidants. Antioxidants have extra electron that can give to free radicals.

**Keywords:** Cancer, Oxidative stress, DNA damage, Protein damage, Reactive oxygen species, Anti-oxidants.

### **Critically Endangered Medicinal Plants And Their Conservation**

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**ABSTRACT:** India has a very rich plant biodiversity, many of which are medicinally useful. Human beings have been using plants as medicine for as long as we have existed on Earth. However, because there have been many more people that are now using plants in recent years. The rich resource is disappearing at an alarming rate as a result of over-exploitation. Some of endangered species are Ginkgo biloba, Swertia chirata, Gymnema sylvestre, Tinospora cordifolia, Celastrus paniculata, Tylophora indica, Bacopa monnieri, Rauwolfia serpentine etc. Already about 15,000 medicinal plant species may be threatened worldwide. Experts estimate that the earth is losing atleast one potential major drug every two years. Therefore, the management of traditional medicinal plant resources has become a matter of urgency. Organizations and governments are rising to meet this challenge through the global convention on biological diversity the convention on international trade in endangered species. Scientists and policymakers are proposing new procedures & policies to safeguard our remaining medicinal treasures in the wild so that they can protect this and future generations. Tissue culture technology is also one of potent and has opened extensive areas of research for biodiversity conservation. Internationally *IUCN* is working in the field of nature conservation and sustainable use of natural resources. The mission of *IUCN* is to influence, encourage and assist societies throughout the world to conserve nature and to ensure that any use of natural resources is equitable and ecologically sustainable. The conclusion of present presentation is to initiate and support for conservation, management & sustainable uses of medicinal plants for human and livestock health care and to promote in-situ conservation and sustainable uses of medicinal plants in and around site of global significance.

**KEYWORDS:** Endangered species, over-exploitation, conservation, *IUCN*, biodiversity.

## **Protein Therapeutics**

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**ABSTRACT:** Pharmacogenetic studies have traditionally focused on genes involved in processes that affect the pharmacokinetics of small-molecule drugs, such as drug metabolism. However, attention is shifting to the effects of genetic variations in drug targets and associated pathway components on drug responses. We describe how these variations are important for understanding differences in responses to the growing number of protein therapeutics that are entering clinical practice. Pharmacogenetic studies of these drugs are surveyed, and issues important to the success of such endeavours are discussed. As novel protein therapeutics are introduced, we anticipate that the use of pharmacogenetics will assume a key role in their development and clinical application.

**Keywords:** Pharmacogenetic, drug responses, drug metabolism

## **Respiratory System: An Overview**

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**ABSTRACT:** The respiratory system (also respiratory apparatus, ventilatory system) is a biological system consisting of specific organs and structures used for gas exchange in animals and plants. The anatomy and physiology that make this happen varies greatly, depending on the size of the organism, the environment in which it lives and its evolutionary history. Some of the disorders of respiratory system includes Airway obstructive disease, Pulmonary restrictive diseases, Vascular diseases, Primary & Secondary cancers.

**KEY WORDS:** Alveoli, Bronchus, Asthma, Chronic Obstructive Pulmonary Disorder.

## **Alkaptonuria**

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**ABSTRACT:** Alkaptonuria is a hereditary disease resulted from accumulation of homogentisic acid within the body due to deficiency of homogentisic acid oxidase. The main clinical feature is dark brown color of urine caused by high urinary output of homogentisic acid. There are no other symptoms or signs of the disease until the fourth decade of life when ochronosis is developed. Life-long accumulation of abnormal metabolites becomes overt in form of severe spondylosis, peripheral arthropathy, tendon rupture, bone osteoporosis as well as aortic valve stenosis and skin pigmentation. The features of the disease associated with affinity to homogentisic acid to the connective tissue and its effect on collagen structure. Only symptomatic treatment is applied in case of alkaptonuria and ochronosis.

**Keywords:** Alkaptonuria, ochronosis, homogentisic acid oxidase

## **PROGERIA**

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### **ABSTRACT:**

Progeria is a rare and combination of dwarfism and premature aging. The incidence is one in several million birth. Though the clinical presentation is usually typical, conventional radiological and biochemical investigations help in confirming the diagnosis. Progeria is also known as Hutchinson-Gilford Progeria Syndrome (HGPS. Progeria is a rare, fatal, “premature aging” syndrome. Although most babies with Progeria are born looking healthy, they begin to display many characteristics of accelerated aging by 18-24 months of age, or even earlier. Children with Progeria die of atherosclerosis (heart disease) or stroke at an average age of 13 years (with a range of about 8-21 years). Progeria is a genetic disorder. In 2016, said the Progeria Research Foundation (PRF). Medical experts said India now has seven reported cases of HGPS and potentially 66 unreported cases. Treatment to cure progeria in mice has given positive results and in human it has given negative results.

Keywords: Progeria, Hutchinson-Gilford Progeria Syndrome

## **Bilayered Tablet Technology**

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**ABSTRACT:** Bi-layer tablet is a new era for winning development of controlled release formulation along with various features to provide successful drug delivery. Bi-layer tablets can be crucial option to avoid chemical incompatibilities between active pharmaceutical ingredients (APIs) by physical separation and to facilitate the development of different drug release profiles. Bi-layer tablet is appropriate for chronological release of two drugs in combination and also for sustained release of tablet in which one layer is for immediate release as loading dose and second layer is maintenance dose. So use of bi-layer tablets is a very different aspect for anti-hypertensive, diabetic, anti-inflammatory and analgesic drugs where combination therapy is often used. Several pharmaceutical companies are currently developing bi-layer tablets, for a variety of reasons: patent extension, therapeutic, marketing to name a few. General tablet manufacturing principles remain the same, there is much more to consider because making multi-layer tablets involves multiple often incompatible products, additional equipment and many formulation and operation challenges. The present object provides an introduction to bi-layer tablet technology, challenges in bi-layer tablet manufacturing, various tablet presses used, quality and GMP requirements for their production various techniques used for bi-layer tableting and recent developments in the field of bi-layer technology.

**KEYWORDS:** Bi-layer tablet, APIs, incompatibilities

## **Epidermodysplasia Verruciformis (Tree Man Syndrome)**

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**ABSTRACT:** Epidermodysplasia verruciformis (EV), also known as “Tree Man Syndrome” and unfortunately there is no cure. EV is a skin disease which begins in childhood and remains within the individual for their lifetime. It is characterized by widely spread, refractory skin lesions which resemble flat warts. Individuals with EV are highly susceptible to human papilloma virus (HPV), and if infected with HPV, will go on to develop these physical symptoms. EV is an autosomal recessive genetic hereditary skin disorder. Autosomal recessive disorders can only manifest if the individual has two alleles (copies) of the abnormal gene. If either of these genes is inactivated, the proteins created by these genes cannot be produced, resulting in the manifestation of Tree Man Syndrome. *EVER1* and *EVER2* are still undergoing research, and not much is known about their function. However, scientists hypothesize that they have roles regarding zinc distribution within the nuclei of cells. Disruption of the chemical and elemental balances with a cell can have catastrophic complications.

## **CRISPR Cas 9 gene editing technique**

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**ABSTRACT:** Gene therapy is a potential therapeutic strategy for treating hereditary movement disorders, including hereditary ataxia, dystonia, Huntington’s disease, and Parkinson’s disease. Genome editing is a type of genetic engineering in which DNA is inserted, deleted or replaced in the genome using modified nucleases. Recently, clustered regularly interspaced short palindromic repeat/CRISPR associated protein 9 (CRISPR/Cas9) has been used as an essential tool in biotechnology. Cas9 is an RNA-guided DNA endonuclease enzyme that was originally associated with the adaptive immune system of *Streptococcus pyogenes* and is now being utilized as a genome editing tool to induce double strand breaks in DNA. CRISPR/Cas9 has advantages in terms of clinical applicability over other genome editing technologies such as zinc-finger nucleases and transcription activator-like effector nucleases because of easy in vivo delivery. Here, we review and discuss the applicability of CRISPR/Cas9 to preclinical studies or gene therapy in hereditary movement disorders.

**Keywords:** Gene therapy, CRISPR/Cas9, Huntington’s disease

## **Evaluation of The Role of Costus Pictus and Metformin on High Fructose Diet Induced Insulin Resistance in Rats**

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### ABSTRACT

Treatment with monotherapy and combination therapy with metformin and *Costus pictus* causes increased antioxidant enzyme levels like CAT, GSH, GPx, Protein thiols and reduced lipid peroxide products like MDA, 4-HNE, Protein Carbonyls levels due to their antioxidant properties. Progression of IR is facilitated by oxidative damage; however there was decrease in oxidative damage upon treatment with *Costus pictus* and Metformin combination, which was analysed through measurement of oxidative markers. TNF  $\alpha$  levels were increased in Fructose treated group. Treatment with monotherapy and combination therapy with metformin and *Costus pictus* showed decrease in TNF  $\alpha$  levels. DNA damage was reduced significantly in F+MF group when compared with fructose treated group. In MF group DNA damage was seen and was high compared to other groups. Groups treated group low and high doses of *Costus pictus* and F+MF with low and high doses of *Costus pictus* showed a significant decrease in DNA damage compared to F+MF. The %Head DNA is significantly increased in groups treated with F+MF with different doses of *Costus pictus* when compared to fructose, F+MF and significantly decreased compared to control. Therefore, fulfilling results were obtained with the combination of *Costus pictus* and metformin thereby making it a suitable combination to reduce pathological changes anticipated in arthritis.

**Keywords:** *Costus pictus*, Metformin

### Analytical method development and validation of lumefantrine in its bulk dosage form by using RP-HPLC method as per ICH guidelines

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**ABSTRACT:** An accurate, precise, rapid & economical RP-HPLC method has been developed for the estimation of Lumefantrine as per ICH guideline in pharmaceutical dosage form using ultra violet (UV) detector. Elution was carried out using a mobile phase consisting of Acetonitrile & Methanol (90:10) and flow rate was set on 1.6 ml/min at 235 nm, retention time for Lumefantrine was found to be 1.770 min. The method was found to be linear in the concentration range of 100-500  $\mu\text{g/ml}$ , in the linearity study regression equation was found to be  $y = 97.17x - 3.660$  & correlation coefficient was found to be 0.999. This method was Rugged and Robust in different testing criteria, LOD and LOQ was found to be 10.0  $\mu\text{g} / \text{ml}$  & 30.5  $\mu\text{g} / \text{ml}$  respectively. Accuracy study was done in 3 different concentration level 50, 100, 150% & % recovery of the method was found to be 100.2%, 100.9%, 100.2% respectively in 3 different levels & mean recovery was 100.4%, so method was accurate. Results of all validation parameter was within the limit as per ICH guideline. So this method can be used for the determination of Bulk Drug as well as Tablet Dosage form easily and the method was precise, economical, and accurate to perform in future.

**Key words:** mobile phase, Rugged, Robust, Accuracy, Validation

### Formulation and Evaluation of Lamivudine Hollow Microspheres

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**ABSTRACT:** Oral drug delivery systems are designed to release drug in predictable manner and reduce side effects with improving bio availability. Floating drug delivery system is novel drug delivery in which drugs act locally in stomach and show floatation for prolonged period. Hollow microspheres are the good carriers and a non effervescent approach. Hollow microspheres of Lamivudine are prepared by solvent evaporation method. The mechanism mainly involved in this the drug polymer solution in solvent system is agitated finally evaporation gas phase leads to formation of hollow microspheres. The formed hollow microspheres are subjected for various evaluation parameters like drug entrapment efficiency, SEM studies, drug excipient compatibility studies, micromeritic properties, particle size, drug content and *in vitro* drug release studies. In order to determine the mode of drug release, the data fitted in to the various kinetic models.

**Key words :** Non effervescent approach, SEM studies.

### **Stem Cell Therapy**

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**Abstract:** Stem cells have the potential to treat a wide range of diseases. Stem-cell therapy is the use of stem cells to treat or prevent a disease or condition. Bone marrow transplant is the most widely used stem-cell therapy, but some therapies derived from umbilical cord blood are also in use. Research is underway to develop various sources for stem cells, and to apply stem-cell treatments for neurodegenerative diseases and conditions such as diabetes, heart disease, and other conditions. Stem-cell therapy has become controversial following developments such as the ability of scientists to isolate and culture embryonic stem cells, to create stem cells using somatic cell nuclear transfer and their use of techniques to create induced pluripotent stem cells. This controversy is often related to abortion politics and to human cloning. Additionally, efforts to market treatments based on transplant of stored umbilical cord blood have been controversial. In theory, there's no limit to the types of diseases that could be treated with stem cell research. Given that researchers may be able to study all cell types via embryonic stem cells, they have the potential to make breakthroughs in any disease.

**Keywords:** Stem cells, abortion politics, disease

### **Prevalence and Antibiotic Prescribing Pattern in a Tertiary Level Neonatal Intensive Care Unit**

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**Abstract:** Neonatal sepsis is a major cause of morbidity and mortality worldwide especially in developing countries, which justifies early diagnosis and prompt treatment with antibiotics. Neonatal sepsis (NS) is a worldwide problem that presents a management challenge to care groups for neonates and infants. It has been explained that neonates are at the highest risk for bacterial sepsis, with the prevalence at 1 to 10 per 1000 live births worldwide. Existing published data have

suggested that sepsis causes about 10% of all maternal, and 26% of all neonatal deaths. Mortality due to sepsis has increased by approximately 13.7% each year. Antibiotics are the most frequently used medicines in Neonatal Intensive care units. Data regarding rational antibiotic use in neonates is very limited. Hence, it is essential that the antibiotic prescribing patterns be evaluated periodically for its rational use. Therefore, the present study been carried out to identify the prevalence and prescribing patterns of antibiotics in neonatal intensive care unit of a tertiary care hospital, suryapet district, telangana. The data regarding patient demographics and daily reporting of cases with sepsis and their antibiotic use was collected daily in a structured proforma. Collected data was subjected to statistical analysis. Out of total 250 neonates with male preponderance (62%), 145 received antibiotics. The majority of neonates (55.9%) received between 1-2 antibiotics, 37.3% had 3 to 5 antibiotics prescribed, while 6.7% neonates were prescribed more than 5 antibiotics. Among antibiotics; Amikacin, Cefixime were the drugs most often prescribed. Amikacin and Cefixime were given more to term infants whereas other antibiotics like Piperacillin-tazobactam and Meropenem were prescribed more to preterm and outborn neonates. The use of a high number of antibiotics is a common practice. The increased frequency of antibiotics use in some neonates was of concern. Incidence of neonates is understood clearly from this study. Guidelines for the use of antibiotics in neonates are required and larger studies are needed on this issue.

Keywords: Neonatal sepsis, antibiotics, tazobactam, Cefixime

## **SCHISTOSOMIASIS**

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**ABSTRACT:** Schistosomiasis is also known as bilharzia or snail fever or katayama fever is a parasitic disease carried by fresh water snails infected with 5 varieties of the parasite Schistosoma. It is a major parasitic disease in the world with about 237 million infections. The disease is most commonly found in Africa, Asia & South America. Schistosoma species enters human body mostly through skin. Snail is an intermediate parasite. Schistosomiasis ranks second only to malaria as the most common parasitic disease. Schistosomiasis is transmitted by contact with contaminated fresh water (lakes and ponds, rivers, dams) inhabited by snails carrying the parasite. Swimming, bathing, fishing and even domestic chores such as laundry and herding livestock can put people at risk of contracting the disease.

Key Words: Miracidium , Cercaria , Schistosomulum, gynaecophoric canal.

## **SUPERBUGS : AN OVERVIEW**

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**ABSTRACT:** Ordinary bacteria that have developed resistance to many antibiotics. In this activity you will compare the genome of two strains of staphylococcus aureus one of the, UK's best known bacterial superbugs. S.aureus is a small spherical bacterium and it is usually found on the skin or in the nose. S.aureus is capable of infecting a range of human cell types using different mechanisms it has assorted proteins on its surface that attach to various human cell types, as well as some which help it clump together to attach to cells. It also releases toxins that damage cells

and affect the immune system making it harder for the body to deal with infections successfully. Based on the relative mutation rate and gene transfer rates, there is indeed a global concern over a future inability to treat bacterial infection effectively and without toxic side effects. Emerging resistant mechanisms and organisms place the world on a path not only similar to an era before penicillin, but also to an era where medical surgical procedures become impossible to the risk of infection.

Keywords: Ordinary bacteria, antibiotics, S.aureus