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PRINCETON COLLEGE OF PHARMACY

(Affiliated to JNTUH & Approved by AICTE, PCI, New Delhi)
Chowdaryguda, Korremula (V), Ghatkesar (M), Medchal (Dist.)-500 088

Proceedings of International Conference on Global Advancement in Engineering, Management, Pharmacy, Science and Humanities

January 19-20, 2019

ISBN: 978-93-88-746-00-7

PRINCETONCOLLEGE OF PHARMACY

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ROLE OF PSYLLIUM AS PHARMACEUTICAL ADDITIVES

KokkulaSatyanarayana

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ABSTRACT

Psyllium or psyllium is a seed grade natural polysaccharide obtained from psyllium and its mucilage is calm of natural arabinoxylan (arabinose 22.6% and xylose 74.6%). Psyllium mucilage is extracted from psyllium husk. Graft copolymerization is one of the best methods for modifying psyllium,which impart certain functional properties to psyllium without destroying its basic properties. The grafting is initiated through the formation of the free radical centers on the polymer backbone. Psyllium has wide application in many health problems, particularly cholesterol control, colon cancer prevention, high sugar levels in blood and widely used as a laxative.

Validation-In Pharmaceutical Industry

HariprasadKadiyam

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ABSTRACT

Digitalization of any manufacture industry is a key step in any progress of the manufacturing process. The process of digitalization consists of both elevated use of robotics, automatization solutions and computerization, thereby allowing to minimize costs, to improve effectivity and productivity, and to be flexible to changes. Pharmaceutical Industry (PI) has alternatively been resistant to digitalization, mainly due to honest experience and complexity of the entailed improvement and manufacture processes. Nevertheless, there is a clear need to digitalize PI as the demand in each traditional and new pills is constantly growing. Contract Development Manufacture Organizations (CDMOs) have a different digitalizing challenge. Digitalization of PI, and CDMO precisely, should be tightly associated to the main elements of Good Manufacture Practice (GMP), and, to succeed in PI digitalizing requires steady focus on GMP. Close collaboration with constantly altering stakeholders is another necessary factor which should be in focal point during digitalization of CDMO. This paper represents an overview over the principal aspects of CDMO digitalization and discusses each the opportunities and challenges of the process, focusing on the sensible solutions for successive digital implementation.

ISBN: 97893-88746-00-07

Study On Controlled Drug Delivery Systems- Review Article

Malothusuresh

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ABSTRACT

Controlled drug release devices have been developed to maintain constant concentrations of drug within the therapeutic range in the patient's body. There, it helps to reduce the variability of performance of the active drug. Such systems offer many advantages over traditional systems drug management methods. Targeted delivery systems are also considered controlled drugs Distribution system. These devices are designed to improve continuous drug therapy released after application of a single dose to stabilize blood levels, thereby reducing side effect. Polymer membranes are commonly used for controlled drug delivery. These systems acts on various mechanisms such as osmotic pressure, matrix systems, controlled dissolution, etc. This paper presents a brief review of the preparation of controlled drug release devices, and underlying mechanisms that influence drug release, including types of devices to control with basic mathematical equations. Oral drug delivery is the most convenient option as the oral route provides maximum active surface area among all drug delivery system for administration of various drugs. The attractiveness of these dosage forms is due to awareness to toxicity and ineffectiveness to drugs when administered by oral conventional method in the form of tablets and capsules.

A Review on-Liposomes

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ABSTRACT

Liposomes derived from two Greek words: Lipo (FAT) and soma(BODY).It is so named becauseof its composition is primarily of phopholipid. Liposomes are microparticulatelipoidalvesicales which are under extensive investigation as drug carriers for improving the drug delivery of therapeutic agents,relatively composed of biocompatible and bio degradable materials,and they consists of an aqueous volume entrapped by one or more bilayers of natural or synthetic lipids.A liposome is a spherical veicle having at least one lipid bilayer.the liposomes can be used as a vehicle for administration of nutrients and pharmaceutical drugs.liposomes can be prepared by disrupting biological membranes(such as by sonication).Size range:25-5000nm.

ISBN: 978-93-88746-00-7

Peptic Ulcer

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ABSTRACT

The incidence of peptic ulceration disease (PUD) peaked in the late 19th century while transiting into the 20th century. With entry within the new millennium a significant decrease of PUD has occurred. However, demographic changes with an increasing elderly population related to multiple comorbidities and polypharmacy became responsible for a persistent high rate of peptic ulcer complications. The acid driven concept of PUD has directed the event of surgical procedures and drugs with an increasing potency in acid suppression. High speed of symptom resolution and rapid ulcer healing was obtained with the introduction of proton pump inhibitors, but cure of PUD has failed. The arrival of Helicobacter pylori has revolutionized the history of PUD which has become a curable disease by successful cure of the infection. However, new challenges have emerged with a rise of treatment failures due to increasing antibiotic resistance of H. pylori. The changing pattern within the prevalence of etiologies other than H. pylori demands for accurate identification of the ulcerogenic cause within the individual patient to allow for proper selection of therapy. Management of peptic ulceration bleeding remains a critical clinical challenge. The chapter of PUD is reduced in size and has become more heterogeneous – but isn't closed.

Drug Stability-Review Article

SarithaRasala

Princeton College of Pharmacy

ABSTRACT

MosarratJahan, Dr. Hariom Sharma, Dr. Gaurav K Sharma, ABSTRACT This includes drug stability studies Important parameters for new drugs and new drug development pharmaceutical formulation. Durability prediction plays a big role all dosage forms and their drug development Helps determine and suggest storage conditions for each Label description. Ensuring drug stability research Maintain product quality, safety and effectiveness throughout Durability is a prerequisite for acceptance Drug approval. These studies are necessary it will be implemented according to the guidelines issued by ICH. WHO or other institutions.

ISBN: 978-93-88746-00-7

STUDY ON NUCLEAR MAGNETIC RESONANACE SPECTROSCOPY& ITS SIGNIFICANCE IN PHARMA-ARTICLE

AlwalaSudhaker

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ABSTRACT

Nuclear magnetic resonance (NMR) describes the response of nuclei to an applied magnetic field. The NMR responses from downhole logs (e.g. amplitude, decay time) are analysed to determine lithology-independent estimates of porosity, saturations and pore system characteristics. This chapter describes the NMR measurements on core that are used to calibrate the log responses and to improve the characterisation of the fluid content in core material, and provide a unique look at the interaction of pore fluids within reservoir rock fabric. The theory and application of the NMR response in porous rocks are described, and the sample preparation methods, test equipment, measurement parameters, test procedures, data interpretation techniques and data reporting requirements for the principal NMR tests on core are detailed. The advantages and drawbacks/issues are described, and quality control checks and diagnostics are summarised. Nuclear Magnetic Resonance (NMR) spectroscopy has made a tremendous impact in many areas of chemistry, biology and medicine.The origin of chemical shifts, coupling constants, spin relaxation and the Nuclear over Hauser Effect (NOE) will be discussed and their relation to molecular structure will be provided.

REVIEW ON: COLON TARGETED DRUG DELIVERY SYSTEM

B. Pravallika

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ABSTRACT

In recent years the delivery of colonic drugs is important in the delivery of local medicine. Targeted drug delivery to the colon is highly desirable in the local treatment of various intestinal diseases such as ulcerative colitis, Crohn's disease, amebiosis, colon cancer, local treatment of colon pathologies, and systemic delivery of protein and peptide drugs. This article provides an overview of the various colonel-based drug delivery systems such as the critical pH of polymer associated with drug delivery to the colon, time Controlled delivery of drug delivery to Colon microbially triggered systems, prodrugmethod for colonic drug deliver .Targeted drug delivery such as pressure controlled drug-Delivery Systems, Novel Colon Targeted Delivery System (CODESTM), Osmotic Controlled Drug Delivery (ORDS-CT).

ISBN: 978-93-88746-00-7

A Systematic Review On Nanocapsule: A Novel Drug Delivery System

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ABSTRACT

Nanocapsule are tiny capsule that range in size from 10 nm to 1000nm.they are composed up of a liquid /solid core with a cavity in which the medicine is inserted and an unique polymer membrane made up natural or synthetic polymers they are attractive due to the protective coating, which is often pyrophoric and quickly oxidised, delaying the release of active substances. For creating nanocapsule variety of technological processs are used , although interfacial polymerisation for monomer and nanodeposition for premade polymer preformed polymer are the most popular .size distribution are the most essential properties in their preparation,which may be assessed using a variety of techniques such as x-Ray defraction ,scaning electron microscopy ,transmission electron microscopy ,X-Ray photoelectron spectroscopy ,superconducting quantum interference device ,multiangle laser light scattering and other spectroscopic techniques are among the others.nanocapsule with a high degree of repeatability that can be use in varity of biological applications. They can be applied to awide range of conditions .botanical pesticides,genetic modifications ,cosmetics ,cleansing product ,sewage treatment and adhesive are just a few of the things that will be discussed. Anti infectionnanocapsulebandages ,component applications ,tailored medicine administrations in cancers. Lipid nanoparticles nanocapsule in food technology and agricultiure. Biopharmaceuticals are now more effectively delivered. using a nanocapsule to deliver active substance to specific locations poses a number of challenges and opportunities.Futurereaserch and development opportunities for novel ,improved medication.

NANO TECHNOLOGY IN CANCER DISEASE: REVIEW ARTICLE

ThanduRajini

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ABSTRACT

In the combat in opposition to most cancers, early detection is a key aspect for a hit treatment. However, the detection of most cancers within side the early level has been hindered with the aid of using the intrinsic limits of traditional most cancers diagnostic techniques. Nanotechnologyaffords excessive sensitivity, specificity, and multiplexed size potential and has consequently been investigated for the detection of extracellular most cancers biomarkers and most cancers cells, in addition to for in vivo imaging. This evaluation summarizes the ultra-modern traits in nanotechnology programs for most cancers diagnosis. In addition, the demanding situations

ISBN: 978-93-88746-00-7

withinside the translation of nanotechnology-primarily based totally diagnostic techniques into medical programs are discussed.

DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR THE ESTIMATION OF RASAGILINE TABLET DOSAGE FORMS

KornaDevamani

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ABSTRACT

An accurate and precise HPLC method was developed for the determination of rasagiline. Separation of the drug was achieved on a reverse phase C18 column using a mobile phase consisting of phosphate buffer and acetonitrile in the ratio of 50:50 v/v. The flow rate was 0.5 ml/min and the detection wavelength was 210 nm. The linearity was observed in the range of 10-125 µg/ml with a correlation coefficient of 1.000. The proposed method was validated for its linearity, accuracy, precision and robustness. This method can be employed for routine quality control analysis of rasagiline in tablet dosage forms.

PHYTOCHEMICAL AND PHARMACOLOGY PROPETIES OF CATHARANTHUS ROSEA

SunithaChintala

Princeton College of Pharmacy

ABSTRACT

Catharanthusroseus is a critical evergreen medicinal herb of Apocynacea own circle of relatives used particularly for remedy of most cancers and diabetics. The plant become 1 m in peak and commercially grown broadly in India, Australia, Africa and Southern Europe. Alkaloids which include vincristine and vinblastine, flavonoids and phenolic are the primary additives of plant. The plant well known shows numerous organic homes which includes antibacterial, anticancer, antioxidant, antihyperglycemic, anti-hypertensive, antidiabetic and wound healing. In the existing examine we've got attempted to accumulate conventional uses, phytochemical components and pharmacological homes of plant. This examine ought to be used to recognize the fitness selling homes of this multipurpose plant and it can additionally offer clues for discovery of recent lead compound of pharmaceutical importance.

ISBN: 978-93-88746-00-7

THE WONDERFUL ACTIVITIES OF THE GENUS MENTHA: NOT ONLY ANTIOXIDANT PROPERTIES

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ABSTRACT

Medicinal plants and their derived compounds have drawn the attention of researchers due to their considerable impact on human health. Among medicinal plants, mint (*Mentha* species) exhibits multiple health beneficial properties, such as prevention from cancer development and anti-obesity, antimicrobial, anti-inflammatory, anti-diabetic, and cardioprotective effects, as a result of its antioxidant potential, combined with low toxicity and high efficacy. *Mentha* species are widely used in savory dishes, food, beverages, and confectionary products. Phytochemicals derived from mint also showed anticancer activity against different types of human cancers such as cervix, lung, breast and many others. Mint essential oils show a great cytotoxicity potential, by modulating MAPK and PI3k/Akt pathways; they also induce apoptosis, suppress invasion and migration potential of cancer cells lines along with cell cycle arrest, upregulation of Bax and p53 genes, modulation of TNF, IL-6, IFN-γ, IL-8, and induction of senescence phenotype.

Diabetes And Its Treatment – A Review

D.Vijay Kumar

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ABSTRACT

Diabetes mellitus is a metabolic disease due to an illness in insulin secretion, insulin movement or both. The situation itself introduces a want for patient's lifestyle adjustment to the disorder and some of ordinary healing and diagnostic restrictions. The most important indication of diabetes mellitus is a hyperglycemia in blood that's because of irrelevant pancreatic insulin secretion or low insulin-directed fostering of glucose with the aid of using goal cells. It is silent killer disorder and influences tens of thousands and thousands of human beings withinside the world. It is envisioned that during 2010 there has been globally 285 million human beings tormented by this disorder. This range is envisioned to growth to 430 million withinside the absence of higher manipulate or cure. Different varieties of diabetes mellitus, kind 1, kind 2, gestational diabetes and different varieties of diabetes mellitus are in comparison in phrases of diagnostic criteria, etiology and genetics. As the disorder progresses tissue or vascular harm guarantees main to intense diabetic headaches including

ISBN: 978-93-88746-00-7

retinopathy, neuropathy, nephropathy, cardiovascular headaches and ulceration. Currently to be had pharmacotherapy for the remedy of diabetes mellitus consists of insulin and hypoglycemic agents. These capsules act with the aid of using growing the secretion of insulin shape pancreas or decreasing plasma glucose concentrations with the aid of using growing glucose uptake and lowering gluconeogenesis. Comorbid intellectual sicknesses can similarly negatively have an effect on the path of diabetes. They are specifically depression, tension problems, consuming problems and cognitive problems together with dementia. Various natural capsules had been additionally proved powerful because of their useful contents in remedy of diabetes.

Root Vegetables-Composition, Health Effects, And Contaminants - A Review

Surendarangothu

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ABSTRACT

Root vegetables are known all over the world, but they are being less and less consumed by individuals. The main purpose of this article was to summarize the benefits, health effects, and threats associated with the consumption of carrot, celery, parsley, beetroot, radish, turnip, and horseradish. They are characterized by high nutritional value due to their richness in dietary fiber, vitamins, and minerals. One of their most important features is their high content of bioactive compounds, such as polyphenols, phenols, flavonoids, and vitamin C. These compounds are responsible for antioxidant potential. Comparison of their antioxidant effects is difficult due to the lack of standardization among methods used for their assessment. Therefore, there is a need for a reference method that would allow for correct interpretation. Moreover, root vegetables are characterized by several health-promoting effects, including the regulation of metabolic parameters (glucose level, lipid profile, and blood pressure), antioxidant potential, prebiotic function, and anti-cancer properties. However, due to the type of cultivation, root vegetables are vulnerable to contaminants from the soil, such as toxic metals (lead and cadmium), pesticides, pharmaceutical residues, microplastics, and nitrates. Regardless, the low levels of toxic substances present in root vegetables do not pose health risks to the average consumer.

ISBN: 978-93-88746-00-7

Design Expert Assisted Formulation Of Topical Bioadhesive Gel of Sertaconazole Nitrate

SwethaElishetty

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ABSTRACT

The objective of this work was to develop a bioadhesive topical gel of sertaconazole nitrate with the help of response-surface approach.Experiments were performed according to a 3-level factorial design to evaluate the effects of two independent variables [amount of Carbapol 934 = X1) and Sodium carboxymethylcellulose (NaCMC) = X2)] on the bioadhesive character of gel, rheological property of gel (consistency index), and in-vitro drug release. The best model was selected to fit the data.

FORMULATION AND CHARACTERIZATION OF TOPICAL NIOSOMAL GEL CONTAINING ACECLOFENAC AND SERRATIOPEPTIASE

Jakkulaasrikanth

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ABSTRACT

Aceclofenac is classified as a BCS Class II drug because of its low water solubility. Systemic adverse effects, such as anticoagulant effects, have been described when SRP is taken orally. The goal of this study was to see how well a topical Niosomal gel containing Aceclofenac (ACE) and Serratopeptidase (SRP) could deliver the drugs. Particle size, shape, entrapment efficiency, and in vitro properties of Niosomal formulations produced using the thin film hydration process at varied cholesterol and Span 40 ratios were studied. The average particle size of the niosomal formulation was determined to be between 2 and 2 m. The entrapment efficiency of the niosomal formulations F2 (1:1:1) and F6 (1: 2: 1) of cholesterol and surfactant was 65 percent and 66.4 percent, respectively. Niosomal formulation (F2 and F6) displayed high percentage of drug release after 18 h. For the convenience of application, greater stability, reduced aspect effects, greater affected person compliance, and the convenience of discontinuation on desire, there were numerous advantages to deliver ACE through topical route. Therefore, topical therapy isn't most effective promising at the protection and efficacy fronts however additionally at the financial fronts too. In vitro have a look at confirmed that niosomal gel possessed higher pores and skin permeation.

ISBN: 978-93-88746-00-7

Quinolone Derivatives And Their Antifungal Activities: An Overview

ChakrapuRupa Devi

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ABSTRACT

More than 300 million people suffer from the incidence of life-threatening invasive fungal infections, resulting in over 1.35 million deaths annually. Currently, the antifungal agents available in clinics are rather limited, and the rapid development of resistance to the existing antifungal drugs has further aggravated mortality. Quinolones possess a broad spectrum of chemotherapeutic properties and demonstrate considerable antifungal activities as well. Various quinolone derivatives have been screened for their antifungal activities, and some of them exhibit excellent potency against both drug-susceptible and drug-resistant fungi. This review aims to outline the recent advances in quinolone derivatives as potential antifungal agents and summarize the structure-activity relationship, to provide insights for the rational design of more active candidates.

Transdermal Delivery Of Anticancer Drug Caffeine From Water-In-Oil Nanoemulsions

SarithaRasala

Princeton College of Pharmacy

ABSTRACT

Recently caffeine has been investigated for the treatment of various types of cancers upon oral administration. There is also some evidence that dermally applied caffeine can protect the skin from skin cancer caused by sun exposure. Therefore nanoemulsion formulation of caffeine for transdermal drug delivery was developed and evaluated in the present investigation. Different w/o nanoemulsion formulations of caffeine were prepared by oil phase titration method. Thermodynamically stable nanoemulsions were characterized for morphology, droplet size, viscosity and refractive index. The in vitro skin permeation studies were performed on Franz diffusion cell using rat skin as permeation membrane. The in vitro skin permeation profile of optimized formulation was compared with aqueous solution of caffeine. Significant increase in permeability parameters was observed in nanoemulsion formulations ($P<0.05$) as compared to aqueous solution of caffeine. The steady-state flux (J(ss)) and permeability coefficient (K(p)) for optimized nanoemulsion formulation (C12) were found to be 147.55+/-8.21 microg/cm(2)/h and 1.475 x 10(-2)+/-0.031 x 10(-2)cm/h, respectively. Enhancement ratio (E(r)) was found to be 17.37 in optimized formulation C12 compared with other formulations.

ISBN: 978-93-88746-00-7

Formulation And Evaluation Of Cetirizine Hcl Mouth Fast Dissolving Tablets

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ABSTRACT

Mouth Fast Dissolving Tablets (MFDT's) have emerged as an alternative to conventional oral dosage forms to improve the patient compliance. Due to problem in swallowing ability with age, the pediatric and geriatric patients complain of difficulty to take conventional solid dosage forms . The MFDT's are solid dosage forms that dissolve or disintegrate rapidly in the oral cavity, which results in solution or suspension without the need of water. The main objective of this work is to formulate and evaluate Cetirizine HCl MFDT's using different concentrations of superdisintegrants like croscarmellose sodium (CCS), crospovidone (CP), sodium starch glycolate (SSG). Tablets were prepared by direct compression method and evaluated for hardness, friability, wetting time, disintegration time and percent drug release. FT-IR studies revealed that there was no interaction between Cetirizine HCl and the excipients used in the study. The results indicate that formulation prepared with 5% croscarmellose sodium was found to be optimized which provides maximum drug release (99%) and minimum disintegration time (less than 20sec). Stability studies of optimized formulation revealed that formulation is stable.

A Review Of Analytical Techniques For Determination Of Glimepiride: Present And Perspectives

Hemanta Kumar Khatua

Princeton College of Pharmacy

ABSTRACT

Glimepiride is an oral antidiabetic drug in the sulfonylurea class, which is widely used in treatment of Type 2 diabetes and it is currently available in more than 60 countries worldwide. As a result of the importance of this oral hypoglycemic agent in the treatment of noninsulin-dependent diabetes mellitus, this work aims to compile the published analytical methods reported so far in the literature for determination of glimepiride in biologic samples and pharmaceutical formulations. Techniques like high-performance liquid chromatography with ultraviolet, array-diode, mass spectroscopy, evaporative light scattering and charged aerosol detections, liquid chromatography-atmospheric pressure chemical ionization-mass spectrometry, liquid chromatography-electrospray ionization-tandem mass spectrometry, semimicrobore high-performance liquid chromatography with column-switching, micellarelectrokinetic chromatography, high-performance thin layer chromatography, polarography, and spectrophotometry have been used for analysis, from which it can be seen that high-performance liquid chromatography methods have been used most extensively.

ISBN: 978-93-88746-00-7

Tetrazole Hybrids With Potential Anticancer Activity – A Review

R SathiyaSundar

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ABSTRACT

Cancer is one of the main causes of death throughout the world. The anticancer agents are indispensable for the treatment of various cancers, but most of them currently on the market are not specific, resulting in series of side effects of chemotherapy. Moreover, the emergency of drug-resistance towards cancers has already increased up to alarming level in the recent decades. Therefore, it's imperative to develop novel anticancer candidates with excellent activity against both drug-susceptible and drug-resistant cancers, and low toxicity as well. Tetrazole is the bioisoster of carboxylic acid, and its derivatives demonstrated promising anticancer activity. Hybridization of tetrazole with other anticancer pharmacophores may provide novel candidates with anticancer potency. The present review describes the anticancer activity of tetrazole hybrids, and the structure-activity relationship (SAR) is also discussed to provide an insight for rational designs of tetrazole anticancer candidates with higher efficiency.

Method Development and Validation of Aspirin and Clopidogrel Pharmaceutical Dosage Forms by RP- Hplc Methodology

HariprasadKadiyam
Princeton College of Pharmacy

ABSTRACT

A simple and selective LC method is described for the determination of Aspirin and Clopidogrel in tablet dosage forms. Chromatographic separation was achieved on a c18 column along with mobile phase consisting of a combination of fifty five volumes of Mixed Phosphate Buffer and forty five volumes of Acetonitrile with detection of 235 nm. Linearity was observed in the range 20-60 µg/ml for Aspirin (r2=0.998) and 10-30 µg /ml for Clopidogrel (r2 =0.998) for the amount of drugs estimated by the projected ways was in smart agreement with the label claim. Recovery experiments indicated the absence of interference from commonly encountered pharmaceutical additives. The method was found to be precise as indicated by the repeatability analysis, showing %RSD trials.

ISBN: 978-93-88746-00-7

Recent Developments Of Coumarin Hybrids As Anti-Fungal Agents

RoopaniMadhu

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ABSTRACT

Fungi place a huge burden on global healthcare systems attributed to the fact that fungal infections are responsible for the high morbidity and mortality rates in patients who received stem cell transplantation, antineoplastic chemotherapy, organ transplants or suffered Human Immunodeficiency Virus (HIV) infection. Unfortunately, almost none of the representative anti-fungal agents currently used in clinical therapy are ideal in terms of efficacy, anti-fungal spectrum or safety. Moreover, the rapid development of resistance to existing anti-fungal drugs has further aggravated the mortality and spread of fungi, creating an urgent need for novel anti-fungal agents. The broad spectrum of biological activities and successful usage in clinic made coumarins a promising anti-fungal candidate. Furthermore, hybridization of other pharmacophores with coumarin motif may enhance the anti-fungal efficacy, broaden the anti-fungal spectrum and improve the safety profiles. Thus, numerous coumarin hybrids have been assessed for their anti-fungal activities, and some of them showed promising potency and may have a novel mechanism of action. This review aims to outline the recent development of coumarin hybrids as potential anti-fungal agents and summarize their Structure-Activity Relationship (SAR) to provide an insight for rational designs of more active agents.

ESTIMATION OF AMLODIPINE BESYLATE, HYDROCHLOROTHIAZIDE AND VALSARTAN BY RP-HPLC, HPTLC AND UV-SPECTROPHOTOMETRY

Miss Hema

Princeton College of Pharmacy

ABSTRACT

Accurate, sensitive and reproducible reversed-phase high-performance liquid chromatography (RP-HPLC), high-performance thin-layer chromatography (HPTLC) and ultraviolet (UV) spectrophopometric methods were developed for the concurrent estimation of amlodipine besylate (AMLO), hydrochlorothiazide (HCTZ) and valsartan (VALS) in bulk and combined tablet dosage forms. For the RP-HPLC method, separation was achieved on a C18 column using potassium dihydrogen orthophosphate buffer (50 mM, pH 3.7) with 0.2% triethylamine as the modifier and acetonitrile in the ratio of 56:44 (v/v) as the mobile phase. Quantification was achieved using a photodiode array detector at 232 nm over a concentration range of 2-25 µg/mL for AMLO, 5-45

ISBN: 978-93-88746-00-7

µg/mL for HCTZ and 20-150 µg/mL for VALS. For the HPTLC method, the drugs were separated by using ethyl acetate-methanol-toluene-ammonia (7.5:3:2:0.8, v/v/v/v) as the mobile phase. Quantification was achieved using UV detection at 242 nm over a concentration range of 100-600 ng/spot for AMLO, 150-900 ng/spot for HCTZ and 1,200-3,200 ng/spot for VALS. The UV-spectrophotometric simultaneous equation method was based on the measurement of absorbance at three wavelengths; i.e., at 237.6 nm (λmax of AMLO), 270.2 nm (λmax of HCTZ) and 249.2 nm (λmax of VALS) in methanol. Quantification was achieved over the concentration range of 2-20 µg/mL for AMLO, 5-25 µg/mL HCTZ and 10-50 µg/mL for VALS. All methods were validated according to International Conference on Harmonization guidelines and successfully applied to marketed pharmaceutical formulations. Additionally, the three methods were compared statistically by an analysis of variance test, which revealed no significant difference between the proposed methods with respect to accuracy and precision.

TETRAZOLE HYBRIDS AND THEIR ANTIFUNGAL ACTIVITIES

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ABSTRACT

Fungi, which can cause serious infections, results in more than 1.35 million deaths annually throughout the world. Azole antifungal drugs which could inhibit the enzyme lanosterol 14α-demethylase, occupy an important position in the treatment of fungal infections. Tetrazoles, practically non-metabolized bioisostericanalog of carboxylic acid and cis-amide, possess a variety of chemotherapeutic properties, including antifungal activities. Hybridization represents a promising strategy to develop novel drugs, and hybridization of tetrazole with other antifungal pharmacophores has the potential to increase the activity and overcome the drug resistance. Various tetrazole hybrids have been designed, synthesized and screened for their antifungal activities, and some of them showed promising activity against both drug-susceptible and drug-resistant fungi. In this review, we present tetrazole hybrids for fighting against fungi. The structure-activity relationship (SAR) is also discussed to provide an insight for rational designs of more effective candidates.

ISBN: 978-93-88746-00-7

Phytochemical analysis and Antibacterial properties of Azadirachtaindica (Neem) leaves extract against E.coli.

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ABSTRACT

Azadirachtaindica has great medicinal properties and distributed worldwide. The extract of Azadirachtaindica show different properties like antibacterial, antifungal, antoxidant etc. In this work we prepared extract in different solvent i.e benzene, acetone, toluene, ethyl acetate, ethanol and beutyl alcohol. Phytochemical analysis of plant extract also gave positive result for saponins, tannins, phenols, proteins, glycoside, terpenoids, carbohydrate, flavanoids, alkanoids. The aim of this study that screen out the active components and test the antibacterial activity of extract in different solvents as benzene, acetone, toluene, ethyl acetate, ethanol, beutyl alcohol. The acetone extract showed the maiximum bacterial growth nhibition 58.77% against E. colistrains. Therefore the Azadirachtaindica leaf and other parts of this plant use for different purpose like antimicrobial, antioxidant in the form of powder, tablet and micro solution.

Drug Interaction Considerations In The Therapeutic Use Of Carbonic Anhydrase Inhibitors

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ABSTRACT

Carbonic anhydrase inhibitors (CAIs) of the sulfonamide and sulfamate type are clinically used drugs as diuretics, antiglaucoma, antiepileptic, antiobesity and anti-high altitude disease agents. Anticancer agents based on CAIs are also in clinical development for the management of hypoxic, metastatic tumors. Acetazolamide, methazolamide, dichlorophenamide, dorzolamide and brinzolamide are mainly used as antiglaucoma drugs, sulthiame, topiramate and zonisamide as antiepileptic/antiobesity agents, celecoxib and polmacoxib are dual carbonic anhydrase/cycloxygenase inhibitors. Girentuximab, a monoclonal antibody and SLC-0111, a sulfonamide inhibitor, are in clinical trials as anticancer agents.The drug interactions with many classes of pharmacological agents are reviewed. Some of these drugs, such as acetazolamide, topiramate and celecoxib show a large number of interactions with non-steroidal anti-inflammatory drugs (NSAIDs), diuretics, antiepileptics, immunosupressants, anticholinesterase drugs, β-blockers, anesthetics, oral contraceptives, anticancer agents, antifungals, anti-mycobacterials, lithium, metformin and clopidogrel.

ISBN: 978-93-88746-00-7

Comparative Phytochemical Screening of Leaves and Bulb of Allium sativum L.

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ABSTRACT

Plants derived bioactive compounds have been the focus of recent research due to their health promoting effects. Allium sativum L. plant belongs to Liliaceae family. The present investigation was carried out to assess the qualitative phytochemical analysis of leaves and Bulbs of Allium sativum L. In the study three different solvents were used for the phytochemical screening named Methanol, Chloroform and Aqueous. Different solvent screening shoed the presence of SaponinsTerpenoids and Glycosides. Since the plant contain high quantities of these new bioactive potential compounds, it is reliable to possess large number of pharmacological values like antioxidants, antifungal, antibacterial, antiinflammatory, antiulcer, diuretics activities and are being employed for the treatment of different ailments in the indigenous system of medicine.

A Validated Rp-Hplc Method For The Estimation Of Anagrelide In Capsule Dosage Forms

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ABSTRACT

An accurate and precise high performance liquid chromatographic method was developed for quantitative estimation of anagrelide in capsule dosage forms. Chromatographic separation of the drug was achieved on a Kromosil C_{18} column (150 x 4.6 mm; 5µ) by isocratic elution using a mobile phase consisting of phosphate buffer (pH 2.5) and acetonitrile (75:25 v/v) at a flow rate of 1.2 mL/min. The drug in the eluate was monitored by UV detection at 250 nm. Under optimized conditions, the retention time obtained for the drug was 4.818 min. The calibration curve was linear over the range of 50-150 µg/mL of the drug. The recovery of drug by the proposed method was found to be 98.95% to 100.45%. The performance of the method was validated as per ICH guidelines. The method was also found to be applicable for determination of anagrelide in its capsule dosage forms without any interference from the excipients. The proposed method is suitable for routine quality control analysis of anagrelide.

ISBN: 978-93-88746-00-7

Pharmacological effects of the phytochemicals of Anethumsowa L. root extracts-review

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ABSTRACT

Anethumsowa L. is widely used as an important spice and traditional medicinal plants to treat various ailments. On the basis of scientific ethnobotanical information, this study was undertaken to evaluate the antioxidant, antimicrobial and cytotoxic activity of the crude extracts of Anethumsowa L. roots as well as to identify the classes of phytochemicals by chemical tests. The antioxidant potential of the extracts was ascertained with the stable organic free radical (2, 2-diphenyl-1-picryl-hydrazyl). The agar well diffusion method was used to determine the susceptibility of bacterial and fungal strains of the crude extracts. The minimum inhibitory concentration (MIC) and minimum bactericidal concentrations (MBC) were determined by the microdilution test. Cytotoxic activities were screened using brine shrimps (Artemiasalina) lethality assay. Finally, phytochemicals were profiled using standard procedures.

Development And Validation Of Hplc Method For Determination Of Clotrimazole And Its Two Degradation Products In Spray Formulation

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ABSTRACT

A novel simple isocratic HPLC method with UV detection for the determination of three compounds in spray solution (active component clotrimazole and two degradation products imidazole and (2-chlorophenyl)diphenylmethanol) using ibuprofen as an internal standard was developed and validated. The complications with different acido-basic properties of the analysed compounds in HPLC separation - while clotrimazole has pK(a) 4.7, imidazole has pK(a) 6.9 compared to relatively more acidic (2-chlorophenyl)diphenylmethanol - were finally overcome using a 3.5mum Zorbax((R)) SB-Phenyl column (75mmx4.6mm i.d., Agilent Technologies). The optimal mobile phase for separation of clotrimazole, degradation products imidazole and (2-chlorophenyl)diphenylmethanol and ibuprofen as internal standard consists of a mixture of acetonitrile and water (65:35, v/v) with pH* conditioned by phosphoric acid to 3.5. At a flow rate of 0.5ml /min(-1) and detection at 210nm, the total time of analysis was less than 6min. The method was applied for routine analysis (batch analysis and stability tests) in commercial spray solution.

ISBN: 978-93-88746-00-7

Review on Hibiscus rosasinensis

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ABSTRACT

Nature has been a source of medicinal agentsforthousands of years and an impressive number of modern drugs have been isolated from natural sources, manybased on their use in traditional medicine. Higher plants, as sources of medicinal compounds, have continued to play a dominant role in themaintenance of human health since ancient times. Over 50% of all modern clinical drugs are of natural product origin and playan important role in drug development programs in the pharmaceutical industry. Ethno medicinal value of Hibiscus rosa-sinensis have been evaluated which include the followings.H. rosasinensis has been used for the treatment of a variety of diseases. It is an easily available plant for natural remedies here in this article some pharmacological activities of this plant is focused.

Glaucoma And The Applications Of Carbonic Anhydrase Inhibitor

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ABSTRACT

Inhibition of carbonic anhydrase (CA) has pharmacologic applications in the treatment of glaucoma, a disease affecting a large number of people and characterized by an elevated intraocular pressure (IOP). At least three isoforms, CA II, IV and XII are targeted by the sulfonamide inhibitors, some of which are clinically used drugs. Acetazolamide, methazolamide and dichlorophenamide are first generation CA inhibitors (CAIs) still used as systemic drugs for the management of this disease. Dorzolamide and brinzolamide represent the second generation inhibitors, being used topically, as eye drops, with less side effects compared to the first generation drugs. Third generation inhibitors have been developed by using the tail approach, but they did not reach the clinics yet. The most promising such derivatives are the sulfonamides incorporating either tails with nitric oxide releasing moieties or hybrid drugs possessing prostaglandin (PG) F agonist moieties in their molecules. Recently, the dithiocarbamates have also been described as CAIs possessing IOP lowering effects in animal models of glaucoma. CAIs are used alone or in combination with other drugs such as adrenergic agonist/antagonists, or PG analogs, being an important component of the antiglaucoma drugs armamentarium.

ISBN: 978-93-88746-00-7

Development And Validation Of A Simultaneous Analytical Method For Non-Steroidal Therapeutic Compounds In Cosmetics Using Liquid Chromatography-Mass Spectrometry

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ABSTRACT

Atopic dermatitis is a typical chronic inflammatory skin disease that affects all age groups and requires basic skin care for treatment. Anti-inflammatory and antiallergy steroids are the most frequently used treatments but they are limited due to their side effects caused by a weakening of the immune system. Many consumers focus on performance as a criterion for selecting cosmetics. However, steroids have been illegally used to improve the performance of cosmetics, and consumers have been adversely affected by the corresponding side effects. In this paper, we propose a simple and rapid method using liquid chromatography-tandem mass spectrometry to simultaneously analyze ten non-permitted atopic therapeutic compounds in cosmetic products: chlorpheniramine maleate, ketotifenfumarate, doxepin hydrochloride, azelastine hydrochloride, bufexamac, clotrimazole, tranilast, fusidic acid, tacrolimus, and pimecrolimus. Additionally, the major characteristic fragment ions for tacrolimus, pimecrolimus, and clotrimazole were identified by time-of-flight mass spectrometry. The specificity, linearity, limit of detection, limit of quantification, recovery, precision, accuracy, and stability of the proposed method were validated. The limit of detection and quantification were in the ranges of 5.05-203.30 pg/mL and 15.15-609.90 pg/mL, respectively. The proposed analysis method could help improve the safety management of cosmetics.

ISBN: 978-93-88746-00-7

Development and Validation of a Spectrophotometric method for estimation of Rasagiline Mesylate in bulk and tablet dosage Form

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ABSTRACT

Rasagiline mesylate is a new molecule which acts as irreversible monoamine oxidase inhibitor used for the treatment of idiopathic parkinson's disease. The aim of present work was to develop a simple, accurate, reproducible and cost effective spectrophotomeric method for determination of Rasagiline mesylate in a pharmaceutical dosage form using phosphate buffer pH 6.8 as a solvent. The drug in solution form showed absorption maxima at 265 nm and obeys Beer's Lambert's law in concentration range 100-300 µg/ml. The regression equation was y = 0.003x + 0.0056 and correlation coefficient of (R^2) 0.9995. The limit of detection and limit of quantification was found to be 2.915 µg/ml and 8.833 µg/ml. Percent relative standard deviation values for the intra-day and inter-day precision were found to be 0.4308 and 0.6160 respectively. Mean % recovery was 100.45%. The proposed method was successfully applied for determination of Rasagiline mesylate in a tablet dosage form without any interference from common excipients.

Development and Validation of a Quantification Method for L-Dopa in Plants and Pharmaceutical Materials

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ABSTRACT

L-Dopa is an antiparkinsonian drug and is used per oral application. A reliable liquid chromatographic method for determination of L-Dopa in leaves, flowers and seeds of Viciafaba L. grown in Turkish habitats and pharmaceutical dosage forms has been developed. The analysis has been carried out using Ace C18 (5 µm, 4.6 x 250 mm,) column, and the separation was carried out using a mobile phase consisting of 50 mM potassium dihydrogen phosphate (pH 2.3) at a flow rate of 1.2 mL min-1 with UV detection at 280 nm. The method has been validated according to the acceptance criteria of the ICH guidelines. The method demonstrated good linearity (R2 > 0.999) over the assayed concentration range, good intra-day and inter-day precision. The detection limit (LOD) and the quantification limit (LOQ) values were determined as 1.70 and 5.13 µg mL-1 for L-Dopa. Developed method has been successfully used for the determination of L-Dopa in pharmaceutical formulations and plant materials.

ISBN: 978-93-88746-00-7

An Overview of Methods for L-Dopa Extraction and Analytical Determination in Plant Matrices

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ABSTRACT

L-dopa is a precursor of dopamine used as the most effective symptomatic drug treatment for Parkinson's disease. Most of the L-dopa isolated is either synthesized chemically or from natural sources, but only some plants belonging to the Fabaceae family contain significant amounts of L-dopa. Due to its low stability, the unambiguous determination of L-dopa in plant matrices requires appropriate technologies. Several analytical methods have been developed for the determination of L-dopa in different plants. The most used for quantification of L-dopa are mainly based on capillary electrophoresis or chromatographic methods, i.e., high-performance liquid chromatography (HPLC), coupled to ultraviolet-visible or mass spectrometric detection. HPLC is most often used. The aim is to give information on the latest developments in the chemical study of L-dopa, emphasizing the extraction, separation and characterization of this compound by chromatographic, electrochemical and spectral techniques. This study can help select the best possible strategy for determining L-dopa in plant matrices using advanced analytical methods.

Analytical Method Development and its Validation for Estimation of Selagiline Hydrochloride by Reversed Phase High Performance Liquid Chromatography (RP-HPlC)

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ABSTRACT

An analytical method has been developed and validated for estimation of selegiline hydrochloride in pharmaceutical dosage form (tablet) by RP-HPLC. The chromatography was carried out isocratically by a BDS Hypersil C18 column (250 x 4.6 mm, 5 µm) with a mixture of Acetonitrile:buffer (ammonium dihydrogen phosphate salt) in the ratio of 20:80v/v as mobile phase. Detection was carried out using a UV detector at 205 nm wavelength. The drug was well resolved on the stationary phase and the retention time was found to be 6.76 minutes. System suitability parameters like, tailing factor 1.443, theoretical plate 4776.680 and injection precision 0.148% for n=6 were calculated. The developed method was found to be accurate, precise and linear. The calibration curve was found to be linear (R 2 =0.999) in the concentration range of 80-130 µg/ml for selegiline hydrochloride.

ISBN: 978-93-88746-00-7

A Review on Analytical Method Development and Validation

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ABSTRACT

The top objective of any pharmaceutical industry is to produce products of necessary characteristic and quality reliably, in a cost-effective manner. Development of a method is essential for discovery, development, and evaluation of medicines in the pharmaceutical formulation. The main aim of this review article was to check the development and validation of the procedure employed for the medication from the starting of the formulation to the complete commercial batch of product. At the point when an analytical technique is applied to produce outcomes for the quality of medicine associated samples, it is necessary that the outcomes are reliable. In the pharma industry, validation policy is documented for how to perform validation, types of validation and validation policy are complied with the necessities of good manufacturing practice (GMP) regulations. Validation is very important for the effective running of the pharmaceutical firms. At every stage from raw material to the finished, stability, everywhere validation was performed. The method was developed properly, and validation parameters are explained in terms of accuracy, specificity, precision, limit of detection (LOD), limit of quantitation (LOQ), ruggedness, robustness, and system suitability testing with the example of certain drugs. All validation parameters are used in the routine and stability analysis.

Method Development and Validation of Atenolol Using Two Hplc Systems

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ABSTRACT

A reverse phase high performance liquid chromatography (RP-HPLC) method was developed and validated for the determination of Atenolol (ATN) in bulk and pharmaceutical formulation. The method was optimized selecting chromatographic conditions of 60: 40 acetonitrile: water, Inertsil_ column (ODS-3 250 mm × 4.6 mm 5 ?m), 20 ?L injection volume, flow rate of 1 mL/min at ambient temperature (30 °C), and 276 nm. Using two HPLC systems of first HPLC system coupled with PDA detector and the second HPLC system coupled with UV detector showed no big difference in the method results. The method was validated giving good precision (RSD% < 1), acceptable linearity (R^2 > 0.998), and low LOD and LOQ (0.5 and 1.5 ?g/mL, respectively) on both systems. Successful application on pharmaceutical dosage tablet form gave high recovery of 97.7%. The proposed method is economic, simple, and rapid and hence can be employed for routine analysis in quality control laboratories.

ISBN: 978-93-88746-00-7

Antibacterial activity of leaf extract of Cassia alata separated by soxhlet extraction method

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ABSTRACT

Cassia alata belongs to the family Caesalpiniaceae. Leaf extract of this plant have been reported that it posses medicinal property and used against ringworm, scabies, ulcers and other skin disease such as pruritis, eczema and itching. Many reports are available on the antimicrobial activity of the plant extracts. The aim of the present work was to estimate the antibacterial activity of the of leaf extract of Cassia alata produced by soxhlet extraction method. The solvent selected for this study was hydro-alcohol. The plant extract was tested against pathogenic gram positive and negative bacterial strains viz., Escherichia coli, Proteus vulgaris, Pseudomonas aeruginosa, Bacillus subtilis, Staphylococcus aureus and Serratiamarcescens by agar disc diffusion method. The concentration was made as 5µl, 10µl and 20µl to check the bacterial growth and the activity was found good with the high concentration. It was also compared with standard antibiotics (Rifamycin, Amoxyclav).This study showed that the plant extract comparatively work better than the standard drug, Amoxyclav in order to control the pathogenic bacteria.

Effects of flavonoids and vitamin C on oxidative DNA damage to human lymphocytes

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ABSTRACT

This study assessed the antioxidant potencies of several widespread dietary flavonoids across a range of concentrations and compared with vitamin C as a positive control. The antioxidant effects of pre-treatment with flavonoids and vitamin C, at standardized concentrations (7.6, 23.2, 93, and 279.4 micromole/L), on oxygen radical-generated DNA damage from hydrogen peroxide (100 micromol/L) in human lymphocytes were examined by using the single-cell gel electrophoresis assay (comet assay). Pre-treatment with all flavonoids and vitamin C produced dose-dependent reductions in oxidative DNA damage. At a concentration of 279 micromole/L, they were ranked in decreasing order of potency as follows: luteolin (9% of damage from unopposed hydrogen peroxide), myricetin (10%), quercetin (22%), kaempferol (32%), quercitrin (quercetin-3-L-rhamnoside) (45%), apigenin (59%), quercetin-3-glucoside (62%), rutin (quercetin-3-beta-D-rutinoside) (82%), and vitamin C (78%). The protective effect of vitamin C against DNA damage at this concentration was significantly less than that of all the flavonoids except apigenin, quercetin-3-glucoside, and rutin. The

ISBN: 978-93-88746-00-7

ranking was similar with estimated ED50 (concentration to produce 50% protection) values. The protective effect of quercetin and vitamin C at a concentration of 23.2 micromol/L was found to be additive (quercetin: 71% of maximal DNA damage from unopposed hydrogen peroxide; vitamin C: 83%; both in combination: 62%). These data suggest that the free flavonoids are more protective than the conjugated flavonoids (eg, quercetin compared with its conjugate quercetin-3-glucoside, $P < 0.001$). Data are also consistent with the hypothesis that antioxidant activity of free flavonoids is related to the number and position of hydroxyl groups.

Application of monolithic columns in pharmaceutical analysis. Determination of indomethacin and its degradation products.

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ABSTRACT

Comparison of HPLC methods using conventional particle-based and monolithic columns for determination of indomethacin and its two degradation products, viz. 5-methoxy-2-methylindoleacetic acid and 4-chlorobenzoic acid, was carried out. Ketoprofen was used as an internal standard for data evaluation throughout the study. Conventional separation was based on analytical column Zorbax SB-Phenyl (75x4.6 mm; 3.5 microm particles) used with a mobile phase composition of acetonitrile and phosphoric acid 0.2% (50:50, v/v) and isocratic flow at 0.6 mL/min. Three different lengths of Chromolith columns RP-18e (25x4.6 mm, 50x4.6 mm, and 100x3 mm) were tested with respect to the validation parameters peak asymmetry, resolution, height equivalent to a theoretical plate, repeatability, and after optimisation compared to values obtained using a conventional Zorbax column. The developed methods were used to determine all three compounds in a pharmaceutical formulation--Indobene gel. Chromatographic parameters were comparable to those of a conventional particle-based column. The analysis time was shortened as expected (retention times were lowered by a factor of two). Moreover, the repeatability of peak areas and retention times obtained with a 50 mm monolithic column was greatly improved (RSD values were lower than 0.40%).

ISBN: 978-93-88746-00-7

Garlic, green tea and turmeric extracts-mediated green synthesis of silver nanoparticles: Phytochemical, antioxidant and in vitro cytotoxicity studies

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ABSTRACT

Phyto-synthesis of silver nanoparticles (AgNPs) was achieved using aqueous garlic, green tea and turmeric extracts, and characterized by different spectroscopic techniques. Phytochemical analysis revealed the presence of rich amount of biochemicals in these extracts, which serve as reducing and capping agents for converting silver nitrate into AgNPs. FT IR spectroscopy confirmed the role of biomolecules in the bioreduction and efficient stabilization of AgNPs. UV-Vis DRS spectra showed a band around 450 nm characteristics of AgNPs. XRD patterns revealed the crystalline nature of the synthesized AgNPs with fcc structure. SEM and TEM analysis revealed the spherical shape of the synthesized AgNPs with an average particle size of 8 nm. EDX analysis confirmed the purity of the synthesized AgNPs with a strong signal at 3.2 kev. The antioxidant activity was assessed by ABTS, DPPH, p-NDA, H_2O_2 and DMSO scavenging assays, in which the AgNPs synthesized using green method showed remarkable activity with respect to the standard antioxidants ascorbic acid and rutin. In vitro cytotoxicity activity was tested on four cancer cell lines such as human breast adenocarcinoma (MCF-7), cervical (HeLa), epithelioma (Hep-2) and lung (A549) along with one normal human dermal fibroblasts (NHDF) cell line. The AgNPs synthesized using turmeric extract exhibits excellent antioxidant and cytotoxicity activity compared to that synthesized using other extracts.

ISBN: 978-93-88746-00-7

Determination of Phytochemical and Antioxidant Activities of Aloe vera Gel Extracts

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ABSTRACT

This study aimed to determine the phytochemical and antioxidant activities of Aloe vera gel extracts. The phytochemical obtained by different methods (methanol macerated, methanol soxhlet and aqueous extract). The extract of Aloe vera Gel was subjected to primary phytochemical screening. Methanol macerated method revealed the presence of various phytochemicals. It resulted in the abundance of flavonoids, terpenoids, steroids, tannins, alkaloids, phenolic compounds, quinines, anthraquinones, and saponins. The results for the flavonoids, tannins and Alkaloids concentrations were 3.45, 1.20 and 2.60%, respectively. To investigate the antioxidant activity, Aloe vera Gel was successively extracted using n-hexane, dichloromethane and methanol. These extracts were analyzed using the DPPH radical scavenging method. The results found that the methanol extract is more effective in the free radical antioxidant (66.85%) followed by Dichloromethane (36.80%) and then Hexane (26.85%).

ISBN: 978-93-88746-00-7

Anticarcinogenic, cardioprotective, and other health benefits of tomato compounds lycopene, α-tomatine, and tomatidine in pure form and in fresh and processed tomatoes- A Review

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ABSTRACT

Tomatoes produce the bioactive compounds lycopene and α-tomatine that are reported to have potential health-promoting effects in animals and humans, but our understanding of the roles of these compounds in the diet is incomplete. Our current knowledge gained from the chemistry and analysis of these compounds in fresh and processed tomatoes and from studies on their bioavailability, bioactivity, and mechanisms of action against cancer cells and other beneficial bioactivities including antibiotic, anti-inflammatory, antioxidative, cardiovascular, and immunostimulating effects in cells, animals, and humans is discussed and interpreted here. Areas for future research are also suggested. The collated information and suggested research might contribute to a better understanding of the agronomical, biochemical, chemical, physiological, molecular, and cellular bases of the health-promoting effects and facilitate and guide further studies needed to optimize the use of lycopene and α-tomatine in pure form and in fresh tomatoes and processed tomato products to help prevent or treat human disease

Development and validation of a high-performance liquid chromatographic method for determination of eprosartan in bulk drug and tablets.

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ABSTRACT

A simple, precise, and accurate isocratic RP-HPLC method was developed and validated for determination of eprosartan in bulk drug and tablets. Isocratic RP-HPLC separation was achieved on a Phenomenex C18 column (250 x 4.6 mm id, 5 microm particle size) using the mobile phase 0.5% formic acid-methanol-acetonitrile (80 + 25 + 20, v/v/v, pH 2.80) at a flow rate of 1.0 mL/min. The retention time of eprosartan was 7.64 +/- 0.05 min. The detection was performed at 232 nm. The method was linear in the concentration range of 10-400 microg/mL with a correlation coefficient of 0.9999. The repeatability for six samples was 0.253% RSD; the intraday and interday precision were 0.21-0.57 and 0.33-0.71% RSD, respectively. The accuracy (recovery) was found to be in the range of 99.86-100.92%.

ISBN: 978-93-88746-00-7

A Concise Review Based on Analytical Method Development and Validation of Amphetamine in Bulk and Marketed Dosage Form.

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ABSTRACT

Amphetamine is a central nervous system (CNS) stimulant. It is used in the treatment of attention deficit hyperactivity disorder (ADHD), narcolepsy, and obesity. The HPLC method for Amphetamine both bulk & in combination are given in Table no.1. Includes parameters like matrix, stationary phase, mobile phase composition, detection wavelength RF value, retention time etc. HPTLC method reported in Table no. 2 includes parameter like matrix, stationary phase, mobile phase, RF, DL etc. The table no. 3 includes the GC-MS method for Amphetamine which involve the parameters like Matrix, stationary phase, mobile phase composition, Carrier gas, Retention time, flow rate etc. The table no.4 includes the Capillary Electrophoresis method for Amphetamine which involve the parameters like Matrix, Capillaries wavelength, Separation Voltage, Temperature and pressure etc. Spectrometric methods for Amphetamine include UV-Visible Spectroscopy and IR Spectroscopy.

Stability-indicating method for simultaneous estimation of olmesartanmedoxomile, amlodipine besylate and hydrochlorothiazide by RP-HPLC in tablet dosage form

SanguJyothi

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ABSTRACT

A simple, specific, accurate and precise stability-indicating reversed-phase high-performance liquid chromatographic method was developed for simultaneous estimation of olmesartanmedoxomile (OLME), amlodipine besylate (AMLO) and hydrochlorothiazide (HCTZ) in tablet dosage form. The method was developed using an RP C18 base deactivated silica column (250 × 4.6 mm, 5 µm) with a mobile phase consisting of triethylamine (pH 3.0) adjusted with orthophosphoric acid (A) and acetonitrile (B), with a timed gradient program of T/%B: 0/30, 7/70, 8/30, 10/30 with a flow rate of 1.4 mL/min. Ultraviolet detection was used at 236 nm. The proposed method was validated for precision, accuracy, linearity, range, robustness, ruggedness and force degradation study. The calibration curves of OLME, AMLO and HCTZ were linear over the range of 50-150, 12.5-37.5 and

ISBN: 978-93-88746-00-7

31-93 µg/mL, respectively. The method was found to be sensitive. Forced degradation study was performed according to International Conference on Harmonization guidelines.

Flavonols and Flavones as Potential anti-Inflammatory, Antioxidant, and Antibacterial Compound

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ABSTRACT

Plant preparations have been used to treat various diseases and discussed for centuries. Research has advanced to discover and identify the plant components with beneficial effects and reveal their underlying mechanisms. Flavonoids are phytoconstituents with anti-inflammatory, antimutagenic, anticarcinogenic, and antimicrobial properties. Herein, we listed and contextualized various aspects of the protective effects of the flavonolsquercetin, isoquercetin, kaempferol, and myricetin and the flavones luteolin, apigenin, 3',4'-dihydroxyflavone, baicalein, scutellarein, lucenin-2, vicenin-2, diosmetin, nobiletin, tangeretin, and 5-O-methyl-scutellarein. We presented their structural characteristics and subclasses, importance, occurrence, and food sources. The bioactive compounds present in our diet, such as fruits and vegetables, may affect the health and disease state. Therefore, we discussed the role of these compounds in inflammation, oxidative mechanisms, and bacterial metabolism; moreover, we discussed their synergism with antibiotics for better disease outcomes. Indiscriminate use of antibiotics allows the emergence of multidrug-resistant bacterial strains; thus, bioactive compounds may be used for adjuvant treatment of infectious diseases caused by resistant and opportunistic bacteria *via* direct and indirect mechanisms. We also focused on the reported mechanisms and intracellular targets of flavonols and flavones, which support their therapeutic role in inflammatory and infectious diseases.

ISBN: 978-93-88746-00-7

Phytochemical Analysis, Antioxidant And Antibacterial Activity Of Pomegranate Peel

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ABSTRACT

Pomegranate (Punicagranatum L.) has been used for the prevention and treatment of a various health issues such as Cancer, diabetes, inflammation, dental plaque, dysentery, and to fight malarial parasites and intestinal infections. It is an important source of many bioactive compounds. In the present study, the potential phytochemicals present in the different extracts (Aqueous, Acetone, Ethanol and Hexane) of pomegranate peel were carried out. Phytochemical investigations included phenols, tannins, flavonoids, anthocyanins, coumarins, quinone, saponins, steroids, glycosides, cycloglycosides, terpenoids, alkaloids, fatty acids, carbohydrates, proteins and amino acids. Among these four different extracts, aqueous extracts of pomegranate peel contains more number of phytochemicals like phenols, glycosides, flavonoids, terpenoids, carbohydrates, proteins and amino acids. Antioxidant study was evaluated by performing DPPH, flavonoids, total phenolic test and FRAP assay to identify the percentage of scavenging by the chemical constituents. DPPH activity is maximum in acetone extract whereas flavonoid activity, total phenol activity and FRAP activity of pomegranate peel is maximum in ethanol extract. Antibacterial activity of pomegranate peel extract was carried out against Escherichia coli and Bacillus subtilis using Well Diffusion method on the Nutrient agar medium. Acetone and ethanolic extracts of pomegranate peel were most effective in inhibiting the growth of a number of bacteria. It is concluded that pomegranate peel is a very essential plant medicinally. A long term research project is a must to evaluate the pharmacological uses of extracts with different solvents that can be used to isolate the pure and high yield of chemical constituents from the plants.

ISBN: 978-93-88746-00-7

Development and Validation of a Dissolution Method for Pioglitazone Tablets

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ABSTRACT

Dissolution testing has emerged in the pharmaceutical field as a very important tool to characterize drug product performance. Pioglitazone hydrochloride, a frequently prescribed antidiabetic, has no dissolution assay in official monographs. The aim of the study was to develop and validate a dissolution test for the quality control of pioglitazone hydrochloride (PH) tablets containing 15 mg of active pharmaceutical ingredient (API). Results from testing sink conditions and stability at 37 °C show that PH is stable in potassium chloride buffer at pH 1.2, 1.5, 1.8, and in 0.1 N hydrochloric acid. In vitro dissolution tests of PH tablets were performed using different test conditions but always under sink conditions. The effects of filtration and deaeration were evaluated. The most discriminatory test conditions, potassium chloride buffer at pH 1.5 (900 mL at 37 ± 0.5 °C) as dissolution medium, paddle method (Apparatus 2), 75 rpm, and 60 min, were satisfactory. The UV spectrophotometric method for determination of released PH was developed and validated. The method presented linearity (r2 = 0.999) in the concentration range of 10–60 µg/mL. The recoveries were good, ranging from 96.407% to 100.24%.

Nutraceuticals--an emerging era in the treatment and prevention of cardiovascular diseases

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ABSTRACT

Foods and nutrients play a vital role in normal functioning of the body. They are helpful in maintaining the health of the individual and in reducing the risk of various diseases. Worldwide acceptance of this fact formed a recognition link between "nutrition" and "health" and the concept of "nutraceuticals" was evolved. Nutraceuticals are medicinal foods that play a role in maintaining well-being, enhancing health, modulating immunity and thereby preventing as well as treating specific diseases. Thus the field of nutraceuticals can be envisioned as one of the missing blocks in the health

ISBN: 978-93-88746-00-7

benefit of an individual. More than any other disease, the etiology of cardiovascular disease reveals many risk factors that are amenable to nutraceutical intervention. The scientific literature shows that several ingredients marketed for use in dietary supplements address each of these. The ability of nutraceuticals to positively influence cardiovascular risk factors should be recognized as an enormous opportunity in the treatment of a highly prevalent disease. Nutraceuticals hold promise in clinical therapy as they have the potential to significantly reduce the risk of side effects associated with chemotherapy along with reducing the global health care cost. In this review, an attempt has been made to summarize some of the recent research findings on garlic, omega-3-fatty acids, soy products, dietary fibres, vitamins, antioxidants, plant sterols, flavonoids, prebiotics and probiotics that have beneficial effects on the heart, in order to update the practising clinician on the benefit of using nutraceuticals for the management of cardiovascular diseases.

ISBN: 978-93-88746-00-7