PHONE: 08415-200326, 040-27037328
CELL: 9000611217

PRINCETON COLLEGE OF PHARMACY

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

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Chowdariguda (V), Korremula, Ghatkesar (M), Medchal (D), TS- 500088.

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INDEX TABLE

PRINCIPAL
Princeton College of Pharmacy,
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Ghatkesar Mdl,Medchal Dist ,Telangana.

23	Development and validation of HPTLC method for the estimation of clotrimazole in bulk drug and tablet formulation	ChakrapuRupa Devi	14
24	Novel Drug Therapy In Parkinson's Disease	Rasalasaritha	15
25	Pyrimidine: A Review on Anticancer Activity with Key Emphasis on SAR	VaishnaviMunnangi	15
26	Nanotechnology and its Application in Pharmaceutical Review	Miss Hema	16
27	Development and validation of RP-HPLC method for simultaneous estimation of docetaxel and ritonavir in PLGA nanoparticles	P Sindhuri	16
28	Flavonoids from Jovibarbaglobifera (Crassulaceae) rosette leaves and their antioxidant activity	Miss Hema	17
29	Antioxidant Phytochemicals and Antioxidant Capacity of Biofortified Carrots (Daucuscarota L.) of Various Colors	B.Shivakumar	17
30	Formulation and Evaluation of Vanishing Herbal Cream of Crude Drugs	SwethaElishetty	18
31	Development and Validation for Estimation of Clindamycin, Adapalene and Sofosbuvir in Bulk and Pharmaceutical Dosage forms by RP-HPLC Method	ChakrapuRupaDevi	19
32	Development and evaluation of a suppository formulation containing Lactobacillus and its application in vaginal diseases	Soorammagari Sunayana	20
33	Formulation Development and evaluation of Liposomal Drug Delivery System Containing Etoposide	K.Radhika	21
34	Development and validation of a stability indicating RP-HPLC method for the simultaneous determination of related substances of albuterol sulfate and ipratropium bromide in nasal solution	RoopaniMadhu	22
35	Formulation and Evaluation of Herbal Shampoo Powder	AlwalaSudhaker	23
36	Development and validation of a stability-indicating HPLC assay method for simultaneous determination of spironolactone and furosemide in table formulation	Jakkulaasrikanth	24
37	Formulation and Evaluation of Sustained Release Tablets of Venlafaxine Hydrochloride for the treatment of Depressive disorders	VaishnaviMunnangi	25

PRINCIPAL
Princeton College of Pharmacy,
Korremula Vill, Vijayapuri Colony,
Ghatkesar Mdl,Medchal Dist ,Telangana.

38	Development and Validation of a Reversed-phase HPLC Method for Simultaneous Determination of Aspirin, Atorvastatin Calcium and Clopidogrel Bisulphate in Capsules	P Sindhuri	26
39	Formulation Development and evaluation of Liposomal Drug Delivery System Containing Etoposide and its formulations-A Review	RabiaSadaf	27
40	Physicochemical Properties and Biological Activities of Garlic (Allium sativum L.) Bulb and Leek (Allium ampeloprasum L. var. Porrum) Leaf Oil Extracts	SurendarAngothu	28
41	Review on the phytochemistry and toxicological profiles of Aloe vera and Aloe ferox	SunithaChintala	29
42	Absorption, metabolism and health effects of dietary flavonoids in man	KokkulaSatyanarayana	30
43	Phytochemical screening and ant oxidative property evaluation of lipid-producing fungi	AlwalaSudhaker	31
44	Formulation and Evaluation of Rosuvastatin-Calcium Drug Transdermal Patch	D.Vijay Kumar	32
45	Formulation and Evaluation of Nanoemulsion for Solubility Enhancement of Ketoconazole	ThadkalaKiran	32
46	A Niosomal Gel of Cefoperazone Sodium for Topical Application	P Ramesh	33
47	Method Development and Validation of Mesalamine in Pharmaceutical Dosage Form: A Review	HariprasadKadiyam	33
48	Therapeutic and Pharmacological Efficacy of Selective Indian Medicinal Plants	Miss Hema	34
49	Rp-Hplc Method Development and Validation for Simultaneous Estimation of Metronidazole, Clindamycin Phosphate and Clotrimazole in Combined Pharmaceutical Dosage Forms	Miss Hema	34
50	RP-HPLC Method Development and Validation for the Simultaneous Determination of Clindamycin and Miconazole in Pharmaceutical Dosage Forms	SoorammagariSunayana	35

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A REVIEW ON DRUG INTERACTION

Bhargavi

Princeton College of Pharmacy

ABSTRACT

The topic of drug-drug interactions has received a great deal of recent attention from the regulatory, scientific, and health care communities worldwide. Nonsteroidal anti-inflammatory drugs, antibiotics and, in particular, rifampin are common precipitant drugs prescribed in primary care practice. Drugs with a narrow therapeutic range or low therapeutic index are more likely to be the objects for serious drug interactions. Object drugs in common use include hypoglycaemic, diuretics, fluoroquinolones, antiepileptic drugs, Antipsychotic ,cisapride, and antimanic. The pharmacist, along with the prescriber has a duty to ensure that patients are aware of the risk of side effects and a suitable course of action should they occur. With their detailed knowledge of medicine, pharmacists have the ability to relate unexpected symptoms experienced by patients to possible adverse effects of their drug.

PHYTOCHEMICAL SCREENING AND THE EFFECT OF SOLVENT POLARITY ON ANTIOXIDANT ACTIVITY OF KEBIUL SEED EXTRACT (CAESALPINIA BONDUC (L) ROXB.) USING DPPH METHOD

N Sravani
Princeton College of Pharmacy

ABSTRACT

Kebiul seeds have flavonoid compounds which are strong antioxidants so that they can prevent the formation of free radicals. The purpose of this research was to determine the chemical content and antioxidant activity of kebiul seed extract (Caesalpiniabonduc (L) Roxb.) based on the effect of solvent polarity. Kebiul seed extract was prepared using the maceration method using 96% ethanol, ethyl acetate and n-Hexane as solvents. Then phytochemical screening tests and antioxidant activity tests were carried out using the DPPH (1,1-diphenyl-2- picrylhydrazil) method. Ethanol extract can attract chemical compounds such as alkaloids, flavonoids, phenols, tannins, saponins and terpenoids. Meanwhile, ethyl acetate and n-Hexane extracts can attract chemical compounds such as alkaloids, saponins and steroids. The IC50 value of the 96% ethanol extract was 40.3619 µg/mL (very strong antioxidant).

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A Review On Transdermal Drug Delivery System

AlwalaSudhaker
Princeton College of Pharmacy

ABSTRACT

Today about 74% of drugs are taken orally and found to be ineffective. Developing such characters transdermal drug delivery system emerged. Delivery of drugs through the skin to achieve the effect of the drug system more commonly known as transdermal drug delivery and different from traditional drug delivery. Transdermal Drug Delivery systems (TDDS) dosage forms that involve the transport of drugs to the epidermal and / or local functional skin tissues. Therapeutic effect while the bulk of the drug is transferred to a systematic circulation. Adhesive for The transdermal drug delivery system is critical to the safety, efficacy and quality of the product. Title management for therapeutic agents offer more benefits than conventional oral and aggressive drug delivery methods. Several important. The benefits of transdermal drug delivery are limited to hepatic first pass metabolism, improving therapeutic efficacy, and maintaining a stable plasma level of the drug.

QUALITY EVALUATION OF HERBAL PRODUCTS-A REVIEW

SunithaChintala
Princeton College of Pharmacy

ABSTRACT

The use of herbal medicine and formulation to diagnose or to treat is dates back too many centuries. The meaning of herbal formulation is a dosage form which constitutes one or more herbs in well processed form in different quantities. To get desired effect, to diagnose, to treat disease of human being. It is obtained by treating herbal substances many different processes like extraction, distillation, expression, fractionation, purification, concentration, drying, and fermentation. In recent year many people around world about 80 percent of world population of turning to use herbal medicine for their healthcare. The Identification of pure herbal ingredient is important for quality of formulation therefore evaluation of the parameters based upon,physical,microbiological, therapeutic and toxicological studies are very important in the stability studies. evaluation of herbal formulation means confirmation and determination of quality and purity.This review seeks to enlighten people who are in herbal medicine on the need to establish quality evaluation parameters by using advanced analytical tools and well known standardization methods for ensuring quality and safety of herbal medicine.

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Cosmetic Product Lipstick

Polepaka Ajay Kumar

Princeton College of Pharmacy

ABSTRACT

Lipstick is a cosmetic product containing natural ingredients such as pigments, waxes, oils and emollients were used to formulate lipstick. Both organic and inorganic pigments are employed. Lipsticks are one of the key cosmetics to be used by the women.

Pharmacological Review On Bambusa Tulda Roxb

SoorammagariSunayana
Princeton College of Pharmacy

ABSTRACT

Bambusatulda is one of the remedial plants of regional patrimony but it's having universal significance. Our World was contributed with a rich wealth of restorative plants. Those plants have always been the prime source of medicine in India and contemporarily they are becoming red throughout the Globe. Bambusatulda belongs to the family Poaceae, the fifth-largest flowering plant, also known as Spineless Indian bamboo, Indian Timber bamboo, and Bengal Bamboo. Bamboos are one of the earth's aged and the most beneficial plant materials. Its distributed widely in varied habitats. The very popular uses of bamboo are for architecture and construction works, medicine, agro-forestry, food, biofuel. A secretion of bamboo is a fine, siliceous matter called 'tabasheer', which is used as a cooling tonic to treat bronchial asthma and even as a stimulant. In India and China, almost the entire plant parts are used for therapeutic purposes. It is reported that raw bamboo consists of cellulose, hemicellulose, pectin, protein, vitamins, pigments, minerals fats, acetylcholine, ash constituents, lignin, tannins. The bamboo plant is possessing curative actions which can be used as anti-bacterial, to treat Hansen's disease, anti-inflammatory, diuretic, antioxidant, stimulate menstruation, neurotransmitter, cardioprotective, anti-allergic, bronchial asthma, anti-diabetic, anti-cancer activities and also used for vomiting and nose bleeding and all these activities are reported. The current analysis aims to compile the remedial values of Bambusatulda which are proven through the research using current scientific approaches and inventive scientific tools.

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A-Review on Glaucoma

Ch.Sathish Kumar

Princeton College of Pharmacy

ABSTRACT

Normal anxiety glaucoma (NTG) is an exception in the "glaucoma family" the place the foremost hazard factor, expanded intraocular pressure, is missing. If now not accelerated intraocular pressure, then what different reasons can then lead to glaucomatous optic disc change and visible discipline loss in NTG? Several chances will be discussed. Among them a greater sensitivity to normal pressure, vascular dysregulation, an abnormally excessive translaminar strain gradient and a neurodegenerative manner due to impact cerebrospinal fluid dynamics in the optic nerve sheath compartment. There are many high-quality assessment papers published on regular anxiety glaucoma (NTG). The goal of this paper is consequently no longer to add every other great evaluation on NTG however alternatively to focal point on and to talk about some viable mechanisms that are notion to be concerned in the pathophysiology of NTG and to talk about the improved and weaker components of every concept. The reality that various standards exist suggests that NTG is nevertheless no longer very nicely understood and that no single mechanism on its personal would possibly correctly give an explanation for NTG.

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Artificial Intelligence in the Pharmaceutical Industry – An Overview of Innovations.

Miss Hema
Princeton College of Pharmacy

ABSTRACT

The productivity of the pharmaceutical industry is on the decline. Failure rates in clinical trials exceed 90% after therapies are tested in model organisms, and the cost to develop a new drug exceeds $2.6 billion. Recent advances in artificial intelligence (AI) may help to reverse this trend and accelerate and improve pharmaceutical R&D. While the term AI and the concept of deep learning are not new, recent advances in high-performance computing, the availability of large annotated data sets required for training, and new frameworks for implementing deep neural networks (DNNs) resulted in an unprecedented acceleration of the field. Since 2014, DNNs have surpassed human accuracy in image, voice and text recognition, autonomous driving, and many other tasks. Early presentations to the pharmaceutical industry on the advances in deep learning in 2014 and 2015 resulted in skepticism and were discarded. In 2017, many pharmaceutical companies started partnering with AI startups and academics or started internal R&D programs. From training DNNs on transcriptional response data for predicting the pharmacological properties of small molecules and biomarker development, to the generation of novel chemistry, deep learning techniques rapidly propagated into many areas of biomedical research

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Diabetes Mellitus-A Review of Current Trends

B.Pravallika

Princeton College of Pharmacy

ABSTRACT

Diabetes mellitus is a chronic disorder of carbohydrates, fats and protein metabolism. A defective or deficient insulin secretary response, which translates into impaired carbohydrates (glucose) use, is a characteristic feature of diabetes mellitus, as is the resulting hyperglycemias [1] Diabetes mellitus (DM) is commonly referred to as a "sugar" and it is the most common endocrine disorder and usually occurs when there is deficiency or absence of insulin or rarely, impairment of insulin activity (insulin resistance) [2]. The International Diabetes Federation (IDF) estimates the total number of diabetic subjects to be around 40.9 million in India and this is further set to rise to 69.9 million by the year 2025 [3]. Insulin and glucagon hormones both are secreted by the pancreas. Insulin is secreted by the beta (ß) cells and glucagon is secreted by the alpha (α) cells both are located in the islets of Langerhan‟s. Insulin decreases the blood glucose level by the disorders, and malignancy in future life of fetus after delivery [6]. Type II diabetes mellitus comprises 80% to 90% of all cases of diabetes mellitus. Geographical variation can contribute in the magnitude of the problems and to overall morbidity and mortality [7, 8]. Moreover, people with diabetes who undertake moderate amounts of physical activity are at inappreciably lower risk of death than inactive persons [24] It is now well established that a specific genetic constitution is required for such an event to cause [9] The growing burden of diabetes and other non- communicable diseases is one of the major health challenges to economic developments bedevilling WHO African Region states [10]. See figure (1 and 2).In diabetes, there is an aberration either in the synthesis or secretion of insulin as seen in Type 1 diabetes mellitus (T1DM) and stenosis in the pancreatic duct, or the development of resistance to insulin or its subnormal production as in the case of Type 2 diabetes (T2DM) and certain secondary diabetes.

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Development And Validation Of Rp-Hplc Method Forthe Estimation Of Torasemide In Pure Form And In Pharmaceutical Dosage Forms

R SathiyaSundar

Princeton College of Pharmacy

ABSTRACT

A simple, selective, rapid, precise and economical reverse phase high performance liquid chromatographic (RP- HPLC) method has been developed for the simultaneous estimation of Ritonavir and Lopinavir in pharmaceutical dosage form and in plasma. The method was carried out on reversephase C18 column, with mixture of methanol: water (85:15v/v) was used as a mobile phase and the pH was adjusted to 3.5 by using O- phosphoric acid, at 1ml/min flow rate. Different analytical parameters such as linearity, precision, accuracy, limit of detection (LOD), limit of quantification (LOQ), robustness were determined according to International Conference on Harmonization (ICH) guidelines. . The linear regression analysis data for the linearity plot showed good linear relationship with correlation coefficient value for Ritonavir and Lopinavir were r2=0.9998 and r2=0.9994 in the concentration range of 5-50 µg/ml, 20-200 µg/ ml respectively. Retention times of Ritonavir and Lopinavir were 4.8min and 5.9min.The described HPLC method showed to be sensitive for simultaneous determination of Ritonavir and Lopinavir with regard to the LOD and LOQ values. This method had been extensively validated.

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A Review On Bioactive Potential Of Benzoin Resin

SurendarAngothu

Princeton College of Pharmacy

ABSTRACT

Styrax benzoin (benzoin resin) is a perennial tree belonging to the family (Styracaceae). It has been cultivated in the different regions of the world for thousands of year for incense and pharmaceutical preparations. Styrax benzoin usually contains benzaldehyde, benzoic acid, benzyl benzoate cinnamic acid and vanillin. Its chemical composition is influenced by the place of its origin, geographical, and climatic conditions. Styrax benzoin has been used traditionally for the treatment of skin diseases, arthritis, wounds, muscle pain, anxiety, and nervous disorders. Benzoin oil is widely used in the food, drinks and alcoholic beverage to give flavor, and for varnishing woods. The methods of production of resins are much traditional so there is a growing need to develop the new methods to maximize the production of resins.

Four New Flavonol Glycosides From The Leaves Of Ginkgo Biloba

KornaDevamani

Princeton College of Pharmacy

ABSTRACT

Abstract: Four new flavonol glycosides, 5, 7, 5'-trihydroxy-3', 4'-dimethoxyflavonol-3-*O*-*α*-L-rhamnopyranosyl-(1→6)-*β*-D-glucopyranoside (1), quercetin 3-*O*-(6-*trans*-feruloyl)-*β*-D-glucopyranosyl-(1→2)-*α*-L-rhamnopyranoside (2), kaempferol 3-*O*-(6-*trans*-caffeoyl)-*β*-D-glucopyranosyl-(1→2)-*α*-L-rhamnopyranoside (3), myricetin 3-*O*-(6-*trans*-*p*-coumaroyl)-*β*-D-glucopyranosyl-(1→2)-*α*-L-rhamnopyranoside (4), together with nine known flavonoids and two known lignans, were isolated from the leaves of *Ginkgo biloba*. Their structures were determined by extensive spectroscopic analyses. Their cardioprotective effects against H_2O_2-induced apoptosis in H9c2 cells were also evaluated. The flavonol glycosides had stronger activity than the acylatedflavonol glycosides at the concentration of 50 μM.

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Development And Validation Of An Rp-Hplc Method For Cb13 Evaluation In Several Plga Nanoparticle Systems

RoopaniMadhu

Princeton College of Pharmacy

ABSTRACT

A simple, fast, and reversed-phase high-performance liquid chromatographic (RP-HPLC) method has been developed and validated for determining of a cannabinoid derivate, which displays potent antihyperalgesicsactivity,1-naphthalenyl[4-(pentyloxy)-1-naphthalenyl]methanone (CB13) into PLGA nanoparticles. Separation was achieved in a C18 column using a mobile phase consisting of two solvents: solvent A, consisting of acetonitrile: water : acetic acid (75 : 23.7 : 1.3 v/v), and solvent B, consisting of acetonitrile. An isocratic method (70 : 30 v/v), with a flow rate of 1.000 mL/min, and a diode array detector were used. The developed method was precise, accurate, and linear over the concentration range of analysis with a limit of detection and a limit of quantification of 0.5 and 1.25 μg/mL, respectively. The developed method was applied to the analysis of CB13 in nanoparticles samples obtained by three different procedures (SEV, FF, and NPP) in terms of encapsulation efficiency and drug release. Nanoparticles size and size distribution were also evaluated founding that NPP method presented the most lowest particle sizes with narrow-size distribution (≈320 nm) and slightly negative zeta potential (≈-25 mV) which presumes a suitable procedure for the synthesis of PLGA-CB13 nanoparticles for oral administration.

Diabetes Mellitus

D.Deepika

Princeton College of Pharmacy

ABSTRACT

“Diabetes mellitus” is a one of the most common non communicable diseases .India faces several challenge in diabetes management, including a rising prevalence in urban and rural area, lack of disease awareness among the public, limited facilitate high cost of treatment, suboptimal and rising prevalence of diabetic complication. Insulin therapy for diabetes mellitus is commonly administered by subcutaneous route, up to 4 times a day. There is an increase in the prevalence of type 1 diabetes also, but main cause of diabetes epidemic in cause of type 2 diabetes mellitus, which is more than 90% of all diabetes cases. Type 2 diabetes is a serious and chronic disease

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resulting a complex inheritance-environmental interaction along with other risk factor such as obesity and inactive life cycle.

Nanoemulsions As Vehicles For Transdermal Delivery Of Aceclofenac.

SwethaElishetty

Princeton College of Pharmacy

ABSTRACT

The aim of the present study was to investigate the potential of a nanoemulsion formulation for transdermal delivery of aceclofenac. Various oil-in-water nanoemulsions were prepared by the spontaneous emulsification method. The nanoemulsion area was identified by constructing pseudoternary phase diagrams. The Nano emulsion formulations that passed thermodynamic stability tests were characterized for viscosity, droplet size, transmission electron microscopy, and refractive index. Transdermal permeation of aceclofenac through rat abdominal skin was determined by Franz diffusion cell. A significant increase in permeability parameters such as steady-state flux (J(ss)), permeability coefficient (K(p)), and enhancement ratio (E(r)) was observed in optimized nanoemulsion formulation F1, which consisted of 2% wt/wt of aceclofenac, 10% wt/wt of Labrafil, 5% wt/wt of Triacetin, 35.33% wt/wt of Tween 80, 17.66% wt/wt of Transcutol P, and 32% wt/wt of distilled water. The anti-inflammatory effects of formulation F1 showed a significant increase ($P < .05$) in percent inhibition value after 24 hours when compared with aceclofenac conventional gel. These results suggested that nanoemulsions are potential vehicles for improved transdermal delivery of aceclofenac.

Antibacterial Activity Of Phenyl [1,2,4]Triazolo [4,3-A]-[1,8] Naphthyridines

SanguJyothi

Princeton College of Pharmacy

ABSTRACT

N- Heterocyclic triazolo-naphthridines 1a-m was screened in vitro for their antibacterial activity against the Gram-negative Escherichia coli and Grampositive Bacillus subtilis at 250 and 500 µg/disc concentrations. The known antibiotic Gentamycin was used as a standard by Vincent and Vincent method. Compounds 1g, 1j, 1k, and 1m showed potent activity by means of gentamycin as standard.

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Antibacterial, Antifungal And Antioxidant Activities Of Whole Plant Chemical Constituents Of Rumex Abyssinicu

KokkulaSatyanarayana
Princeton College of Pharmacy

ABSTRACT

Antibiotic resistance has contributed to the burden of infectious diseases both in the hospital and community setting, and represents a great threat to public health. Previous studies have revealed the role of reactive oxygen species as intermediate mediators of tissue damage, following antibiotherapies, indicating the need of associating antioxidants to these treatments. Therefore, the present work was designed to study the antibacterial, antifungal and antioxidant activities of extracts and compounds from RumexabyssinicusJacq. (Polygonaceae), as well as to investigate the antibacterial mechanisms of action of the most effective agents.

Tablet Coating

Malothusuresh

Princeton College of Pharmacy

ABSTRACT

Tablet coating is a not unusual pharmaceutical technique of applying a thin polymer-based film to a tablet or a granule containing Active Pharmaceutical Ingredients (APIs). Stable dosage paperwork are lined for some of reasons, the maximum crucial of that's controlling the discharge profiles. The amount of coating at the surface of a tablet is vital to the effectiveness of the oral dosage shape. Capsules are typically coated in horizontal rotating pans with the coating answer sprayed onto the unfastened surface of the tablet mattress. The blessings of tablet coating are flavor covering, smell overlaying, bodily and chemical protection, protects the drug from the gastric surroundings and so on. There are various strategies for tablet coating which include sugar coating, film coating, and enteric coating. Latest trends in pharmaceutical technology are the development of coating techniques which overcomes the various risks associated with solvent based coatings. In those ultra-modern technologies coating substances are at once lined onto the surface of stable dosage bureaucracy without the use of any solvent. Numerous solvent less coatings are available inclusive of electrostatic dry coating, magnetically assisted impaction

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coating, compression coating, warm soften coating, powder coating, and supercritical fluid coating. Super cell Coating generation is a innovative tablet coating that appropriately deposits managed quantities of coating substances on capsules despite the fact that they may be extraordinarily hygroscopic or friable. Magnetically assisted impaction coating, electrostatic dry coating in solvent less coatings, aqueous film coating and Super cell coating technology also are available latest technique of coating. An ideal tablet ought to be free from any visual illness or functional defect. The improvements and innovations in tablet manufacture have now not reduced the issues, often encountered in the production, instead have accelerated the troubles, in particular due to the complexities of tablet presses; and/or the extra needs of highquality. This review deal in detail approximately records, recent tablet coating technique and remedies associated with the tablet coating.

Nanotechnology And Its Application In Pharmaceutical Field-A Review

ThanduRajini
Princeton College of Pharmacy

ABSTRACT

Exploiting the special characteristics of materials at the nanoscale is known as nanotechnology. Due of the improved quality and smarter goods that nanotechnology offers, it has becoming more popular across a variety of industries. The study of incredibly small structures, ranging in size from 0.1 to 100 nm, is known as nanotechnology. A relatively recent area of science and technology is nanomedicine. Nanomedicine is the use of nanotechnology in healthcare and medicine, and it has been utilized to treat some of the most widespread illnesses, such as cancer and cardiovascular conditions. An overview of recent developments in nanotechnology in the areas of imaging and medication delivery is given in the current article. Treatment of neurodegenerative diseases like Parkinson's and Alzheimer's is made easier by advances in nanotechnology. This article discusses applications of nanotechnology in the treatment of tuberculosis, as well asthe clinical use of nanotechnology in operative dentistry, ophthalmology, surgery, visualization, tissue engineering, antibiotic resistance, and immune response. Pharmaceuticals made of nanomaterials can be used toidentify diseases considerably early.

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Trimethoprim-Sulfamethoxazole : An Overview

KurmaKirankumar
Princeton College of Pharmacy

ABSTRACT

Trimethoprim-sulfamethoxazole (TMP-SMX), also known as co-trimoxazole, is a combination of two antimicrobial agents that act synergistically against a wide variety of bacteria. Although other combinations of sulfonamides are available with trimethoprim, TMP-SMX is by far the most widely used.

Novel Technique Of Granulation

K.Radhika
Princeton College of Pharmacy

ABSTRACT

Granulation is an essential unit method withinside the manufacturing of pharmaceutical dosage bureaucracy like tablets, tablets and different dosage bureaucracy. Granulationmethod will increase flow, compressibility and content material uniformity of the powders. It inhibits the separation of mixture additives and decreases excessivequantity of pleasant particles. This method enables to attain progressed yields with much less pill production defects. Particle length of granules relies upon on theamount and feeding fee of the granulating liquid. Selecting a technique of granulation calls for complete have a look at of every component withinside the formula,the mixture of elements and their compatibility with every different is checked after, which suitable granulation method may be applied. Thecurrent technology used for granulation encompass steam granulation, moisture activated dry granulation (MADG), wet granulation technique (MGT),extrusionspheronization granulation, fluidized mattress granulation, thermal adhesion granulation method (TAGP) and foam granulation etc. have theirpersonal benefits and triumph over the risks of traditional granulation method along with dirt technology or deteriorating impact of warmth as dryingstep. The goal of gift paintings is to consciousness on the radical granulation technology.

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Development And Validation Of Hptlc Method For The Estimation Of Clotrimazole In Bulk Drug And Tablet Formulation

ChakrapuRupa Devi
Princeton College of Pharmacy

ABSTRACT

A simple, precise, accurate and rapid high performance thin layer chromatographic method has been developed and validated for the determination of clotrimazole in bulk drug and tablet dosage form. The stationary phase used was precoated silica gel $60F_{254}$. The mobile phase used was a mixture of cyclohexane:toluene:methanol:triethyleamine (8:2:0.5:0.2 v/v/v/v). The detection of spot was carried out at 262 nm. The method was validated in terms of linearity, accuracy, precision and specificity. The calibration curve was found to be linear between 200 to 1000 ng/spot for clotrimazole. The limit of detection and the limit of quantification for clotrimazole were found to be 50 ng/spot and 200 ng/spot, respectively.

Pharmacovigilance In The Pharmaceutical Industry: An Overview

Jakkulaasrikanth

Princeton College of Pharmacy

ABSTRACT

Now-a-days herbal lipsticks are gaining popularity because natural cosmetics are safe to use and easy to handle by women. Synthetic coloring agents may cause allergic reactions and were found to be carcinogenic in nature. Aim of our study was to formulate and evaluate herbal lipstick using natural edible coloring matter like cinnamon bark powder, turmeric powder, cocoa powder as a coloring agent. Along with different natural ingredients such as bees wax, butter, coconut oil, olive oil, castor oil, Vanilla & rose essence and lemon juice were used to formulate herbal lipstick. Prepared herbal lipstick were evaluated for different evaluation test such as color, texture, pH, melting point, breaking point, softening point, surface anomalies, ageing and perfume stability and also compared with marketed standard formulation. Results showed that, different evaluation parameters of prepared herbal lipstick were resembled with standard values and with marketed formulation. Study revealed that, natural edible colouring matter may be the better option for preparation.

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Novel Drug Therapy In Parkinson's Disease

Rasalasaritha

Princeton College of Pharmacy

ABSTRACT

Parkinson`s ailment is the maximum not unusual place Neuro-degenerative disorder. Several new medicinal drugs are discovered, maximum of which might be versions of formerly current merchandise, such new dosage varieties of already-authorized merchandise, or cost-saving usual formulations were proposed. These new merchandise make contributions to the general public health, protection of the people, extra get right of entry to to medication, greater client choice, and a aggressive market that complements affordability and first-rate and care. However, those new approvals that we seek advice from as novel capsules are most of the greater honestly modern merchandise that regularly assist earlier scientific care to some other level. This article consists of observe of current capsules and novel capsules withinside the Parkinson`s ailment remedy and additionally describes their medicinal chemistry i.e knowledge its structure, synthesis, structural pastime relationships, mechanism of action, healing uses, negative consequences etc. These capsules are capable in diverse regions to satiate, cause them to appropriate for its healing use and for drug formulations and discoveries.

Pyrimidine: A Review On Anticancer Activity With Key Emphasis On Sar

VaishnaviMunnangi

Princeton College of Pharmacy

ABSTRACT

Cancer is a global health challenge, it impacts the quality of life and its treatment is associated with several side effects. Resistance of the cancer cells to the existing drugs has led to search for novel anticancer agents. Pyrimidine, a privileged scaffold, is part of living organisms and plays vital role in various biological procedures as well as in cancer pathogenesis. Due to resemblance in structure with the nucleotide base pair of DNA and RNA, it is recognized as valuable compound in the treatment of cancer.

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Nanotechnology And Its Application In Pharmaceutical Review

Miss Hema

Princeton College of Pharmacy

ABSTRACT

Exploiting the special characteristics of materials at the nanoscale is known as nanotechnology. Due of the improved quality and smarter goods that nanotechnology offers, it has becoming more popular across a variety of industries. The study of incredibly small structures, ranging in size from 0.1 to100 nm, is known as nanotechnology. A relatively recent area of science and technology is nanomedicine. Nanomedicine is the use of nanotechnology in healthcare and medicine, and it has been utilized to treat some of the most widespread illnesses, such as cancer and cardiovascular conditions. An overviewof recent developments in nanotechnology in the areas of imaging and medication delivery is given in the current article. Treatment of neurodegenerative diseases like Parkinson's and Alzheimer's is made easier by advances in nanotechnology. This article discusses applications of nanotechnology in the treatment of tuberculosis, as well asthe clinical use of nanotechnology in operative dentistry, ophthalmology, surgery, visualization, tissue engineering, antibiotic resistance, and immune response. Pharmaceuticals made of nanomaterials can be used toidentify diseases considerably early.

Development And Validation Of Rp-Hplc Method For Simultaneous Estimation Of Docetaxel And Ritonavir In Plga Nanoparticles

P Sindhuri

Princeton College of Pharmacy

ABSTRACT

The main objective of the present study was to develop and validate simple, precise, sensitive and accurate RP-HPLC method for the simultaneous estimation of docetaxel (DTX) and ritonavir (RTV) in PLGA nanoparticles (PLGA-NPs).

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Flavonoids From Jovibarbaglobifera (Crassulaceae) Rosette Leaves And Their Antioxidant Activity

Miss Hema

Princeton College of Pharmacy

ABSTRACT

Seven flavonoids new for the genus Jovibarba, kaempferol 1, kaempferol 3-O-galactopyranosyl-(1 → 2)-O-α-L-rhamnopyranoside 2, kaempferol 3-O-β-D-glucoside 3, kaempferol 3-O-α-L-rhamnopyranosyl-7-O-α-D-glucofuranosyl-(1 → 2)-O-α-L-rhamnopyranoside 4, kaempferol 3-O-β-D-glucopyranoside-7-O-α-L-rhamnopyranoside 5, kaempferol 3,7,4'-O-trimethyl ether 6 and quercetin 7, were isolated from fresh and dried leaves of J.ovibarbaglobifera subsp. globifera. The structures of these compounds were established by analysis of their spectroscopic ((1)H and (13)C NMR) and spectrometric (MS) data, as well as by comparison of these with those reported in the literature. All of the flavonoids are reported for the first time from the investigated taxon. In addition the antioxidant activities in DPPH test of selected compounds were evaluated.

Antioxidant Phytochemicals and Antioxidant Capacity of Biofortified Carrots (Daucuscarota L.) of Various Colors

B.Shivakumar
Princeton College of Pharmacy

ABSTRACT

Antioxidants and antioxidant capacity of seven colored carrots were determined. Five anthocyanins, chlorogenic acid, caffeic acid, and four carotenoids were quantified by HPLC. Total phenolic content was determined according to the Folin−Ciocalteu method. Antioxidant capacities of the hydrophilic and hydrophobic fractions were determined by using the 2,2′-azinobis(3-ethylbenzothiazoline-6-sulfonic acid) (ABTS) and 2,2′-diphenyl-1-picrylhydrazyl (DPPH) methods. The relative antioxidant capacity index was determined. Anthocyanins were the major antioxidants in purple-yellow and purple-orange carrots, and chlorogenic acid was a major antioxidant in all carrots. Carotenoids did not contribute to total antioxidant capacity, but correlated with antioxidant capacity of hydrophobic extracts. Both the DPPH and ABTS assays showed that the hydrophilic extract had higher antioxidant capacity than the hydrophobic extract.This information is useful for consumers and may help horticulturists develop carrots with higher antioxidant capacity.

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Formulation and Evaluation of Vanishing Herbal Cream of Crude Drugs

SwethaElishetty
Princeton College of Pharmacy

ABSTRACT

The purpose of the present research work was to formulate and evaluate vanishing herbal cream. Herbal creams offer several advantages over other creams. The majority of existing creams which has prepared from drugs of synthetic origin, such as acyclovir, triamcinolone, calcipotriene, mometasone, extras gives fairness to face, but it has several side effects such as itching or several allergic reactions. Herbal creams do not have any of these side effects, without side effects it gives the fairness look to skin. Method carried out to prepare herbal cream was very simple. firstly, oil phase was prepared, the mixture of stearic acid (17%), potassium hydroxide (0.5%), sodium carbonate (0.5%) were melted at 70 0 c. secondly aqueous phase was prepared, mixture of alcoholic extract of crude drugs, including rhizomes of kachora plant, fruits of nagarmotha, fruits of pimpali, fruits of nutmeg, seeds of jawas plant, rhizomes of turmeric, wheat grains and cereals of urid and harbhara (4.5%), glycerin (6%), perfume (0.5%), water (71%) heated at 70 o c. then aqueous phase was added into the oil phase at 70 o c with continuous stirring. now, once the transfer was completed it was allowed to come at room temperature all the while being stirred. perfume was added at last just before the finished product was transferred to suitable container. the above prepared herbal cream was evaluated. the physical parameters such as ph, homogeneity by visual and by touch, appearance (color), rubout (spread ability, wetness), type of smear, emolliency were determined. further studies are needed to investigate this formulation for its performance.

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Development And Validation For Estimation Of Clindamycin, Adapalene And Sofosbuvir In Bulk And Pharmaceutical Dosage Forms By Rp-Hplc Method

ChakrapuRupa Devi

Princeton College of Pharmacy

ABSTRACT

A simple, accurate, rapid and precise isocratic stability indicating reversed-phase high-performance liquid chromatographic method has been developed and validated for simultaneous determination of Clindamycin and Adapalene in tablets. The chromatographic separation was carried out on C_{18} BDS Hypersil (150 x 4.6mm, 5µ) with a mixture ofmixed phosphate buffer: acetonitrile (55:45%v/v) as a mobile phase at a flow rate of 1.0mL/min. UV detection was performed at 230nm. The retention times were2.84 and 3.999min for Clindamycin and Adapalene respectively. Calibration plots were linear (r^2=0.999) over the concentration range of 25-150µg/mL for Clindamycinand2.5-15µg/mL for Adapalene. The method was validated for accuracy, precision, specificity, linearity and sensitivity. The proposed method was successfully used for quantitative analysis of tablets. No interference from any component of pharmaceutical dosage form was observed. Validation studies revealed that method is specific, rapid, reliable, and reproducible. The high recovery and low relative standard deviation confirm the suitability of the method for routine determination of Clindamycin and Adapalene in bulk and tablet dosage form.Sofosbuvir is used primarily to treat hepatitis C and viral hemorrhagic fevers. It is possible to select a sofosbuvir resistant mutant of HCV that can replicate to levels similar to wild type virus grown without sofosbuvir. Analysis of the mutations responsible for the sofosbuvir resistance may aid in understanding the mechanism of action of sofosbuvir.

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Development And Evaluation Of A Suppository Formulation Containing Lactobacillus And Its Application In Vaginal Diseases

SoorammagariSunayana
Princeton College of Pharmacy

ABSTRACT

Lactobacillus has long been considered the protective flora in the vagina that displaces and kills vaginal pathogens. Lactic acid, H2O2, and antibacterial agents such as lactocin and bacitracin produced by Lactobacillus act against the vaginal pathogens. The first objective of this research was to develop a local application pharmaceutical formulation of a vaginal suppository containing lyophilized culture of Lactobacillus. The second objective was to establish its in vivo performance by developing in vitro methods of evaluation. Lyophilized culture of Lactobacillus sporogenes was selected for this study. Three formulations of the suppositories were prepared by the molding method. Formulations I, II, and III contained cocoa butter, glycerinated gelatin, and PEG 1000 base, respectively. The prepared suppositories were characterized for physical properties. Assembly to simulate the application site was designed. Methods to evaluate the viability, production of lactic acid, and H2O2 produced by the released Lactobacillus at the application site were developed and the antagonistic activity was demonstrated. From the physical characteristics of the suppository formulations, the glycerinated gelatin suppository (formulation II) containing lyophilized Lactobacillus was found to be satisfactory. The developed assembly was satisfactory in simulating the application site. The Lactobacillus released was viable and exhibited the production of lactic acid, hydrogen peroxide, and antagonistic activity against the uropathogen. The suppository formulation containing Lactobacillus and the methods of its evaluation were successfully developed in this research work and have several applications in the vaginal diseases of women.

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Formulation Development And Evaluation Of Liposomal Drug Delivery System Containing Etoposide

K.Radhika
Princeton College of Pharmacy

ABSTRACT

Two most commonly used preparative methods, reverse phase evaporation and ethanol injection were employed to prepare cationic liposomes composed of Etoposide API, DMPG-Na polymer and Cholesterol binder, respectively. To overcome the hindrances of the reported HPLC analytical method in pharmacopeia which requires more time in preparation for solvent and also its bit tedious; we have developed and validated a simple method which will be applicable to detect and quantify actual drug in formulation as well as it can be applied for pharmacokinetics study. The resulting formulations were evaluated through morphology observation, particle size and zeta potential analysis, % entrapment efficiency and % drug loading. The results showed that liposomes prepared by ethanol injection method were of best quality and stability, with promising results. However ETNLE 5 shows best results i.e. particle size 197.3±0.21nm, polydispersity index 0.340±0.051%, and zeta potential of about -12.7±1.266mV. Entrapment efficiency 81.78± 0.78% and drug loading 89.62±2.53% is the highest as compared to all other batches. % In-vitro Drug release study showed 15% and 21% of drug was released in the first five minutes with a cumulative drug release of 58% and 78% for ETNLE 5 formulation at pH 1.2 and pH 6.4 respectively. Stability study of optimized batch showed no significant changes in evaluation parameters. Cell viability study on A-549 cells by MTT assay clarified cancer cells are inhibited by 200 µM equivalent etoposide liposomes as compared to 64.88% of free drug. These findings clarified the effect of preparative methods on performance of cationic liposome, as well as formulation factors on entrapment efficiency, and will provide important methodological reference for further study of liposomes carriers for drug delivery to tumor penetration.

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Development and validation of a stability indicating RP-HPLC method for the simultaneous determination of related substances of albuterol sulfate and ipratropium bromide in nasal solution

RoopaniMadhu
Princeton College of Pharmacy

ABSTRACT

A simple, sensitive and specific RP-HPLC method was developed for the quantification of related impurities of albuterol sulfate (AS) and ipratropium bromide (IB) in liquid pharmaceutical dosage form. The chromatographic separation employs gradient elution using an inertsil C8-3, 250mmx4.6mm, 5mum columns. Mobile phase consisting of solvent A (solution containing 2.5g of potassium dihydrogen phosphate and 2.87g of heptane-1-sulfonic acid sodium salt per liter of water, adjusted to pH 4 with orthophosphoric acid) and solvent B (acetonitrile) delivered at a flow rate of 1.0mlmin(-1). The analytes were detected and quantified at 210nm using photodiode array (PDA) detector. The method was validated as per ICH guidelines, demonstrating to be accurate and precise (repeatability and intermediate precision level) within the corresponding linear range of known impurities of AS and IB. The specificity of the method was investigated under different stress conditions including hydrolytic, oxidative, photolytic and thermal as recommended by ICH guidelines. Relevant degradation was found to take place under hydrolytic and oxidative conditions. Robustness against small modification in pH, column oven temperature, flow rate and percentage of the mobile phase composition was ascertained. Lower limit of quantification and detection were also determined. The peak purity indices (purity angle<purity threshold) obtained with the aid of PDA detection and satisfactory resolution between related impurities established the specificity of the determination. All these results provide the stability indicating capability of the method.

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Formulation And Evaluation Of Herbal Shampoo Powder

AlwalaSudhaker

Princeton College of Pharmacy

ABSTRACT

The shampoo sector is probably the largest unit sale among the hair care products since shampoos are one of the cosmetic products used in daily life. Synthetic preservatives and detergents have sometimes been the cause of adverse effects among consumer. A more radical approach in reducing the synthetic ingredients is by incorporating natural extracts whose functionality is comparable with their synthetic ingredients. A shampoo is a cleaning aid for the hair and is counted among the foremost beauty products. Today's shampoo formulations are beyond the stage of pure cleaning of the hair. Additional benefits are expected, e.g. conditioning, smoothing of the hair surface, good health of hair, e.g. hair free of dandruff, dirt, grease and lice and, above all, it is safety benefits are expected. As the scalp is one of the most absorbent part of the body, product applied to the scalp go directly to the blood, without being filtered in any way. In the scenario of changing food habits, stress level and dependent environment conditions, numbers of skin and hair disorder are encountered. Ths herbal shampoo was formulated using natural ingredient like Azadirachtaindica (neem), Acacia concinna (shikakai), Spindusmokorossi (reetha), ocimumsanctum (Tulsi), Aloevera (aloe), Embelicaofficinlis (amla), lawsoniainerms (Henna), Terminaliachebula (harda), Terminaliabalerica (bahera), centllaasiatica (brahmi) with proven efficacy of hair care preparation is prepared. The combination of several such ingredient of herbal origin has made it possible to secure highly effective dry powder shampoo. The formulation at laboratory scale was done and evaluated for number of parameters to ensure its safety and efficacy.

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Development and validation of a stability-indicating HPLC assay method for simultaneous determination of spironolactone and furosemide in tablet formulation

Jakkulaasrikanth
Princeton College of Pharmacy

ABSTRACT

The objective of the current study was to develop and validate a simple, precise and accurate isocratic stability-indicating reversed-phase high-performance liquid chromatography (RP-HPLC) assay method for the determination of spironolactone and furosemide in solid pharmaceutical dosage forms. Isocratic RP-HPLC separation was achieved on an SGE 150 × 4.6 mm SS Wakosil II 5C8RS 5-µm column using a mobile phase of acetonitrile-ammonium acetate buffer (50:50, v/v) at a flow rate of 1.0 mL/min. The detection was carried out at 254 nm using a photodiode array detector. The drug was subject to oxidation, hydrolysis, photolysis and heat to apply stress conditions. The method was validated for specificity, linearity, precision, accuracy, robustness and solution stability. The method was found to be linear in the drug concentration range of 40-160 µg/mL with correlation coefficients of 0.9977 and 0.9953 for spironolactone and furosemide, respectively. The precision (relative standard deviation; RSD) among a six-sample preparation was 0.87% and 1.1% for spironolactone and furosemide, respectively. Repeatability and intermediate precision (RSD) among a six-sample preparation were 0.46% and 0.20% for spironolactone and furosemide, respectively. The accuracy (recovery) was between 98.05 and 100.17% and 99.07 and 100.58% for spironolactone and furosemide, respectively. Degradation products produced as a result of stress studies did not interfere with the detection of spironolactone and furosemide; therefore, the assay can be considered to be stability-indicating.

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Formulation and Evaluation of Sustained Release Tablets of Venlafaxine Hydrochloride for the treatment of Depressive disorders

VaishnaviMunnangi

Princeton College of Pharmacy

ABSTRACT

The purpose of present investigation was to formulate the sustained release tablets of Venlafaxine HCl (VHL) by direct compression method using natural polymer, xanthan gum and semi synthetic polymers such as hydroxypropyl methylcellulose (HPMC) K4M, HPMC K15M, HPMC K100M and Carbopol alone or in combination. The drug and all the excipients were evaluated to study compatibility and flow properties. The prepared tablets were evaluated for tablet dimensions, weight variation test, friability, drug content and in vitro drug release study. The FTIR study of drug with all excipients showed that there was no any interaction between the drug and excipients. The precompression study of powder blend showed good flow properties. All the tablets showed dimensions and hardness within prescribed limit. Friability and weight variation test was found to be satisfactory. Drug content was found to be in the range of 94.24 to 101.02% and all the formulations sustained release of drug. Formulation containing equal concentrations of carbopol and xanthan gum showed 90.02% drug release in 12 h. From above results, it can be concluded that tablets of VHL prepared with carbopol and xanthan gum by direct compression method have sustained release of drug that may be useful in the treatment of depressive disorders.

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Development and Validation of a Reversed-phase HPLC Method for Simultaneous Determination of Aspirin, Atorvastatin Calcium and Clopidogrel Bisulphate in Capsules

P Sindhuri

Princeton College of Pharmacy

ABSTRACT

A simple, accurate, rapid and precise isocratic reversed-phase high-performance liquid chromatographic method has been developed and validated for simultaneous determination of aspirin, atorvastatin calcium and clopidogrelbisulphate in capsules. The chromatographic separation was carried out on an Inertsil ODS analytical column (150×4.6 mm; 5 µm) with a mixture of acetonitrile: phosphate buffer pH 3.0 adjusted with o-phosphoric acid (50:50, v/v) as mobile phase; at a flow rate of 1.2 ml/min. UV detection was performed at 235 nm. The retention times were 1.89, 6.6 and 19.8 min. for aspirin, atorvastatin calcium and clopidogrelbisulphate, respectively. Calibration plots were linear (r^2>0.998) over the concentration range 5-30 µg/ml for atorvastatin calcium and 30-105 µg/ml for aspirin and clopidogrelbisulphate. The method was validated for accuracy, precision, specificity, linearity, and sensitivity. The proposed method was successfully used for quantitative analysis of capsules. No interference from any component of pharmaceutical dosage form was observed. Validation studies revealed that method is specific, rapid, reliable, and reproducible. The high recovery and low relative standard deviation confirm the suitability of the method for routine determination of aspirin, atorvastatin calcium and clopidogrelbisulphate in bulk drug and capsule dosage form.

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Formulation Development and evaluation of Liposomal Drug Delivery System Containing Etoposide and its formulations-A Review

Rabia Sadaf

Princeton College of Pharmacy

ABSTRACT

Two most commonly used preparative methods, reverse phase evaporation and ethanol injection were employed to prepare cationic liposomes composed of Etoposide API, DMPG-Na polymer and Cholesterol binder, respectively. To overcome the hindrances of the reported HPLC analytical method in pharmacopeia which requires more time in preparation for solvent and also its bit tedious; we have developed and validated a simple method which will be applicable to detect and quantify actual drug in formulation as well as it can be applied for pharmacokinetics study. The resulting formulations were evaluated through morphology observation, particle size and zeta potential analysis, % entrapment efficiency and % drug loading. The results showed that liposomes prepared by ethanol injection method were of best quality and stability, with promising results. However ETNLE 5 shows best results i.e. particle size 197.3±0.21nm, polydispersity index 0.340±0.051%, and zeta potential of about -12.7±1.266mV. Entrapment efficiency 81.78± 0.78% and drug loading 89.62±2.53% is the highest as compared to all other batches. % In-vitro Drug release study showed 15% and 21% of drug was released in the first five minutes with a cumulative drug release of 58% and 78% for ETNLE 5 formulation at pH 1.2 and pH 6.4 respectively. Stability study of optimized batch showed no significant changes in evaluation parameters. Cell viability study on A-549 cells by MTT assay clarified cancer cells are inhibited by 200 µM equivalent etoposide liposomes as compared to 64.88% of free drug. These findings clarified the effect of preparative methods on performance of cationic liposome, as well as formulation factors on entrapment efficiency, and will provide important methodological reference for further study of liposomes carriers for drug delivery to tumor penetration.

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Physicochemical Properties and Biological Activities of Garlic (Allium sativum L.) Bulb and Leek (Allium ampeloprasum L. var. Porrum) Leaf Oil Extracts

SurendarAngothu

Princeton College of Pharmacy

ABSTRACT

Allium species including garlic and leek exhibits a broad range of medicinal and nutritional properties. Therefore, this study investigates the physicochemical and biological activities of garlic (Allium sativum L.) and leek (A. ampeloprasum L. var. Porrum) oil extracts. The result indicated that physicochemical properties indicated that significantly higher oil yield (21.25%), ACV (2.66 mg/g), FFA (1.34%), and PV (4.10 meq/kg) and also antioxidant activities with respect to 2, 2-diphenyl-1-picrylhydrazyl, DPPH (27.60 ± 1.55%), hydrogen peroxide (12.35 ± 0.92%) free radical scavenging activities, and ascorbic acid content (25.30 ± 3.25%) were obtained for leek leaf oil extract. Stronger antibacterial activity with a maximum zone of inhibition (16.00 mm), minimum inhibitory concentration (MIC) (0.20 µg/ml), and minimum bactericidal concentration (MBC) (0.40 µg/ml) was recorded for leek oil extract against S. pyogenes. However, garlic oil has presented stronger antifungal activity with a maximum zone of inhibition (13.50 mm), MIC (0.40 µg/ml), and minimum fungicidal concentration (MFC) (0.75 µg/ml) against Candida albicans. It is concluded from the results of this investigation that oils extracts of garlic bulb and leek leaves demonstrated significant biological activities that can be used as sources for pharmaceutical and nutraceutical ingredients.

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Review on the phytochemistry and toxicological profiles of *Aloe vera* and *Aloe ferox*

SunithaChintala
Princeton College of Pharmacy

ABSTRACT

Aloe vera and *Aloe ferox* have over the years been among the most sought-after *Aloe* species in the treatment of ailments worldwide. This review provides categorized literature on the phytochemical and scientifically proven toxicological profiles of *A. vera* and *A. ferox* to facilitate their exploitation in therapy. Phenolic acids, flavonoids, tannins, and anthraquinones were the main phytochemical classes present in all the two *Aloe* species. Most of the phytochemical investigations and toxicity studies have been done on the leaves. *Aloe vera* and *Aloe ferox* contain unique phytoconstituents including anthraquinones, flavonoids, tannins, sterols, alkaloids, and volatile oils. *Aloe vera* hydroalcoholic leaf extract showed a toxic effect on Kabir chicks at the highest doses. The methanolic, aqueous, and supercritical carbon dioxide extracts of *A. vera* leaf gel were associated with no toxic effects. The aqueous leaf extract of *A. ferox* is well tolerated for short-term management of ailments but long-term administration may be associated with organ toxicity. Long-term administration of the preparations from *A. vera* leaves and roots was associated with toxic effects.This review provides beneficial information about the phytochemistry and toxicity of *A. vera* **.**

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Absorption, metabolism and health effects of dietary flavonoids in man

KokkulaSatyanarayana

Princeton College of Pharmacy

ABSTRACT

Flavonoids are polyphenolic compounds that occur ubiquitously in foods of plant origin. Over 4,000 different flavonoids have been described, and they are categorized into flavonols, flavones, catechins, flavanones, anthocyanidins and isoflavonoids. Flavonoids have a variety of biological effects in numerous mammalian cell systems, in vitro as well in vivo. Recently, much attention has been paid to their antioxidant properties and to their inhibitory role in various stages of tumour development in animal studies. Quercetin, the major representative of the flavonol subclass, is a strong antioxidant, and prevents oxidation of low density lipoproteins in vitro. Oxidized low density lipoproteins are atherogenic, and are considered to be a crucial intermediate in the formation of atherosclerotic plaques. This agrees with observations in epidemiological studies that the intake of flavonols and flavones was inversely associated with subsequent coronary heart disease. However, no effects of flavonols on cancer were found in these studies. The extent of absorption of flavonoids is an important unsolved problem in judging their many alleged health effects. Flavonoids present in foods were considered non-absorbable because they are bound to sugars as beta-glycosides. Only free flavonoids without a sugar molecule, the so-called aglycones, were thought to be able to pass through the gut wall. Hydrolysis only occurs in the colon by microorganisms, which at the same time degrade flavonoids. We performed a study to quantify absorption of various dietary forms of quercetin. To our surprise, the quercetin glycosides from onions were absorbed far better than the pure aglycone. Subsequent pharmacokinetic studies with dietary quercetin glycosides showed marked differences in absorption rate and bioavailability. Absorbed quercetin was eliminated only slowly from the blood. The metabolism of flavonoids has been studied frequently in various animals, but very few data in humans are available. Two major sites of flavonoid metabolism are the liver and the colonic flora. There is evidence for O-methylation, sulphation and glucuronidation of hydroxyl groups in the liver. Bacterial ring fission of flavonoids occurs in the colon. The subsequent

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degradation products, phenolic acids, can be absorbed and are found in urine of animals. Quantitative data on metabolism are scarce.

Phytochemical screening and ant oxidative property evaluation of lipid-producing fungi

Sanghamithra

Princeton College of Pharmacy

ABSTRACT

The increased demands for natural bioactive compounds have induced the search for unusual sources. Microorganisms, especially fungi are a potent source of secondary metabolites, which could act mainly as antioxidant compounds to prevent oxidative stress. In the present study three soil-isolated fungi Aspergillusniger, Aspergillusheteromorphus and Aspergillusfumigatus, were screened for their oleaginous property as well as their potential for the production of bioactive compounds. Fungal biomasses were freeze dried and extracted with methanol using a cold percolation process for the production of intracellular metabolites and the fungal culture media after fermentation were examined for extracellular metabolites. Intracellular and extracellular extracts of the isolated fungi along with the single-cell oils extracted from those fungi were screened for phytochemicals, which showed the presence of alkaloids, flavonoides, glycosides, phenols, saponins and terpenoids. All strains showed potent antioxidant activity, determined using 1,1-diphenyl-2-picrylhydrazyl (DPPH), 2,2-azino-bis-3-ethylbenzthiazoline-6-sulfonic acid (ABTS) and ferric reducing antioxidant power (FRAP) activity. Extracellular extract and single-cell oil of A. heteromorphus showed the highest antioxidant activity with maximum ABTS radical scavenging activity and reducing potential. Highest content of phenolic and flavonoid compounds within the isolated fungi was found to be 37.58 mg gallic acid equivalent (GAE)/g and 62.07 mg catechine equivalent (CE)/g, respectively. Chromatographic analysis of the intracellular and extracellular extracts of the fungi showed the presence of gallic acid, di-hydroxy benzoic acid, ferulic acid, quercetin, epigerin, kampferol, Transcinnamic acid, chlorogenic acid and rutin, which made them biologically important and beneficial for human health.

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Formulation and Evaluation of Rosuvastatin-Calcium Drug Transdermal Patch

D.Vijay Kumar

Princeton College of Pharmacy

ABSTRACT

Rosuvastatin calcium is an antilipemic agent that competitively inhibits hydroxymethylglutaryl-coenzyme A (HMG-CoA) reductase. Like remaining statins Rosuvastatin-calcium is also a poorly soluble drug and not exceeding 20% of bioavailability due to first pass metabolism. To overcome these drawbacks the present study aimed to formulate transdermal patch of Rosuvastatin calcium. Totally seven patches were developed by incorporating HPMC and PVP using solvent casting method. The formulations were evaluated for hardness, compatibility studies, solubility, weight variation, thickness, physical appearance, tensile strength, % drug content, % moisture content, % moisture uptake and in vitro drug release. The evaluated parameters were within the limit only. FTIR spectroscopy revealed that the drug, polymers and other excipients were compatible with each other. When compared to other formulations T1 formulation exhibited better in vitro drug release profile across the cellulose membrane. The skin irritation studies using rabbits revealed no signs of irritation or oedema, which confirms that the drug loaded and plain patches were compatible with skin. The trandermal patch loaded with Rosuvastatin-calcium used conveniently as an antilipdemic agent.

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Formulation and Evaluation of Nanoemulsion for Solubility Enhancement of Ketoconazole

ThadkalaKiran

Princeton College of Pharmacy

ABSTRACT

The aim of present research was to design and develop Nanoemulsion of ketoconazole for solubility enhancement. Ketoconazole is an imidazole antifungal agent with broad spectrum activity. It belongs to BCS class II i.e. poorly soluble and highly permeable drug. Due to its poor solubility, it is incompletely absorbed after oral dosing and bioavailability varies among individuals. The drug efficacy of topical formulation can be limited by instability due to its poor solubility in the vehicle and low permeability. Therefore, to overcome these shortcomings nanoemulsions have been designed. Nanoemulsion was formulated by aqueous titration method using myritol 318 as oil, kolliphor HS 15 as surfactant and PEG 200 as co-surfactant. Pseudo-ternary phase diagram was constructed on triplot software to identify nanoemulsion area using different concentrations of oil, Smix (surfactant and co- surfactant) and water. The formulations were evaluated for thermodynamic stability test such as droplet size, zeta potential, drug content, transmission electron microscopy and FTIR. The optimized formulation contains droplet size 627.5nm and zeta potential -15.4mv. In-vitro diffusion study of nanoemulsion showed 86.33 % release within 5hrs. Hence, it is concluded that nanoemulsion enhances the solubility of ketoconazole.

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A Niosomal Gel of Cefoperazone Sodium for Topical Application

P Ramesh
Princeton College of Pharmacy

ABSTRACT

The present study endeavors to prepare a niosomal gel of Cefoperazone sodium (CFS), as a novel dermal delivery for the treatment of skin infections. CFS loaded niosomes were prepared using different molar ratio of Tween 80 and Cholesterol by ether injection method using experimental design. The optimized formula was evaluated for DSC, XRPD and AFM. A niosomal gel with the optimized formulation was prepared in Carbopol 934 and were evaluated for gelling properties, in-vitro release, ex-vivo permeation and skin irritation study on rats. Quality by design was successfully executed to get stable (Zeta potential -30mV), nano sized (365.3 nm) niosomal vesicles. The niosomal gel of CFS showed a pH around 5.5, and a viscosity of 84.13±0.25 cps, enhanced permeation and no skin irritation. Hence, the study depicts that a superior site-specific delivery of CFS can be achieved with a niosomal gel of the drug in the treatment of skin infections.

RP-HPLC Method Development and Validation for the Simultaneous Determination of Clindamycin and Miconazole in Pharmaceutical Dosage Forms

Soorammagari Sunayana
Princeton College of Pharmacy

ABSTRACT

A simple, precise, reliable, rapid and reproducible reversed phase–high-performance liquid chromatography method was developed and validated for the simultaneous estimation of Clindamycin (CDM) and Miconazole (MCZ) present in tablet dosage forms. Chromatographic separation achieved isocratically on Inertsil ODS C18 (250x4.6 mm, 5 mm) column and buffer

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(pH 3.5) and acetonitrile (65:35 v/v) as mobile phase, at a flow rate of 1 ml/min. Detection was carried out at 220 nm. Parameters such as linearity, precision, accuracy, recovery, specificity and ruggedness are studied as reported in the ICH guidelines.

Method Development and Validation of Mesalamine in Pharmaceutical Dosage Form: A Review

HariprasadKadiyam

Princeton College of Pharmacy

ABSTRACT

Anti-inflammatory agents are the important class of drugs used in various commercial pharmaceutical formulations for the treatment of fever, inflammation and minor pain. One of the important anti-inflammatory drug is Mesalamine which belongs to the class of Amino-salicylic acid derivatives. Mesalamine is a bowel specific anti-inflammatory drug used in the treatment of inflammatory bowel diseases such as ulcerative colitis and Crohnâ€™s disease.it is available in different pharmaceutical dosage forms such as delayed release, extend release and enteric coated tablets and capsulesetc., The several of Mesalaminebrandâ€™s available in market are Apriso, Asacol MR-400mg, Lialda, Pentasa-500mg, Asalosa- 800 etc. Hence routine quality control of Mesalamine in these pharmaceutical dosage forms requires effective analytical procedures. In this present review an extensive survey of research work published in various research journals has reviewed and found that various instrumental analytical methods were developed, validated and used for the estimation of Mesalamine in bulk drug and formulation. The developed analytical methods include Spectrometric such as Ultraviolet (UV) and Visible; Spectroflourimetric and Chromatographic methods such as High Performance Liquid Chromatographic (HPLC), Reverse

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Phase High Performance Liquid Chromatographic (RP-HPLC), Ultra Performance Liquid Chromatographic (UPLC).

Therapeutic and Pharmacological Efficacy of Selective Indian Medicinal Plants

Miss Hema

Princeton College of Pharmacy

ABSTRACT

Globally, traditional herbal medicines have played a vital role in health systems, and are used to treat various acute and chronic conditions without or minimal toxic effect. Herbal plants are often used as a natural remedy to cure various health problems including tuberculosis, cancer, diabetes mellitus, heart diseases, wound healing, asthma, pharyngitis, hypertension etc. Plants rich in bioactive phytomedicine compounds such as alkaloids, flavonoids, tannins and polyphenols have been used to cure illnesses because of their various pharmacological properties. India is always known to be rich depository of medicinal plants and various forms of herbal medicine practices are considered as "living tradition". However, there is no collective report on the significant Indian medicinal plants and their current progress in medicinal plant research. Hence, the prime focus of this review is to identify and report the majorly used Indian medicinal plants that have grown in India and neighboring countries based on a complete research survey of local and international research articles. The review mainly summarizes the prominent Indian medicinal plants, their extract and its corresponding pharmacological properties such as anti-microbial,

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antioxidant, anti-diabetic, and anti-cancer etc. The significance of this review is aimed to provide a detailed and collective scientific evaluation of the key phytocompounds and its pharmacological action for the possible development of new ethnomedicine in the future.

Rp-Hplc Method Development and Validation for Simultaneous Estimation of Metronidazole, Clindamycin Phosphate and Clotrimazole in Combined Pharmaceutical Dosage Forms

Miss Hema
Princeton College of Pharmacy

ABSTRACT

A simple, efficient and reproducible Reverse Phase-High Performance Liquid Chromatography (RP-HPLC) method for simultaneous determination of metronidazole, clindamycin phosphate and clotrimazole in combined pharmaceutical dosage forms has been developed. The separation was carried out on Hypersil BDS C8 (250 × 4.6mn; 5µm) column using buffer, 13.6g of potassium dihydrogenortho phosphoric acid in 1000ml of water (adjusted to pH 2.4 with orthophosphoric acid) : acetonitrile 70:30 v/v as eluent. The flow rate was 2.3 ml/min and effluent was detected at 210 nm. The retention times of metronidazole,clindamycin phosphate and clotrimazole were 4.862 min, 5.712 min and 26.01min respectively. The percentage recovery was within the range between 99.38% and 100.31% for metronidazole, 98.76% and 100.65% for clindamycin phosphate, 99.98% and99.63% for clotrimazole. The linear ranges were found to be 80-150µg/ml (r2 = 0.9983) for metronidazole, 80-150µg/ml (r2 =0.9993) for clindamycin phosphate and 80-150µg/ml (r2 = 0.9984) for clotrimazole. The %relative standard deviation for accuracy and precision was found to be less than

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2%. Hence, the method could be successfully applied for routine analysis of metronidazole, clindamycin phosphate and clotrimazole in the combined pharmaceutical dosage form.

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