NATIONAL SEMINAR
APPLICATION OF RADIATION IN MANAGEMENT OF CANCER: FACTS, ROOTS, THREATS AND ASPIRATIONS
14th MARCH, 2019
SOUVENIR

Patrons
Shri. Arun Kharia
Shri. Anil Kharia

Convener
Dr. Sapna Malviya

MODERN INSTITUTE OF PHARMACEUTICAL SCIENCES
Alwasa, Behind Rewti Range, Sanwer, Indore (M.P.)
W: www.moderninstitutes.in | E: mipscollege10@gmail.com
Chairman Message ... .............

Our Vision is to train the students to become quality executives with a high standard of professionalism and ethics by utilizing our excellent resources, infrastructure and technological support. We plan to become a world class center of excellence in Pharma and Management education and seek to excel in five ethos’ - 1-The Culture of Innovation. 2-The Culture of Practicability. 3-The Culture of Quality. 4-The Culture of Adaptability. 5-The Culture of Excellence.

I wish best of luck to team of Modern Institute of Pharmaceutical Sciences to successfully conduct national seminar

Best wishes for successful endeavours.

Anil Kharia
Chairman Modern Institute of Pharmaceutical Sciences, Indore
CONVENER MESSAGE………………………………………………

Dear Delegates,

With the great pleasure, I welcome you on the behalf of Modern Institute of Pharmaceutical Sciences; Indore in AERB sponsored national seminar on “Applications of radiation in management of cancer: Facts, Roots, Threats and applications”.

The seminar will provide opportunity to learn enormously about radiation oncology, global perspective about the treatment along with possible combination strategies with other treatment modalities beneficial to our community and brainstorming on how to collaborate on this very important issue. The seminar will provide opportunity to learn enormously about radiation oncology its applications. Radiation therapy is emerging as a beneficial and increasingly accessible treatment option for cancer. The various discussions and highlights in aforesaid seminar include importance of radiation therapy in the treatment of cancer, Global perspective about treatment by radiation therapy, Possible combination strategies with other treatment modalities, Current Advances and Future Directions and Enhancing creativity by unfolding the knowledge of researchers.

Dr. Sapna Malviya
Convener and Head
Department of Pharmacy
Modern Institute of Pharmaceutical Sciences, Indore
ABSTRACT

OPTICAL SPECTROSCOPIC TECHNOLOGY FOR ORAL CANCER DIAGNOSIS- A JOURNEY FROM LAB TO CLINIC

Shovan K. Majumder\textsuperscript{1,2}

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Optical spectroscopic technology has garnered a great deal of interest in recent years as a promising new technique for cancer diagnosis. Its major attraction comes from its ability to provide real-time, non-invasive and automated diagnosis of cancer in a clinical situation without requiring biopsy. The talk will highlight the basic principles underlying this novel technique and its application for in situ clinical diagnosis of oral cancer. A brief overview of the research being pursued by us at Raja Ramanna Centre for Advanced Technology, Indore on the application of optical spectroscopy for clinical diagnosis of oral cancer will also be presented in this talk. The talk will also provide a glimpse of our efforts that have resulted in, over the years, photonics based diagnostic systems with increasingly improved features, and recently a tablet-computer based, compact and portable, point-of-care optical device for in situ, non-invasive and real-time diagnosis of oral cavity cancer. The entire investigation procedure per subject using this device is less than 15 minutes as compared to several hours required by the conventional biopsy followed by histopathology. The device, named “OncoDiagnoScope” has been validated as a standalone automated cancer screening tool on patients with oral neoplasia in various hospitals and cancer screening camps and found to detect cancer with an accuracy of over 90%. Our research efforts have also resulted in a USB powered, low-cost, hand-held fluorescence imaging device which is found to improve visual assessment of oral neoplasia by experienced physicians and also facilitate less skilled medical personnel identify lesions to be probed with the more accurate point spectroscopy system. The “OncoDiagnoScope” in combination with this fluorescence imaging device can serve as an automated cancer screening tool for screening population at risk in remote areas.
SPEAKER’S MESSAGE……………………………………

We are delighted to apprise you that MODERN INSTITUTE OF PHARMACEUTICAL SCIENCES, INDORE is organizing ATOMIC ENERGY REGULATORY BOARD sponsored National Seminar entitled with theme “Application of Radiation in Management of Cancer: Facts, Roots, Threats and Aspirations” on 14th March 2019.

The seminar will highlight various application of radiation in Diagnosis, Management of Cancer, Novel Methodologies used in radiotherapy, Radiation sterilization and Applications of radioisotopes.

Renowned & Eminent Experts will address on advanced cancer treatment, latest techniques and methodologies used in radiotherapy. The exploration of treats, facts, root cause, aspiration of the radiotherapy will be helpful for promising young generation.

The abstracts and selected publications will be published in International Journal of Pharmaceutical Sciences and Research Indexed in Thomson Reuters.

Sir, we request you to kindly grace the occasion with your esteemed presence as an Eminent Speaker. Your benign presence will definitely enlighten educationalist, Industrial professionals and young budding pharmacists.

We earnestly look forward for your esteemed presence to make National Seminar a grand success.

Dr. Adnan Naim
Research Scientist
Indian Institute of Technology Indore
ABSTRACT

STRESS GRANULES (SGS) IN CANCER PROGRESSION: A ROUTE TO ESCAPE APOPTOSIS POST CHEMO-/RADIO THERAPY

Dr. Adnan Naim

PhD (Griffith University, Australia)
Research Scientist
Indian Institute of Technology Indore

Stress Granules (SGs) are the cytoplasmic aggregate bodies formed as a response to cellular stress (UV irradiation, Oxidative Stress, Viral infection). The main components in SGs are RNA and RNA Binding Proteins (RBPs), which form a complex and transiently stalled the RNA translation. SGs are associated with many diseases like cancer and neurodegenerative disorders. Cancer cells are considered to exploit the formation of Stress Granule assemblies as a route to escape apoptosis and are also known to be responsible for re-emission of cancer after chemo- and radiotherapy. It is reported that radiation activates the Hypoxia Inducing Factor-1, which regulates vascular radio-sensitivity in cancer cells and controls the formation of Stress Granule.

Available evidence suggest that certain RNA Binding Proteins (RBPs) like G3BP1, G3BP2, TIA and TIAR which act as a “key component” in the formation of Stress Granules (SGs) could be used as a therapeutic target against SG formation in cancer cells and to administer the effective use of radio- and chemo- therapy against cancer progression.
I am delighted to know that Modern Institute of Pharmaceutical Sciences is organizing a one day seminar on Radiopharmaceuticals on 14\textsuperscript{th} March 2019. The seeds of use of radioactivity were laid immediately after the discovery in treatment of cancer. Since then many other elements have been made radioactive in the nuclear reactors and are in use for treatment and diagnosis of various cancer. These have changed the treatment of cancer patients and have brought hope in the life of people. I hope the upcoming pharmacists will work more in this field and develop new isotopes which can further bring hope in life of cancer patients.

My greetings and best wishes to all the participants of the seminar and success in their mission of promoting use of radiopharmaceuticals in the society.

Dr. Virendra Bhandari
Deputy Director Oncology
Sri Aurobindo Medical College and PG Institute, Indore

Dr. Virendra Bhandari
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**14th March 2019**

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POLYELECTROLYTE COATED GOLD NANORODS BASED PHOTOThermal Treatment of oral cancer

Rashmi Shrivastava*1, Khageswar Sahu1, and Shovan Kumar Majumder1,2

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2Homi Bhabha National Institute, Training School Complex, Anushakti Nagar, Mumbai, India

ABSTRACT

Gold nanorods (GNRs) because of their high absorption cross-sections in the near infrared (NIR) frequencies have received considerable attention for the photothermal treatment (PTT) of cancer. Since as-prepared gold nanorods are toxic to the host cells, coating with biocompatible polyelectrolytes like polystyrene sulfonate (PSS) and poly diallyl dimethyl ammonium chloride (PDDAC) is required to make the GNRs biocompatible. Our previous study has shown ~90% reduction in viability of monolayers of oral cancer cells (NT8e) upon photothermal treatment mediated by PSS- and PDDAC-coated GNRs using NIR laser. However, there is scanty information available on how these GNRs navigate in solid tumors after leaving the blood vessels upon in vivo application. The objective of the present study was to develop a 3D-multicellular spheroid of oral cancer cells (NT8e) as a model for the in vivo solid tumors and investigate the penetration of PSS coated GNRs and PDDAC coated GNRs in tumor spheroids (~700 nm) using spectral domain optical coherence tomography (SD-OCT). The results showed that both PSS- and PDDAC- coated GNRs penetrated the spheroids, got evenly distributed initially and later localized towards the center of the spheroid with time. To study the bystander effect in the photothermal mediated approach, we observed the temperature distribution and cell viability in the NT8e cell pellets in presence of GNRs incorporated cell layer under NIR laser illumination. A significant by-stander effect was observed and the surviving fraction was only ~10%. Overall, the studies showed that the polyelectrolyte coated GNRs are suitable for photothermal treatment of cancer cells resulting in around 90% loss of cell viability both in 2D and 3D settings.
DEVELOPMENT AND EVALUATION OF POLYHERBAL HAIR OIL FOR HAIR GROWTH

Tikadiya Trishala*, Sharma Urvashi, Malviya Sapna, Kharia Anil
Modern Institute of Pharmaceutical Sciences, Indore
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ABSTRACT

Hair is really one of human biology’s most intriguing structures, although it is commonly dismissed as being of superficial importance and an ornamental feature only. The role of hair in social communications and heat insulation cannot be undermined. Hair is originated from the small pockets present in the dermis layer of skin known as follicle. The inductive interactions of dermal and epidermal tissues are therefore likely to play an important role in regulating hair follicle growth not only during embryogenesis but also in the mature cycling follicle. Loss of hair is associated with problems in the skin. This has derived researchers to explore promising medicinal plants possessing better hair growth enhancing property. Hair loss, dandruff, hirsutism, alopecia areata are the common patient complaints, which are the sources of significant psychological and physical stress. The purpose of this work was formulation of poly herbal hair oil using *Nigella sativa*and *Hibiscus rosa-sinesis* for hair growth using various herbs. The herbal hair oil formulated was evaluated on the various parameters such as pH, viscosity, sensitivity test, saponification value, etc. The pharmacological activity on Wistar albino rats was also determined and shown satisfactory results when compared with standard formulation (Minoxidil).

**Keywords:** Hair growth, Alopecia, *Nigella sativa*, *Hibiscus rosa-sinesis*, Hair oil.
FORMULATION AND EVALUATION OF FAST DISINTEGRATING TABLET OF AMLODIPINE BESYLATE USING NATURAL SUPERDISINTEGRATS

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ABSTRACT

Amlodipine Besylate is pharmacologically classified as Calcium channel blocker used in the treatment of hypertension and angina. Literature reviews show oral bioavailability of Amlodipine besylate is around 60% and having half-life 30 to 35 hrs. The present study focused on the development of Fast disintegrating tablet of Amlodipine Besylate using natural and synthetic superdisintegrants by Direct Compression technique and prepared tablet were evaluated according to different parameters described in pharmacopoeia. The tablets prepared by sublimation method containing 10% of Locust bean showed highest in vitro drug release of 98% within 30 min. IR spectral analysis the pure drug characteristic absorption bands and formulations absorption bands have shown almost same range. The results shown that orodispersible tablets of Amlodipine besylate showing enhanced dissolution will lead to improved bioavailability and effective therapy by using Direct Compression method.

Keywords: Fast disintegrating tablet; Amlodipine besylate; Croscarmellose sodium; Crospovidone, Locust bean gum; Plantago Ovata.
DEVELOPMENT AND CHARACTERIZATION OF MICROPARTICLES FOR EFFECTIVE TREATMENT OF DIABETES MELLITUS

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ABSTRACT

Altered release drug delivery is mainly used to reduce the frequency of dosing which is the main problem associated with diabetes. Current work was aimed at preparation, characterization, and surface modification of polymeric microparticles for their controlled drug release mechanism along with decreased frequency of dosing and less side effects. There are much more side effect associated with the synthetic drugs, so to overcome by this we had chosen the drugs from herbal origin. Aegle marmelos leaves was taken as crude drug and extraction was done. Optimization of formula was done on the basis of no. of particles, size of particles and percentage entrapment efficiency. Chitosan and cholesterol based microparticles were formulated by double emulsion technique and hot melt method from which double emulsification gives better entrapment efficiency. The prepared formulations were characterized in-vitro for particle size distribution, particle shape, stability study, in-vitro drug release profile and percent drug entrapment. In-vivo studies that is Fluorescent microscopy and biodistribution study was done to know the accumulation of drug in body.

Keywords: Polymeric microparticles, Diabetes, Double emulsion technique.
FORMULATION AND EVALUATION OF HERBAL ANTIDANDRUFF SHAMPOO

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ABSTRACT

This study objective to describe the anti-dandruff and antifungal activity of ethanolic extracts from fenugreek seeds, shika kai and musa leaves. Dandruff is a common disorder affecting the scalp condition caused by yeast Malassezia M. globosa. Dandruff cannot be completely eliminated but can only be managed and effectively controlled. Many symptoms of dandruff like itching of the scalp, presence of fragments, and Redness on the scalp. That time many herbal shampoos are available in the market which have natural herbal and plant extract. In hair synthetic shampoo lead to various side effects such as toxicity to eye, Over drying of hair and deposition of salt on hair shaft. Treating the dandruff condition by herbal shampoo better than the chemical based anti-dandruff shampoo. Most of the herbs were chosen and used in several combinations for formulation of shampoo for improve antidandruff activity. Fenugreek seeds and shika kai, musa leaves possess the anti-fungal and anti-dandruff activity. We can use this shampoo on daily purpose because this herbal shampoo has no side effect and also have good anti dandruff property.

Keywords: Dandruff, Herbal Anti-Dandruff Shampoo, Pityrosporum ovale.
FORMULATION, OPTIMIZATION AND EVALUATION OF
DOCETAXEL LOADED NANOSTRUCTURED LIPID CARRIERS FOR
THE TREATMENT OF SKIN CANCER

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ABSTRACT

In the present study, nanostructured lipid carriers (NLCs) loaded with docetaxel were successfully prepared by solvent diffusion method in an aqueous system. The formulated docetaxel NLCs were evaluated for various parameters like particle size, drug entrapment efficiency, drug loading and in vitro release. The mean particle size was found to be 321nm with PDI 1.624. Drug entrapment efficiency and drug loading were determined to be 73.01% and 2.44% respectively. Controlled release of docetaxel up to 72 hrs was observed in in-vitro release study.

Keywords: Nanostructured Lipid Carrier, Topical drug delivery, Solvent diffusion method
FORMULATION OF MULTI-VITAMIN AND MULTI-MINERALS

POWDER BY USING FRUIT EXTRACT

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ABSTRACT

Nutrition, or the food we eat, provides the building blocks for a healthy body. A healthy eating plan—flexible for your health needs, lifestyle, and food preferences and how to judge food and drinks by their full powerhouse of nutrients. The results of large-scale randomized trials show that, for the majority of the population, there is overall benefit from taking multivitamin and multimineral supplements. Indeed, some studies have shown increased risk of cancers in relation to using certain vitamins regularly, but these vitamins taken with the combination of mineral may increase the benefit of both vitamins and minerals and give synergistic effect. As a complete resource on healthy eating, it covers. The preparation contains nutraceutical products such as broccoli, orange, apricot, and pumpkin has proved pharmacological activity with no side effects. The broccoli is used as anti-inflammatory, antioxidant, and anti-cancer. A pharmaceutical powder is a mixture of finely divided drugs or chemical in a dry form meant for internal and external use. Some advantages of powder they have flexibility of compounding, good chemical stability, rapid dispersion of ingredient.

Keywords: Multivitamin, Multimineral, Nutraceutical
SOLUBILITY ENHANCEMENT OF CEFADROXIL USING HYDROTROPIC AGENTS

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ABSTRACT

Solubility is one of the important parameter to achieve desired concentration of drug in systemic circulation for pharmacological response to be shown. As more than 40% of new candidates entering drug development pipeline fail because of non-optimal biopharmaceutical properties, the major cause of which is poor aqueous solubility. Several methods have been developed to increase the solubility and one of them is hydrotropy. It is a unique and unprecedented solubilization technique in which certain chemical compounds termed as hydrotropes can be used to affect a several fold increase in the aqueous solubility of sparingly soluble solutes under normal conditions. This study has shown that solid dispersions of cefadroxil enhanced the solubility as compared to pure drug and physical mixture. So it is possible to increase the solubility and dissolution characteristics of cefadroxil, by preparing a solid dispersion with water soluble carrier’s i.e. urea and sodium acetate. This might be due to solubilising effect of carriers or amorphous state of the drug in solid dispersions or entrapping of the drug in molecular state by the carrier.

Keywords: Solid Dispersion, Solubility Enhancement, Solubilization, Cefadroxil, Hydrotropy.
GELUCIRE (WAX) BASED GASTRIC FLOATING DRUG DELIVERY SYSTEM (GFDDS) FORMULATION FOR EFFECTIVE MANAGEMENT OF TYPE 2 DIABETES MELLITUS

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ABSTRACT

The global figure of people with diabetes is set to rise from the current estimate of 150 million to 300 million in 2025. A plethora of antidiabetic drugs are used in clinic, of which Metformin hydrochloride (MH) is a very widely accepted drug. It has elimination half-life of 6.5 h. In spite of its favourable clinical response and lack of significant drawbacks, chronic therapy with MH suffers from certain problems like high dose (1.5–2.0 g/day), low bioavailability (60%), and high incidence of gastrointestinal side effects. To achieve an optimal therapy focus needs on controlled/ slow release of the drug including the sophisticated Gastric floating drug delivery system (GFDDS).

GFDDS has prolonged gastric retention so improves bioavailability, reduces drug waste, and improves solubility for drugs that are less soluble in a high pH environment. Gelucire (Wax) are alternative to polymer in the design of GFDDS due to their advantages like low density, low melt viscosity, absence of toxic impurities and the potential biocompatibility and biodegradability and prevention of gastric irritation.

Gelucire (Wax) can be considered as an effective carrier for the design of a GFDDS of highly water-soluble antihyperglycemic drugs like MH for the effective management of type 2 diabetes mellitus.
FORMULATION AND EVALUATION OF WOUND HEALING CREAM USING *AEGLE MARMELOS* AND *OCIMUM SANCTUM* LEAVES EXTRACT

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**ABSTRACT**
Disruption of the anatomic and cellular stability of tissue create by thermal, physical, microbial, or immunological injury to the tissue is express as wound. Healing action engaged biochemical and cellular regeneration of structural and functional integrity of the damaged tissue. The present study was to analyze excision wound activity of extract of the leaves of *Aegle marmelos* & *Ocimum sanctum*. Experimental idea for wound healing consist of 18 male wistar albino rats weighing almost 150- 200g were used in this analysed. Group 1 serve as control group (Cream Base), Group 2 as reference control (Standard) were treated topically with Povidone-Iodine Ointment USP, Group 3 as test control were applied with cream containig 5% extract of *Aegle marmelos* & *Ocimum sanctum*. Wound healing was check on days 4, 8, 12, &16 day duration of epithelialization and rate of contraction of wound. Group 3 showed significant rate of contraction wound as compared to control group.

**Keywords:**- Wound Healing Activity, *Aegle Marmelos*, *Ocimum Sanctum*, Cream, Excision Wound Model.
ANTIFUNGAL ACTIVITY OF TOPICAL HERBAL GEL CONTAINING LEAVES EXTRACT OF CATHARANTHUS ROSEUS AND ALOE VERA AGAINST CANDIDA ALBICANS.

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ABSTRACT

Introduction: Antifungal activity of Topical Herbal gel containing Leaves extract of Catharanthus roseus and Aloe vera against Candida albicans. Material and methods: Leaves of Catharanthus and Aloe vera were collected from herbal garden of Acropolis Institute of Pharmaceutical Education and Research Indore and were identified according to their macroscopic and microscopic characters. Alcoholic extract of leaves was prepared using Soxhelt extract method which was further subjected for Phytochemical Screening, determination of alkaloid and Flavonoid content and further this extract was used in different concentration (0.2%, 0.4%, 0.6%, 0.8% and 1%) for formulation of herbal gel and evaluation of various physicochemical parameters of topical herbal gel as per guidelines and its antifungal activity was determined using Potato Dextrose medium. Result and Discussion: The fungal activity of the Catharanthus roseus and Aloe vera gel topical formulations shows dose dependent zone of inhibitions in exponential manner as compared to the standard.
FORMULATION AND EVALUATION OF HERBAL FACIAL SCRUB

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ABSTRACT

Facial scrubs are an essential part of a skin care routine. A facial scrub is usually a cream-based product that contains little exfoliating pieces that when massaged across the skin help smooth the skin by physically lifting off dry, dead skin cells. They’ve been around for many, many years and while the formulas have changed a bit, they are still a necessity in your skin care routine. Herbal Scrub: It is traditionally used for bathing after ayurvedic oil massage. Carefully dried and hygienically prepared, these can be used as a natural bath scrubber for a long time. It is a good natural antibacterial and commonly used for burning sensation and other skin diseases. There are so many benefits and reasons as to the incorporate exfoliating to your beauty routine. When exfoliates regularly its help remove ingrained dirt, old dead skin, and improve the overall look of face. When the scrub away the old flaky skin, and reveal a more soft and smooth looking skin. One that looks revived! Not only will the texture of your skin improve but will also help slow down the rate at which it ages. One of the biggest advantages of herbal exfoliation is that it cannot end up causing skin irritation.

Keywords: Face Scrub, Fresh Look, Skin Safety
FORMULATION OF MEDICINAL SOAP USING HERBAL EXTRACT OF FRUITS

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ABSTRACT

A poly herbal soap was formulated using the leaf and bark extracts of *Punica granatum*, *Solanum lycopersicum*, and *Carrica papaya*. The antioxidant medicinal soap was prepared using formulations of combination of *Punica granatum*, *Solanum lycopersicum*, and *Carrica papaya*. The prepared formulations were evaluated for various physicochemical parameters for which good characteristics were observed. Hence owing to good antioxidant effect and acceptable parameters, the prepared formulations can be further standardized and used as effective antiseptics, antimicrobial, and antibacterial soap.

Keywords: *Punica granatum*, *Solanum lycopersicum*, *Carrica papaya*, Medicinal Soap, Zone of Inhibition.
FORMULATION AND EVALUATION OF MATRIX DIFFUSION CONTROLLED TRANSDERMAL DRUG DELIVERY OF HYDRALAZINE HYDROCHLORIDE FOR THE TREATMENT OF HYPERTENSION

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**ABSTRACT**

The aim of the present study was to developed a novel matrix diffusion controlled transdermal patches of hydralazine hydrochloride with optimization of suitable polymeric blend of Eudragit L 100 (EL-100), Ethyl cellulose(EC), Polyvinylpyrrolidone(PVP), Polyvinylalcohol(PVA), Carbopol, Hydroxypropylcellulose(HPC) to achieve sustain release pattern with in the therapeutic range. Polymeric matrix transdermal patches were prepared by Eudragit L 100, Ethyl cellulose, PVP, PVA, Carbopol, HPC as the film former and n-dibultyl phthalate (n-DB) used as a plasticizer and oleic acid used as a permeation enhancer. Methanol, chloroform and water used as a solvent. Transdermal patches of hydralazine hydrochloride were prepared by solvent casting method. Different formulation were prepared by varying the different polymers. The patches were characterized evaluated for various parameters tensile strength, thickness, folding endurance, % moisture content, % moisture uptake, % drug content, % elongation In vitro release and drug excipient compatibility. Prepared transdermal patches from each batch, gave release profile for over 10 hours. Cumulative amount of drug release in 12 hours from all the prepared formulation were found to be in following order: F1>F2>F3>F4>F9>F8>F7>F10>F5.F6. Prepared patches from Eudragit L100 and PVP (F1and F2) and Ethyl cellulose and PVP exhibited good characteristics for sustained release action.

**Keywords:** Hydralazine hydrochloride, Polyvinylpyrrolidone, Polyvinyl alcohol
FORMULATION AND EVALUATION OF HERBAL EMULGEL

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ABSTRACT
The aim of the present study was to formulate and evaluate the herbal emulgel of *Ficus religiosa*, using 2 of gelling agents: Carbopol 934 and Xanthan Gum. Previous studies have showed the anti-inflammatory activity of methanolic extract of *Ficus religiosa* leaves, hence the extract was prepared. Phytochemical analysis of methanolic extract of *Ficus religiosa* also confirmed the presence of tannins, alkaloids, steroids and triterpenoids in extract of leaves. The formulated emulgels were evaluated on the basis of appearance, pH, spreadability, viscosity, drug content and in-vivo study. All the prepared emulgels showed acceptable physical properties including colour, compatibility, consistency, spreadability, pH, and higher drug release than conventional emulgel. The formulations were evaluated for anti-inflammatory activity, skin permeation and stability. In case of all evaluation parameters Xanthan gum based formulation was found to be better than carbopol based formulation.

Keywords: *Ficus Religiosa*, Carbopol 934, Xanthan Gum, Anti-inflammatory activity, Emulgel.
DEVELOPMENT OF ANTI FUNGAL CREAM USING NULEMBO NUCIFERA EXTRACT

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ABSTRACT

The main aim of this research was to evaluate the antifungal activity of leaves of Nelumbo Nucifera (Nelumbonaceae). The present study of the anti-fungal activity of Nelumbo Nucifera was evaluated. Qualitative estimation of the methanolic extract of the leaves of Nelumbo Nucifera was done. The results give good antifungal activity against candida albicans. In this research it was found that F1 formulation has better anti-fungal activity against candida albicans in comparison with of our F2 formulation. F1 formulation has given equivalent antifungal action to the standard formulation. Pharmacological activities of Nelumbo Nucifera are antifungal, antioxidant, anticancer, antiviral, anti-inflammatory and antibacterial. This study revealed that leaves of Nelumbo Nucifera give significant antifungal activity and it may be used as an antifungal agent in the form of cream formulation.

Keywords: Nelumbo Nucifera, Candida Albicanes, Antifungal, Antibacterial.
PREPARATION AND EVALUATION OF IMMEDIATE RELEASE MULTI UNIT PELLET SYSTEM OF VALSARTAN TO TREAT HYPERTENSION

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ABSTRACT

Valsartan is a angiotensin II receptor type I antagonist used in treatment of disease like hypertension, heart failure, myocardial infraction and diabetic nephropathy. It has a low and variable bioavailability which is attributed to its low water solubility. The valsartan drug powder were confirmed by FT-IR & Differential scanning calorimetry (DSC). The purpose of present study was to prepare immediate release multi-unit pellet system of valsartan which produce better dissolution of the system for better bioavailability and solubility using sodium starch glycolate and crosspovidone as a superdisintegrant and polysorbate as surfactant. The prepared pellets were evaluated for drug content, particle size, Scanning electron microscopy (SEM) and evaluated for in vitro release. The in vitro release of valsartan pellet formulation FR2 and FR6 coated with crosspovidone and sodium starch glycolate with 4% each respectively have shown maximum drug release within 15 min. The immediate release of the drug has been achieved from the pellet of formulation FR2 and FR6 with 97.35% and 99.54% respectively, which meet demand of immediate release dosage form.
FORMULATION OF HERBAL TOOTHPASTE USING GUAVA LEAVES

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ABSTRACT

Toothpaste is a tool that is used as an effective home care system. Toothpaste or gel are used with a toothbrush as an additive for cleaning and maintaining aesthetics and patient care for the improvement of oral hygiene. Toothpaste does not contain emollient fruits, flavorings or fluorine. For this study extract of guava leaves and lemon peel were used in order to form polyherbal toothpaste and was studied against evaluation parameters and resulted good characteristics. The ingredients used in the formulation were screened and selected to possess antibacterial effect.

Keywords: Toothpaste, Polyherbal, Antimicrobial Activity.
FORMULATION AND EVALUATION OF HYDROTROPIC SOLID DISPERSION OF ELUXADOLINE

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ABSTRACT

In the present investigation, newly developed hydrotropic solid dispersion technology utilizing the use of aqueous solvent was developed, that avoid the use of organic solvent and simultaneously decreasing their toxic potential. This technology was employed for preparing dispersion of Eluxadoline. Prepared solid dispersions were evaluated by Solubility analysis, IR, XRD, Drug content and In-vitro drug release. On the basis of parameter concluded that the concept or technology of hydrotropic solid dispersion method is novel, safe and also cost-effective technique for the purpose of enhancing the aqueous solubility of substance and bioavailability of poorly water soluble drugs. The tremendous enhancement in solubility of Eluxadoline is clear indication, It’s prospective to be used in future for other poorly water soluble drugs in which low bioavailability is major concern.
FORMULATION AND EVALUATION OF HERBAL BURN WOUND HEALING CREAM

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ABSTRACT

The largest organ of human body is skin that protect the internal organ from the external environment performs many functions including fluid homeostasis, thermoregulation & immunologic function and also prevent body dehydration. It can be injured by chronic wound, excision, burn tumors & other dermatological condition. In which burn are one of the most common incident that damage to the skin. Todays the topical treatment of burn is done by the use of antiseptics, antimicrobials, anti-inflammatory agents but this are not a true wound healing agents. No. of growth factors such as transforming growth factor β (TGFβ), epithelial growth factor (EGF), insulin like growth factors (IGF) having pro healing activity but their specialized methodologies & high cost required for their production are serious limitations to their routine use. The present study is emphasizes on the treatment of burn wound by using herbal cream containing herbal oils (i.e. lavender oil and tea tree oil).

Keywords: TGFB, EGF, IGF, Lavender oil, Tea tree oil.
FORMULATION AND EVALUATION OF FLOATING PULSATILE DRUG DELIVERY SYSTEM OF CIPROFLOXACIN

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ABSTRACT
The objective of the present work was to formulate and evaluate (in vitro) Floating Pulsatile tablets of ciprofloxacin, an antibiotic, which work on method based on combining principles of Floating and Pulsatile to deliver a programmed dose of drug for chronotherapy of excessively secreted gastric acid and for promoting healing of many disease. Accordingly Floating Pulsatile tablets were developed in three different steps via, preparation of drug containing core tablets using Crospovidone as a superdisintegrating agent, Pulsatile layer by compression coating using mixture of hydrophilic erodible polymer HPMC E5M and natural polymer Guar gum and buoyant layer using gel forming polymers like Carbopol 934P and gas generating agent like Citric acid and Sodium bicarbonate. The prepared tablet ciprofloxacin was characterized in preformulation studies for its solubility, organoleptic properties, drug Excipient incompatibilities. Design of experiment was done by using factorial design and various formulation were prepared. Granules for tablets were prepared by appropriate method and were studied for Bulk Density, Tapped Density, Hausner's Ratio, Compressibility Index and Angle of Repose. After compression of the granules post compression studies were performed and studied for Hardness Thickness, Friability, Weight Variation, Floating Lag Time, Floating Time and Drug Release. Floating lag time can be controlled by the hardness of the tablet. Floating lag time increases with increase in the hardness.

Keywords: Ciprofloxacin, Floating Pulsatile Tablet, HPMC E5M
FORMULATION AND EVALUATION OF REPIMELTS OF VALSARTAN FOR THE TREATMENT OF HYPERTENSION

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ABSTRACT

The objective of preparing repimelts of Valsartan, an anti hypertensive drug as fast dissolving formulations as it is very convenient and effective as compared to the conventional tablets. Crospovidone and sodium starch glycolate used as superdisintegrants. Lactose was used as glidant and mannitol as directly compressible filler. Microcrystalline cellulose used as tablet to disintegrant. The formulation was prepared by direct compression method. Six formulations (S1-S6) were prepared and evaluated for thickness which was found in the range 1.88 to 2.14, hardness was in the range 2.5 to 3.1 kg/cm², friability 0.68 to 0.91, and wetting time ranges from 30 to 63 seconds. In vitro drug release ranges from 68.81 to 98.5%. Formulation S-4 containing combination of superdisintegrants emerged as best formulation based on drug release characteristics.

Keywords: Sublingual tablets, Venlafaxine Hydrochloride, Depression
FORMULATION AND EVALUATION OF IMMEDIATE RELEASE TABLET OF CYCLOSPORINE BY DIRECT COMPRESSION METHOD

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ABSTRACT

Objective: Cyclosporine is an immunosuppressant drug to treat Rheumatoid Arthritis. The aim of the present work is to formulate and evaluate immediate release tablets of cyclosporine using super disintegrating agents.

Materials and Methods: The preformulation studies of Cyclosporine A were carried out such as solubility, FTIR, bulk density, tapped density, Hausner’s ratio, Carr’s index and Angle of repose. The immediate release tablet of Cyclosporine was formulated by direct compression method using super disintegrating agents such as Sodium Starch Glycolate, Colloidal Si Dioxide, etc. To obtain desired results different formulations were prepared with several super disintegrating agents with different ratio.

Results: Immediate release tablets of Cyclosporine had been formulated.

Keywords: Cyclosporine, Immediate release tablets, Direct compression, Super disintegrating agents.
FORMULATION AND EVALUATION OF HERBAL LIPSTICK

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ABSTRACT

Coloring skin particularly skin of face and lips an ancient practice going back to prehistoric period. Cosmetic production and formula development has evolved over the years from the days of Galen (150 AD) to the present era of automation and computerization. Not only has the technology evolved but the concern for quality has also taken the front seat. The present investigation was done to formulate herbal lipstick, since lipsticks are one of the key cosmetics to be used by the women. Attempt was also made to evaluate the formulated herbal lipsticks.

Keywords: Cosmetics, Herbs, Herbal lipstick, Formulation, Evaluation.
FORMULATION AND EVALUATION ORALLY DISINTEGRATING TABLETS USING NANO PARTICULATE IN POORLY WATER DRUGS

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ABSTRACT

Present research was Nanoparticles containing Simvastatin was prepared by Solvent Evaporation method using Pluronic F68 using DoE approach. Optimized Batch was subjected for % drug content, %, Particle size Analysis, Entrapment efficiency Scanning electron microscopy, XRD and in vitro drug release studies, and IR spectral analysis and DSC suggested compatibility between drug and formulation additive. Dissolution parameters were studied by using dissolution for Nanoparticle loaded tablet which proved increase in Saturation Solubility and Dissolution rate. Nanoparticles which gave better physical, morphological and % encapsulation in their of Stabilizers and Exipients were selected for incorporation into tablet. Oral Tablet formulations with Simvastatin was free form and in Nanoparticulate delivery system were formulated and in-vitro release studies were carried out. By considering all results of Point Analysis Nanoparticles and proceed for Tablets and Characterization of same. It shows that saturation solubility of Nanoparticle is increased up to two to three folds as compared to pure Simvastatin. Also dissolution rate is increase therefore bioavailability of Simvastatin is increases. No changes found after stability analysis for period of 1 months. Recently, major research efforts have been focused on the development of Nanotechnology-based drug delivery systems including biodegradable polymeric Nanoparticles, smart polymeric Micelles, Nanocrystals, Nanosuspension and Nanoemulsion to enhance the dissolution rate of poorly soluble drugs and improve oral bioavailability.

Keywords: Nanoemulsion, Nanoparticulate, IR, polymeric Micelles etc.
FORMULATION AND EVALUATION OF HERBAL LIPSTICK USING BETA VULGARIS TAPROOT

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ABSTRACT

Lipstick is a cosmetic product containing pigments, oils, waxes, and emollients that apply colour, texture, and protection to the lips. Many varieties of lipstick exist as with most other types of makeup, lipstick is typically, but not exclusively, worn by women. The use of lipstick dates back to ancient times. The main aim of this work is to formulate and evaluate natural lipstick from coloured pigments of Beta vulgaris taproot by using natural colouring pigment and minimising the side effects of synthetic formulations. The objective of the present work is to extract the coloured pigments from Beta vulgaris taproot, optimize the formula for the preparation of lipstick and evaluate the prepared formulations. Lipsticks were evaluated using Various parameters such as Colour, Melting point, Breaking point, Surface anomalies, Ease of application, Aging stability, pH parameter, Perfume stability, Solubility test, Skin irritation test. Out of the six formulations prepared, consistency was uniform in four formulations. Evaluation tests were performed to all formulations. From both consistency and quality control tests point of view Formulation-6 (F6) was found to be the best formulation out of the six lipsticks that are formulated.

Keywords: Betaine, Coloured Pigments, Extraction, Herbal, Beta Vulgaris Taproot.
MEDICATED CHEWING AS A NOVEL DRUG DELIVERY SYSTEM

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ABSTRACT

Chewing gums are mobile drug delivery systems. Unlike chewable tablets medicated gums was not supposed to be swallowed and may be removed from the site of application without resort to invasive means and medicated chewing gum is solid, single dose preparation. As for the patient convenience is concerned, it is discrete and easy administration without water promotes higher compliance. Since it can be taken anywhere, chewing gum formulation is an excellent choice for the acute medication. The advantages for patients and for children who find swallowing tablets difficult are obvious. The medicated chewing gums was single dose, solid preparations with a base consisting mainly of gums that are intended to be chewed, but not swallowed. They contain one or more active ingredients, which are released by chewing and are intended to be used for local treatment of mouth diseases or systemic delivery after absorption by the buccal mucosa. This concept was supported by statements that sugar free chewing gum can help reduce the risk of dental caries (cavities). The objective of this study is to appraise existing evidence concerning a possible therapeutic effect of sugar free chewing gum for patients. MCG represents the newest system with potential uses in pharmaceuticals, over the counter medicines and nutraceuticals.

Keywords: Chewing gum, Mouth diseases, Saliva, Mobile drug delivery system, Dental caries.
NANOTECHNOLOGY BASED HAIR COSMECEUTICALS

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ABSTRACT

Cosmeceuticals are topical agents that recommend properties of both cosmetics, which beautify or adjoin to manifestation, and drugs, which therapeutically improve the skin’s condition and/or undo an ailment progression. A hair cosmeceutical product comprises of conditioning agents, special care ingredients and hair growth stimulants. Hair worry is an additional capable field for nanotechnology. Nanomaterials have entered now about each private hair care merchandise on the market. Companies are utilizing the concept of nanotechnology in hair care goods and investigations are constant to realize the ways of how nanoparticles can be used to avoid hair fall and to preserve shine, velvetiness, and healthiness of hairs and also to facilitate hair growth promotions. The speedy reach and commercialization of nanotechnology in cosmeceuticals have mounted to immense industrial and economic aspirations but also issues about the budding risks to wellbeing and safety of customers. Thus, cosmeceutical goods derived from nanotechnology should be intended and sold in an approach that wholly compliments the vigor of consumers and the surroundings.

Keywords: Cosmeceuticals, Nanotechnology, Conditioning agents, Hair Care products.
A REVIEW ON SEBUMETER

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ABSTRACT

The Sebumeter is widely used in both cosmetic and medical research, for measuring changes in sebum levels on skin. Sebum is produced from secretion of sebaceous glands, fat of keratinous layer and remnants of perspiration. It is a complex and variable mixture of lipids like glycerides, free fatty acids, wax esters, squalene, cholesterol esters, and cholesterol. It is commonly reported that the units correlated to a mass of sebum on the skin in μg cm². Sebumeter can also be used for assessing the presence of other oily materials which are widely utilized in topical skincare products on skin that has not been widely discussed. Excess oiliness or excess dryness affects cosmetic appearance of the skin. Hence, estimation of oiliness is important to decide on the correct regimen to achieve cosmesis. Besides, sebum affects the permeability of skin and absorptivity of water, protects against bacteria and fungi, limits evaporation and affects permeation of pharmaceutical preparations and other active or non-active substances.

Hence measurement of natural presence of sebum on human skin particularly facial skin is a matter of current interest amongst dermatologists and pharmaceutical and cosmetic manufacturers.

Keywords: Sebum, Sebumeter, Sebaceous Glands, Cholesterol
CONTROL DRUG DELIVERY SYSTEM: A REVIEW

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ABSTRACT

Among all drug delivery systems, oral drug delivery is the most convenient option as the oral route provides maximum active surface area for administration of various drugs. The attractiveness of these dosage forms is due to awareness of ineffectiveness and toxicity to drugs when administered by oral conventional method in the form of capsules and tablets. Controlled release drug delivery system (CDDS) can be a measure advance towards solving problems and also concerned with the targeting of a drug to a specific organ or tissue. It also controls the rate of drug delivery to the target site. Controlled release (CR) oral sustain release (SR) products provide an advantage over conventional dosage forms by optimizing pharmacokinetics, pharmacodynamics and biopharmaceutics, properties of drugs in a way that it reduces dosing frequency to a level that daily dose for once is sufficient for therapeutic management through uniform plasma concentration which provides maximum utility of drug and reduces systemic and local side effects and control or cure condition in shortest possible time by small quantity of drug to assure greater patient compliance. The present article contains brief review on various formulation approaches for controlled release drug delivery (CDDS) system.

Keywords: Controlled drug delivery system, Drug release mechanism, modified Release Sustained Release.
BUCCAL MUCOADHESIVE DRUG DELIVERY SYSTEM: A REVIEW

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ABSTRACT

The article focuses on the mechanism of mucoadhesion used for drug delivery via mucosal layer of buccal cavity. Mucoadhesion can be defined as a state in which two components one of which is biological in origin are held together for extended period of time. Buccal drug delivery system is a novel drug delivery system. Mucoadhesion offers the possibility of creating an intimate and prolonged contact at the site of administration. Buccal route is one of the best way to administer drug directly into the systemic circulation. Buccal mucosal can be used for both local and systemic effects. Buccal drug delivery system involves interaction of drug with mucosal layer covering the epithelial surface of buccal cavity. The mucosa has a rich blood supply and it relatively permeable. Various mucoadhesive polymers have been utilized in different dosages forms for better adhesion. Various bioadhesive dosages form such as Chewing gum, tablets, Patches, Hydrogel, Thiolated tablets. The various advantages associated with these systems made buccal drug delivery as a novel route of drug administration. It prolongs the residence time of the dosage form at the site of application. These systems remain in close contact with the absorption tissue, the mucous membrane, and thus contribute to improved and/or better therapeutic performance of the drug and of both local and systemic effects. This review highlights the anatomy and structure of oral mucosa, mechanism and theories of mucoadhesion, factors affecting mucoadhesion, characteristics and properties of desired mucoadhesive polymers, various types of dosage forms, and general considerations in design of mucoadhesive buccal dosage forms, permeation enhancers.

Keywords: Mucoadhesion, Oral Mucosa, Buccal Delivery, Mucoadhesive Polymers, Permeation Enhancers.
REVIEW ON RECENT ADVANCES IN LYMPHATIC TARGETED DRUG DELIVERY SYSTEM FOR TUMOR METASTASIS

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ABSTRACT

The lymphatic system plays vital role as defensive mechanism in the human body. The surrounding area of lymphatic tissue highly prone to metastasis of most tumors and eventually forms lymphatic metastatic tumors; the tumor cells may even transfer to other organs to form other types of tumors. Clinically, lymphatic metastatic tumors develop rapidly. Given the limitations of surgical resection and the low effectiveness of radiotherapy and chemotherapy, the treatment of lymphatic metastatic tumors remains a great challenge. Lymph node metastasis may lead to the further spread of tumors and may be predictive of the endpoint event. The novel and effective lymphatic targeted drug delivery systems have been explored to improve the specificity of anticancer drugs to tumor cells in lymph nodes. This review summarizes the principle and mechanism of tumor growth with targeted lymphatic drug delivery with the further discussion on recent advances in the development of lymphatic targeted carriers.

Keywords: Lymphatic metastatic tumor, targeted drug delivery system, liposome, polymer micelle (PM).
A REVIEW ON ELECTRONIC DRUG DELIVERY SYSTEM

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ABSTRACT

While designing a drug delivery system, patient compliance is the most important factor which drives the advances and innovations in drug delivery. A report from a US-based market research firm (BCC research), estimated that advanced drug delivery technologies will boom to approximately $227 by 2020. Electronic drug delivery system (EDDS) is the most exciting trend among various advanced delivery systems that are interactive, portable, connected wirelessly allowing effective patient administered therapy consuming low overall healthcare cost in the development of drug delivery systems. Most commonly used EDDS capturing largest global share is the insulin pump. The development in EDDS is important for improving patient adherence as studies have also shown the potential of EDDS to provide targeted drug delivery to the particular sites in the body. Even thou, there are various drug delivery devices in the market still this review emphasis on electronic drug delivery devices, its advantages and disadvantages, applications, current trends along with its future aspects for a better future.

Keywords: Electronic Drug Delivery System, Patient Compliance, Targeted Drug Delivery, Global Share.
CREAM- A POPULAR AND DEMANDING COSMETIC PRODUCT

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ABSTRACT

Now a day, skin care plays an important role in every individual’s life as it has become an integral part of daily care regime. Creams are the preparations that everyone uses in day to day life. These are semi-solid emulsions which contain mixtures of oil and water and are usually applied on the skin or mucous membrane such as those to the rectum or vagina. These can be made as cosmetic or pharmaceutical products hence are used to fulfil both purposes: - medicated and non-medicated. Creams are classified on the basis of their use, types of skin and time of application on which they are used in various types such as cold cream, vanishing cream, moisturising cream, night cream etc. The cream that are being used as cosmeceuticals can also be made by using herbs such as turmeric, aloe, so as to avoid the side effects that arises due to long term use of synthetic creams. This review has been made to summarize about the most demanding cosmetic product cream, its type and their use as cosmeceutical and herbal creams available in market.

Keywords: Cream, Skin Care, Medicated, Non-Medicated, Cosmeceuticals
A REVIEW ON MOUTH DISSOLVING FILM

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ABSTRACT

Mouth dissolving film is the most advanced oral solid dosage form due to its flexibility and comfort in use. Mouth dissolving films are oral solid dosage form that disintegrate and dissolve within a minute when placed in mouth without taking water or chewing. This dosage form allows the medication to bypass the first pass metabolism so bioavailability of medication may be improved. Mouth dissolving film has potential to improve onset of action lower the dosing and eliminate the fear of choking. This review gives an idea about formulation techniques, evaluation parameters, overview on packaging and some available marketed products of mouth dissolving films.
A REVIEW ON APPLICATIONS OF POLYHERBAL HAIR OIL

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ABSTRACT

Cosmetics are used from ancient time for improving the appearance and also for beautification. Cosmetics are applied on skin as well as hairs. Herbal cosmetics used on hairs include Hair oil, herbal shampoo etc. Hair oils are used for increasing shine, protection of hair from humid environment, mask the hair from dust and debris. Various herbal hair oil formulations are used for preventing hair fall, increasing hair growth, providing nutrients and vitamins to the hair. Herbal extracts used in hair oils are shikhakai (Acacia concinna), Amla (Phyllanthus emblica), bhringraj (Eclipta prostrate), fenugreek (Trigonella foenum-graecum). Different herbal constituents are mixed for formulation of Polyherbal oil which serves for many purposes.

Keywords: Hair Oil, Polyherbal, Formulation, Cosmetics
REVIEW ON ANTI BACTERIAL HERBAL FACE WASH

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ABSTRACT

Herbal cosmetics are products which are used to purify, beautify and alteration the skin. Face skin is the main part of the body, which indicates the health of individual. It consist of materials such as lipids, amino acids and carbohydrates etc. so that a balanced nutrition is required for the skin to keep it clear glossy and healthy, Present review article deals with the formulation and characterization of cosmetic herbal face wash preparation. Everyone are very conscious about their beauty and started to dress themselves because they want to increase their own beauty. For the enhancement of beauty herbal face wash playing a important role. It is good attempt to establish the herbal face wash. The herbal cosmetics manufactured are used commonly for daily purpose include herbal face wash, herbal soap, herbal shampoo etc. The industry is now focusing on the growing segment with a vast scope of expansion in coming years.

Keywords: Herbal Cosmetics, Face wash, Face Pack, skin.
CO PROCESSED EXCIPIENTS: A SYNERGIST OF FUNCTIONALITY IMPROVEMENT

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ABSTRACT

Pharmaceutical excipients are the materials which are added to the formulation system in order to allow sufficient amount of bulk and other required characteristics. The excipients consider as the materials which have the desired functional quality other than the pharmaceutical active moiety and prodrug. The safety parameters in case of excipients are equally important as in API. Continues efforts made to enhance the quality and functionality of excipients so as to provide better formulation product in less efforts. Co processed technique is one of such efforts in the direction of providing the excipient with better functional qualities. Co-processed technique is new conceptual method of more than two excipients which interact at the sub particle level, the objective of which is to provide synergist improvement in functionality of components as well as mask the un-desirable characteristics of individual. The current review article is prepared to have a look over the advantages, characteristics and process of manufacturing of the co-processed excipients which are highlighting their multi-functional and beneficial characteristics.

Keywords: Excipients, Multi-functional Excipients, co-processed technique
NEW ADVANCES IN TRANSDERMAL DRUG DELIVERY SYSTEM

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ABSTRACT

Transdermal Drug Delivery System (TDDS) is the advancing area of novel drug delivery, which is designed to transport a therapeutically effective amount of drug across a patient’s skin. Transdermal drug were developed in 1970s. Transdermal patch uses a special membrane to control the rate at which the liquid drug contained in the reservoir within the patch can pass through the skin and into the bloodstream. It has been reducing the frequency of dose, achieving target delivery and avoiding hepatic first pass Metabolism. Transdermal therapies are useful after understanding the physiological nature of the skin, mostly the stratum cornium, and in rising formulation strategies to overcome this barrier. the recent techniques for enhancing penetration of TDDS are: Physical Techniques are: iontophoresis, electroporation, sonophoresis, microneedles, skin abrasion, needle-less injection, thermophoresis. Chemical Techniques are: prodrug, salt formation, chemical enhancer, and other innovations: despence for transdermal patch magnetophoresis combined with chemical enhancer.

Keywords: TDDS, Transdermal Patch, First pass metabolism
A REVIEW ON FOOD PRESERVATION

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ABSTRACT

Every living organism needs food to live. Foods have many nutrients like carbohydrates, fats, proteins, vitamins, or minerals etc. These nutrients are ingested and digested by an organism to produce energy which is required to stimulate growth and maintain normal life process. Chemical, enzymatic or microbial activities from the surrounding environment and the food itself can cause spoilage to food products. The food has limited shelf life, in order to increase the shelf life and maintain the quality certain preservatives are used in food products but these preservatives may have some harmful effects. So that nowadays consumer demand of minimally processed foods without synthetic preservatives has led to a growing interest in their replacement for more natural alternatives. An ideal preservative should be effective at low concentrations, be non-toxic and compatible with other constituent of the preparation and be stable for the shelf-life of the preparation. This review paper focuses on, the preservation methods of food to maintain or protect the quality of food, and the use of natural food preservatives as alternative to artificial preservatives, for safer human consumption.

Keywords: Preservation, Natural preservatives, Shelf life, Nutritional values
OSMOTIC DRUG DELIVERY SYSTEM: A REVIEW

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ABSTRACT

Generally oral drug delivery systems do distribute the drug and reach the targeted system with less control effective plasma concentration for a longer period of time. Hence to avoid the limitation the various controlled drug delivery systems are developed. These osmotic drug delivery system (ODDS) based on the principle of osmotic pressure and delivers dose of the drug in an optimized manner to maintain drug concentration within the therapeutic window and minimizes toxic effects of the drugs. Osmotic drug delivery system releases drug at a controlled rate that is independent of the pH and thermodynamics of dissolution medium. The release pattern of drug from Osmotic drug delivery system follows zero order kinetics. The drug release from osmotic drug delivery system depends upon various factors such as solubility, osmotic pressure of the core components, size of the delivery orifice and nature of the rate controlling membrane. Controlled porosity osmotic pump contains drug, osmogens, additives in core and a coating of the semipermeable membrane with water soluble additives. In controlled porosity osmotic pump water soluble additives dissolve after coming in contact with water, resulting in an in situ formation of a microporous membrane. The present study gives an idea about osmosis, controlled porosity osmotic pump, components of controlled porosity osmotic pump and its evaluation.

Keywords: Osmotic drug delivery system, controlled release.
HERBAL NIGHT MASSAGE CREAM- A POPULAR & DEMANDING COSMETIC PRODUCT

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ABSTRACT

The idea of beauty and cosmetics is as ancient as mankind and advancement. Indian herbs and its consequence are popular worldwide. An herbal cosmetic have growing demand in the world market and is a crucial gift of nature. Herbal formulations always have attracted substantial attention because of their good activity and comparatively lesser or nil side effects with synthetic drugs. Herbal cosmetics are defined as the beauty products which posses sensible physiological activity such as healing, nourishing appearance, enhancing and conditioning properties because of herbal ingredient. A brief description about advantages, limitations, components, method of preparation and evaluation of herbal night massage cream are explained in the present paper.
DIFFUSE REFLECTANCE SPECTROSCOPY FOR MONITORING ACUTE CUTANEOUS INJURY IN A MURINE MODEL OF CUTANEOUS RADIATION INJURY

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ABSTRACT

Despite utmost efforts to protect normal tissues from the possible damages resulting from the radiation therapy (RT), one unavoidable common side effect is the radiation induced cutaneous tissue injury that causes significant distress and discomfort to patients. Many a time, it is also shown to negatively affect the RT treatment outcome. Though, the extent of radiation induced skin damage is the major determinant for arriving at the diagnosis and prognosis, identification of cutaneous radiation injury (CRI) has been found to be mostly anecdotal and largely relying on qualitative indicators like visual manifestations, presence of skin contamination, event recall by the victim etc. which are purely subjective. Therefore, systematic monitoring of CRI from the onset through the full progression, based on a few quantitative metrics, could offer a patient-specific means of managing CRI and intervention for wound prevention/healing. The objective of the present study was to evaluate the feasibility of using diffuse reflectance spectroscopy to non-invasively quantify the cytokine-induced vasodilation in blood vessels that occurs during erythema via functional changes of hemoglobin concentration and tissue oxygen saturation. Diffuse reflectance spectra were measured from the thigh, back and foot pad regions of the skin of mice, first, immediately after their exposure to the whole body Gamma irradiation (5 Gray), and then on different days of post exposure. For use as control, the spectra were also measured prior to exposing the mice to the whole body Gamma radiation. The mean diffuse-reflectance spectra of skin from thigh, back, foot pad regions before and after the exposure on different days were found to be statistically significant (p>0.01). Overall, the results suggest that diffuse reflectance spectroscopy has promising potential to be used as a non-invasive tool for quantitative monitoring of CRI. The details of the results will be presented.
QSAR STUDY OF IMIDAZOLES DERIVATIVES AS INHIBITORS OF P38A MAP KINASE

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ABSTRACT

The present study describes development of Quantitative structure activity relationship analyses was performed and investigate the role of its structural features Imidazoles Derivatives on their P38α MAP Kinase Inhibitors. The good QSAR model was selected having a correlation coefficient ($r^2$) of 0.7258 and cross-validated correlation coefficient ($q^2$) of 0.6698. The partition coefficient relates to the lipophilicity of the molecule and model implied that lipophilicity and electronegative substitution at R1/R2 position high the inhibitory activity, while the presence of chlorine group improves the same. It seemed applying variable transformation on the dependent variable was necessary to improve quality of the models because it made the model more predictive.
QSAR AND DOCKING STUDY OF SOME AZOLE CONJUGATES AS NOVEL ANTI-TUBERCULAR AGENTS

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ABSTRACT
Tuberculosis (TB) is an infectious disease that remains one of the top 10 causes of death worldwide attributable to a single infectious agent in 2015 which is usually caused by Mycobacterium tuberculosis bacteria. The study was performed to find predictive relationships between quantitative descriptions of physical properties of compounds and response of biological system under considerations which is known as QSAR. In the present study quantitative structure activity relationship studies were performed on a series of Clinafloxacin-azole conjugates using SYBYL-X 2.1 Software followed by selection of best model having required values for correlation coefficient(r²) and cross-validated correlation coefficient(q²). The docking study was also performed using SYBYL-X 2.1 software to obtain Total Score and interactions that matched with pdb which was procured from RCSB website.
MOLECULAR DOCKING ON FLAVANOID DERIVATIVES AS A THERAPEUTIC AGENT IN TREATMENT OF LUNGS CANCER

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ABSTRACT

LY3009120 induces BRAF-CRAF dimerization but inhibits the phosphorylation of downstream MEK and ERK, suggesting that it effectively inhibits the kinase activity of BRAF-CRAF heterodimers. Due to these unique properties, LY3009120 demonstrates minimal paradoxical activation, inhibits MEK1/2 phosphorylation, and exhibits anti-tumor activities across multiple models carrying KRAS, NRAS, or BRAF mutation. Docking study was carried out on 25 flavanoid derivatives using molegrow virtual docker 6.0. ChemDraw 3D was used for structure minimization. PDB code: 5c9c Crystal structure of BRAF(V600E) in complex with LY3009120 compound was used for the study. The study showed that the most active compound binds to the active site of the protein. Whereas compound C3, C21, C14, C6, and C9 showed high calculated binding free energy as compared to standard co-crystallized ligand. This agent can be used as a good therapeutic agent against lungs cancer.

Keywords: LY3009120 Compound Carrying 5c9c, Flavanoid Derivatives, Anti-Tumor Agents.
HQSAR, COMFA AND COMSIA ANALYSIS OF OXAZOLE DERIVATIVES AS ANTI MALARIAL AGENTS

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ABSTRACT

In this study a series of fifty two oxazole derivatives was selected and hologram quantitative structure-activity relationship (HQSAR), comparative molecular field analysis (CoMFA) and comparative molecular similarity indices analysis (CoMSIA) techniques were performed as anti malarial agents. The LOO cross-validated $q^2$ values of HQSAR, CoMFA and CoMSIA models were found to be 0.793, 0.882 and 0.795, respectively. The predictive capability of the developed models was validated by a test set of eighteen compounds. The predicted $pIC_{50}$ values were in good agreement with the experimentally determined $pIC_{50}$ values. The best HQSAR model was obtained using atoms, bonds, connection, donor and acceptor as fragment distinction parameter with fragment size (4-7) using a hologram length of 417 and 6 components. The fragment contribution map of HQSAR showed the presence of oxazole ring, presence of bulky group at $R_1$ position and electronegative group at $R_2$ position is favorable for antimalarial activity. The results of HQSAR are in good conformity with CoMFA and CoMSIA results.
2QSAR AND 3D QSAR ANALYSIS OF FLAVANOID DERIVATIVES A-GLUCOSIDASE INHIBITORS

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ABSTRACT

In this study a series of sixty flavanoid derivatives was selected and hologram quantitative structure-activity relationship (HQSAR), comparative molecular field analysis (CoMFA) and comparative molecular similarity indices analysis (CoMSIA) techniques were performed as inhibitor of α-glucosidase enzyme. The LOO cross-validated q² values of HQSAR, CoMFA and CoMSIA models were found to be 0.691, 0.716 and 0.703, respectively. The predictive capability of the generated models was validated by a test set of twenty compounds. The predicted pIC₅₀ values were in good conformity with the experimentally determined pIC₅₀ values. The best HQSAR model was obtained using atoms, bonds, connection, donor and acceptor as fragment distinction parameter with fragment size (5-8) using a hologram length of 417 and 6 components. The fragment contribution map of HQSAR showed the presence of flavanoid ring, presence of hydroxyl group at R₁ position and electronegative group R₂ position is favorable for α-glucosidase inhibitory activity. The results of HQSAR are in good harmony CoMFA and CoMSIA results.
A REVIEW ON THE ADVANCEMENT OF GREEN CHEMISTRY

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ABSTRACT

To synthesize a compound in eco-friendly manner without any hazardous effects is the major challenge in synthesis. Majority of research in green chemistry is to reduce the energy utilization which is required for the production of desired product either it may be any drug, other chemical compounds and dyes. Their aim of utilization of green chemistry is to eliminate the production of any harmful bi-products and maximizing the desired product without compromising with the environment. The three key developments in green chemistry include use of super critical CO₂, aqueous hydrogen peroxide and use of hydrogen in asymmetric synthesis. It also focuses on replacing traditional methods of heating by modern methods of heating like microwave radiations so that carbon footprint should be reduces as low as possible. Many new molecules have been introduced, synthesized, studied and used. Commercial production and utilization of dyes, drugs, educts, solvents are started and till now it has been used continue and will always be used in future also. Green chemistry is an eco-friendly and cost effective technology. This review emphasize on principle, methodology and recent applications of green chemistry.

Keywords: Green Chemistry, Bi-products, Modern Methodology.
COMBINATORIAL CHEMISTRY: A PARADIGM SHIFT FROM TRADITIONAL DRUG DISCOVERY

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ABSTRACT

Present review article is the study on the versatile utilisation innovative method of Combinatorial Chemistry for synthesizing many different substances quickly and at the same time. Large numbers of different but structurally similar molecules are produces rapidly and submitted for pharmacological assay by the use of this technique. It comprises chemical synthetic methods which make it possible to prepare a large library of compounds (tens to thousands or even millions) in a single process. These compound libraries can be prepared as mixtures, sets of individual compounds or chemical structures generated by computer software. The utilisation of combinatorial chemistry techniques has been explored as an innovative alternative to conventional approaches for the synthesis of compounds in the drug discovery process. Combinatorial chemistry technologies were developed in response to the increased screening capacities within minimum time utilisation and maximum accuracy that are available when drug discovery changed its screening paradigm from a pharmacological based approach to target oriented lead finding. This review focuses on combinatorial chemistry methodology, its vast application for the future prospects of generation of compounds.

Keywords: Combinatorial Chemistry, Methodology, Application, Accuracy.
A REVIEW ON WASTE MANAGEMENT

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ABSTRACT

The control of solid urban waste is a serious problem nowadays in most of the world's megacities with the increase in the volume of waste, which leads to the loss of resources and the increase in environmental risks. India is a religious country with ancient civilizations and a diverse population of religious and cultural beliefs. Rapid population growth and industrialization degrade the urban environment and place great emphasis on natural resources, undermining fair and sustainable development. The management of solid urban waste (MSWM), a critical element towards sustainable urban development, involves segregation, storage, collection, transfer, transport, processing and disposal of solid waste to minimize the impact negative on the environment. In the present review, an attempt was made to provide a complete reflection of the characteristics, generation, collection and transport, disposal methods and treatment techniques adopted by MSW in India.

Keywords: Solid Waste, Waste composition, Waste storage, Disposal methods.
ROLE OF COMPUTATIONAL CHEMISTRY IN DRUG DESIGN:
A REVIEW

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ABSTRACT
Computational chemistry describes the use of computer modelling and simulation to study the structures and properties of molecules and materials based on quantum chemistry, and empirical approaches. The objective of this review is to throw the light on very important aspect of synthetic chemistry which provide lead prediction, lead generation, molecular descriptor calculations and most importantly accurate results along with time and cost effectiveness. The 21st century is totally based on technology and with the current demand this computational chemistry approach is very much effective in drug discovery and development process Further there is detailed discussion about pharmacophore, QSAR, homology modeling, ligand fingerprints etc. And it also includes new methodological and practical application.

Keywords: Quantum Chemistry, Pharmacophore, QSAR, Computational Methodological.
RADIONUCLEAR PHARMACY

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ABSTRACT

The concept of nuclear pharmacy was first described by Captain William H. Briner in 1960. In the U.S., nuclear pharmacy was the first pharmacy established in 1978 by the board of pharmacy specialties. Radioactive substance has a property of emitting rays or particles which affect the photographic plate. Nuclear pharmacy involves the preparation of radioactive material for patient administration that will be used to diagnose and treat specific disease. It generally involve the practice of combining a radionuclide tracer with a pharmaceutical component that determines the biological localization in the patient. Radioisotopes have many useful applications in medicine for example cobalt 60. Radioisotopes are used as tracers for diagnostic purposes as well as in research on metabolic processes.

Keywords: Radioisotopes, Radionuclides, Radiopharmaceuticals.
WOUND HEALING ACTIVITY OF HYDROALCOHOLIC EXTRACT OF TERMINALIA FERDINANDIANA LEAVES

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ABSTRACT

Wound healing is a process of restoring normal structure functions of damaged tissue. It may be produced due to physical, chemical, thermal, microbial or immunological exploitation to the tissues. Healing is a natural phenomenon by which body itself overcome the damaged to the tissue but the rate of healing is very slow and chance of microbial infection is high. Plants of the genus Terminalia are amongst the most widely used plants for traditional medicinal purposes worldwide. Many species are used for their antibacterial, antifungal, antiprotozoal, antiviral, antidiarrhoeal, analgesic, antimalarial, antioxidant, antiinflammatory and anticancer activities. Wound healing and cardiovascular effects have also been credited to some species. Many Terminalia species have multiple beneficial effects for multiple diseases and ailments. Indeed, the Indian species Terminalia chebula is known as the king of plants in Ayurveda due to its broad range of medicinal uses. This is likely due to the high tannin content common to many Terminalia species and the perception that these tannins may be responsible for much of their beneficial properties. As the complexities of tannins make them poor candidates for drug design, most interest in Terminalia species has been for their pharmacognostic and nutraceutical value and they have often been overlooked as potentials for drug discovery. The last decade has seen a large increase in the number of studies into the use of Terminalia species as therapeutic agents. Similarly, recent reports have also highlighted the medicinal potential of species from Africa highlight and direct future areas of research into the medicinal activities of this important genus.

Keywords: Terminalia ferdinandiana Leaves, Wound Healing.
MEMORY ENHANCING ACTIVITY OF HYDROALCOHOLIC EXTRACT OF *SORGHUM BICOLOR LINN* UNRIPE SEEDS ON SCOPOLAMINE INDUCED AMNESIC RATS

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ABSTRACT

*Sorghum bicolor* (Gramineae) Vth important cereal crop in the world commonly called “Jowar” especially used in the production of sorghum molasses. A newly found biofuel is also used to treat diabetes, osteoporosis, atherosclerosis, various GI problems such as indigestion, constipation, flatulence. In the present study, memory enhancing and anti-cholinesterase (ChE) activity of unripe fresh of *Sorghum bicolor* in scopolamine-induced amnesic rats was evaluated. The extract of *Sorghum bicolor* was administered orally at different doses for 7 and 14 consecutive days was administered to the respective groups of rats. Animals were divided into 6 groups (6 animals each group). Elevated Plus Maze (EPM) and Passive Avoidance Test was taken as a learning parameter for animals. Brain Anti-acetylcholinesterase activity was analyzed. Observation was found to be that *Sorghum bicolor* at the above mentioned doses after 7 and 14 days of administration in the respective groups significantly reversed. Amnesia in experimental rats was induced by using scopolamine (1 mg/kg i.p.). The extracts of Sorghum bicolor 100mg/kg, 200mg/kg and 300mg/kg showed remarkable decrease in TL (Transfer Latency) in EPM and Passive Avoidance Test. *Sorghum bicolor* significantly reduced the brain ChE activity in rats.

**Keywords:** *Sorghum bicolor*, cholinesterase, Scopolamine, Amnesia
COMPARATIVE EVALUATION OF ALPHA AMYLASE INHIBITORY POTENTIAL OF EXTRACTS OF *IPOMOEA CARNEA LINN.*

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**ABSTRACT**

**Aim:** Comparative evaluation of inhibitory potential of alpha amylase was performed on different extracts of Ipomoea Carnea Linn.

**Material & Methods:** Air dried powdered leaves of Ipomoea Carnea Linn. was extracted by successive solvent extraction method to obtained hydroalcoholic and aqueous extract. Both the extracts were screened for *in vitro* alpha amylase inhibitory activity by using 3,5 dinitrosalicylic acid reagent (DNSA) method, the spectroscopic estimation was done at 540 nm.

**Result & Discussion:** Result show that hydro alcoholic and aqueous extract both inhibit alpha amylase, but at different extent. From dose response curve it was found that hydro alcoholic extract is more effective then aqueous extract with IC\(_{50}\) values of 45.66 ±0.33 µg/ml, and 112.0 ±1.65 µg/ml respectively.

**Conclusion:** In the end it was concluded that, hydroalcoholic extract of Ipomoea Carnea Linn. is potent in inhibiting the alpha amylase enzyme which contribute major role in the diabetes complication.

**Keywords:** Alpha Amylase, Starch solution, DNS reagent, Hydro alcoholic extract, Aqueous Extract.
WOUND HEALING ACTIVITY OF THE HYDRO-ALCOHOLIC EXTRACT OF DALBERGIA LATIFOLIA LEAVES IN WISTAR ALBINO RATS

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ABSTRACT

Dalbergia latifolia has been known for many potential uses. Bark and leaves are used in treatment of various digestive disorders diarrhea, constipation and stomach ulcers. The hydro-alcoholic extract of Dalbergia latifolia leaves were investigated for wound healing potential in rats. Dalbergia latifolia leaves were dried, crushed in coarse powder hydro alcoholic extract was obtained and turned to ointment form. In the course of this study, 18 male wistar albino rats weighing approximately 120-150g were used in this research. Group 1 as control group, group 2 as reference control were treated topically with Povidone-Iodine Ointment USP, group 3 as test control were treated with 1% Dalbergia latifolia leaves. Wound healing was monitored on days 0, 4, 8, 12, & 16 and historical evaluation was carried out on the samples. Leaves extract of Dalbergia latifolia promotes wound healing via bactericidal activity.

Key words: Wound healing; Dalbergia latifolia (leaves); hydro-alcoholic extract; ointment; bactericidal activity.
ANTI-INFLAMMATORY ACTIVITY OF ETHANOLIC EXTRACT OF

*LUFFA ACUTANGULA*

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ABSTRACT

The present study investigates the anti-inflammatory activity of ethanolic extract *Luffa acutangula* (fruit) using carrageenan induced paw edema in wistar albino rats. The medicinal values of the *Luffa acutangula* has been mentioned ancient literature as useful in the treatment of disorders of inflammation. Dried fruits of *Luffa acutangula* were powdered and extracted with ethanol using soxhlation method. The anti-inflammatory activity was done by carrageenan induced hind paw edema method using plethysmometer. Indomethacin used as a standard drug. for this activity Control group receive only carrageenan, standard group receive indomethacin (40mg/kg), induced 0.1 ml carrageenan, test group receive ethanolic fruit extract of *Luffa acutangula* (500 mg/kg). However, maximum inhibition of paw edema was found to be in Group II 91.70% and although the inhibition of paw edema with the extract was 72.73% which is less than standard group but higher than that of control group.

Keywords: Ethanolic Fruit Extract, Anti-Inflammatory Activity, Excision Wound, Plethysmometer.
HEALING POTENTIAL OF FERULIC ACID ON DERMAL WOUND IN DIABETIC ANIMALS

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ABSTRACT

Wounds are physical injuries shows loss of breaking cellular and functional continuity of the living tissues and management of wounds is frequently encountered with different problems. A various variety of models have been developed for examining different aspects of the wound healing process thus many animal models are used for the evaluation of wound healing activities. The effect of ferulic acid on wound healing activity is investigated in streptozotocin (50mg/kg) induced diabetic rats by excision, incision and dead space wound healing models in rats. Wistar albino rats of either sex weighing between 160-200 g were topically treated with ferulic acid ointment by using simple ointment BP as base. 1% (w/w) ointment was applied once daily in excision wound healing model. Rats of standard groups were treated with 1% sofframycin ointment topically. The %wound closure, epithelization time were measured. Topical application of ferulic acid ointment in excision wound model increased the %wound closure. Epithelisaion period were decreased. Results showed that ferulic acid accelerates wound healing in diabetic rats.

Keywords: Diabetes, Excision Wound, Incision Wound, Wound Contraction.
ANTI-UROLITHIATIC ACTIVITY OF LANTANA CAMARA LEAVES EXTRACT

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ABSTRACT

It is estimated that about 12% of men and 55% of women have at least one episode of kidney stone during their life time. The main cause of urolithiasis is still unknown but probably positive family history, overweight, obesity, or increased BMI, Low urine volume less than 1500 ml/day, High dietary animal protein intake, increased urine excretion of calcium oxalate, uric acid, Cystine. The aim of this work was to evaluate the anti-urolithiatic effect of Ethanolic extract of leaves of the plant Lantana camara. Ethylene glycol induced hyperoxaluria model was used to assess the Antiurolithiatic activity in albino rats. Animals were divided into four groups containing six animals in each. Urine and serum parameters were analyzed for accessing anti-urolithiatic activity. In the present study, oxalate and calcium excretion have progressively increased in calculi-induced animals. However, treatments ethanolic extract of Lantana camara leaves (ELCL) lower the levels of calcium, Oxalate and phosphate in urine, this is probably by increasing/ restoring the tubular reabsorption in the renal tubules. In serum analysis the increased level of urea, uric acid and creatinine were reduced with the treatment with ELCL but to lesser extent as compared to standard drug cystone. Finally from the overall results it can be concluded that the ELCL showed promising anti-urolithiatic activity but lesser as compared to standard drug cystone. These results suggest the therapeutic utility of ethanolic extract of Lantana camara leaves (ELCL) in renal injury. The anti-urolithiatic activity of ethanolic extract of Lantana camara leaves (ELCL) was may be due to to presence of pentacyclic triterpenoids in it. Since two structurally related Penta cyclic triterpenes, lupeol (Lupa-21, 20 29. dien, 3-ol) and betulin (Lupa-20 (29) ene-3, 28 diol) are known to possess antilithiatic activity in animal models.

Keywords: Anti-urolithiatic activity, Creatinine, Pentacyclic triterpenoids.
ANTIAMNESIC AND NEUROPROTECTIVE EFFECT OF *LUFFA AEGYPTIACA* FRUITS ON AMNESIC RATS

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**ABSTRACT**

The present study was to test the effect of *Luffa aegyptiaca* extract on biochemical markers of brain in amnesic rats (scopolamine induced amnesia). The extract of *Luffa aegyptiaca* extract was administered in two doses (100 and 200 mg/kg) for 7 days. Piracetam (120 mg/kg) was used as a standard agent. Orally supplementation of *Luffa aegyptiaca* extract showed significant elevated brain antioxidant enzymes CAT (15.5 ± 2.8** and 14.0 ± 1.12**), SOD (13.5 ± 1.4** and 18.3 ± 1.7**) GSH (203.3 ± 15.3** and 218.0 ± 13.5**), TBARS (200.3 ± 7.3** and 208.0 ± 11.0**) for *Luffa aegyptiaca* extract 100 mg/kg and 200mg/kg respectively. Orally supplementation of *Luffa aegyptiaca* extract also showed significant inhibited AChE activity 4.907±0.31** and 4.967±0.31** respectively.

**Keywords:** *Luffa aegyptiaca* extract, Superoxide dismutase (SOD), catalase (CAT), contents of thiobarbituric acid reactive substances (TBARS) and reduced glutathione (GSH)
INSULIN IN A PILL: A REVIEW

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ABSTRACT

In the recent times Diabetes Mellitus is worldwide problem caused by the one of the major factor i.e., obesity and leads to other many health care related problems which costing billions of dollars annually. Oral insulin is one of the most interesting areas of development in the treatment of diabetes. Diabetes is a disorder related to the deficiency of the secretion or action of insulin, a peptide hormone synthesized by the β cells of the islands of the pancreases. Insulin is administered subcutaneously (SC). Patient non-compliance is frequent with the SC route. Several efforts have been made to eliminate the obstacle due to oral insulin administration. With the effective use of novel nanotechnology, nanotransporters, liposomes, microemulsions and nanocubicles insulin can be administered orally. This article offers an overview of several innovative approaches to achieve better oral administration of insulin. These new formulations improve bioavailability; absorption problems associated with insulin and protection against enzymatic degradation. At this time, researchers from both industries and academics are working on oral insulin. With this fight, the investigator's dream of administering oral insulin will prove to be a reality for the future.

Keywords: Subcutaneous route, Oral delivery, Challenges, Approaches, Market Status.
RADIATION THERAPY IN THE TREATMENT OF CANCER

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ABSTRACT

Radiation and radioactivity have advanced technically over a long period of time. As a better understanding regarding its effects on human body have made radiation therapy an important part of cancer treatment. Radiation is the energy in the form of wave or stream of particles which have ability to damage genes and some other molecular constituents of cells. Thus radiation can damage the genes of cancer cells such that it cannot grow and divide further. So, radiations can be used to kill cancer cells and shrink tumors. Cancer or neoplasm is defined as an abnormal mass of a tissue as a result of abnormal proliferation of cells. Cancer cells are not specialized and restricted to its functional area. The origin of a tumor is from the existing cells or tissues of the body. Cancer cells have small cytoplasm, multiple nuclei, large nucleoli and also coarse chromatins as compared to normal cells. It does not perform the tasks carried out by the healthy cells. These also have the ability to spread to fresh locations of the body to grow and survive independently i.e. the ability to perform metastasis. Chemotherapy is most widely used in the treatment of cancer. But resistance to cancer chemotherapeutic drugs is a major limitation to treatment. Radiation therapy can provide long term control of cancer without affecting other tissues and with preservation of functioning of the surrounding normal cells. Radiation therapy can also be used for the cancers that have extended around critical structures such as spinal cord, nerves or large vessels.

Keywords: Neoplasm, Proliferation, Metastasis, Radiation.
A REVIEW ON DIABETES MELLITUS: PATHOPHYSIOLOGY AND TREATMENT

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ABSTRACT

Diabetes mellitus is a growing health problem worldwide as well as in India. It is a chronic metabolic disease in which blood glucose level increases either because of insufficient insulin production or when the cells are unable to use the insulin produced by pancreas. As insulin is an anabolic hormone so the fluctuation in its blood level causes metabolic abnormalities in carbohydrates, lipids, and proteins. The most common diabetes symptoms include frequent urination, intense thirst and hunger, weight gain, unusual weight loss, very dry skin, sores that are slow to heal and more infections than usual. Several complications are also associated with diabetes such as blindness, renal failure, cardiac arrest etc. Current therapies available for treatment of diabetes include insulin together with oral hypoglycaemic agents. This work summarizes the types, pathophysiology, complications and treatments of diabetes.

Keywords: Diabetes Mellitus, Insulin, Anabolic Hormone, Oral Hypoglycaemic Agents
A REVIEW ON INTENSITY MODULATED PROTON THERAPY: BOON TO CANCER TREATMENT

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ABSTRACT

The major bottleneck in the treatment of cancer is develop such therapy which can target tumors leaving the surrounding healthy cells and intensity modulated proton therapy (IMPT) proved to be a boon for such kind of treatment. It implies use of protons of variable energy and intensity in the form of electromagnetic “pencil beams”. The clinical utilization of Intensity modulated proton therapy further improves the healthy tissue and target dose differential in comparison with X-rays and thus allows increased target dose with dose reduction. The proton pencil beam allows dose modulation in the patient with four degrees of freedom: number of protons (NP) to control the local dose deposition, energy to control the local penetration and magnetic deflection to control the off-axis position. The size of spot controls positively impact of delivery efficiency, as “larger” spots can deliver more protons in vivo given safety restriction whereas possibly with an increase of integral dose. This therapy ensures quality treatment with sophisticated computer based planning approach. To control the side effects after cancer therapy is proved to be the most challenging task and positively this IMPT works very successfully. So definitely this will be the preferred radiation method for patients with the most complicated tumors which provide quality of life to the patients after treatment.

Keywords: IMPT, Pencil Beams, Proton Targeting, Electromagnetic Radiation, Computation.
NIPA VIRUS DISEASE AND ITS POSSIBLE VACCINATION

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ABSTRACT

Pathogenic Nipah Virus (NiV), a fresh species of Henipa Virus (HeV), belonging to Paramyxoviridae family is a single-stranded, negative sense RNA, which causes lethal respiratory and neurological flushed encephalitis illness in humans. Fruit bats of the Pteropodidae family are the normal swarm of Nipah virus. It be able to be transmitted intermediates animals (such as bats or pigs), or contaminated foods and can also be transmitted openly from human near human. The infection was detected primarily around 1998-1999 in Malasia, Singapore, Bangladesh and India. Presently there is no registered vaccine or therapeutics, only supportive care is available. The drug ribavirin has been revealed to be valuable against the viruses in vitro, but human investigations till date have been unconvincing and the medical helpfulness of ribavirin remains suspicious. Spontaneous inoculation through way of a human monoclonal antibody targeting the Nipah G glycoprotein has been evaluated in the post-exposure cure within the ferret model and established to be of advantage. The 2018 annual review of the WHO R&D Blueprint list of precedence sickness indicates that there is an urgent necessitate for accelerated investigation and progress for the Nipah virus.

Keywords: Neurological, Encephalitis, Negative Sense RNA.
DEVELOPMENT OF SKELETON MUSCLE BY STEM CELL: A REVIEW

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ABSTRACT

For the development and rejuvenation of the host tissues, somatic stem cell populations play vital role. Skeletal muscle is capable of complete regeneration due to stem cells that reside in skeletal muscle and non-muscle stem cell populations. However, in severe muscle dependent diseases such as Duchenne Muscular Dystrophy which affects approximately 1 in 5,000 boys in the US and is the most common fatal childhood genetic disease. Skeletal muscle generally subjected to constant injury resulting from weight bearing, exercise, and trauma, thereby requiring an ever-available, renewable source of cells for muscle repair and regeneration and hence satellite cell that is "stem cell" proved to be a boon for such treatment. In the present review, studies will focuses on the origin, gene expression, and coordinated regulation of stem cell populations to highlight the regenerative capacity of skeletal muscle and emphasize the challenges for this field. Intense interest has focused on cell-based therapies for chronic, debilitating muscle dependent diseases. Future studies will provide a platform for therapeutic applications directed toward these chronic, life-threatening diseases that enhance our understanding of stem cell biology and repair mechanisms.

Keywords: Duchenne Muscular Dystrophy, Host tissue, Skeletal Muscle, satellite cell etc.
RADIATION THERAPY V/S CHEMOTHERAPY

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ABSTRACT

The most common types of treatment used to battle cancer are radiation therapy and chemotherapy. Each treatment is designed to target and kill cancer cells in the body, but both utilize a different set of processes and tools to treat and cure a patient. Even the overall effect on the patient’s body is different between these two methods. Chemotherapy, the weapons of choice in the battle against cancer are special drugs that target and kill cells in the body that divide rapidly, which is a core characteristic of cancer cells. Typically, a combination of drugs will be used to improve the effectiveness of the treatment, and the type of drugs that are used can vary depending on the stage and type of cancer, as well as the patient’s overall health. With radiation therapy, a radiation oncologist delivers targeted doses of radiation to the area of the patient’s body affected by cancer. When cancer cells come into contact with radiation, the DNA in the cells is damaged, which prevents the cells from dividing or spreading, and eventually kills them off. In comparison to chemotherapy, which uses medication to treat the whole body, radiation therapy targets a specific area of the body, reducing the amount of healthy tissue affected by the treatment. Both radiation therapy and chemotherapy effectively kill cancer cells, but every patient is different, meaning that their body can respond differently to treatment. The patient’s physicians will determine what treatment is most beneficial for the patient and will produce the most favorable results. In some cases, it’s possible for radiation therapy and chemotherapy to be used together for more comprehensive treatment.

Keywords: Radiotherapy, Chemotherapy, Cancer, Oncologist, Targeted dose
A REVIEW ON SICKLE CELL ANEMIA

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ABSTRACT

The sickle cell anemia is a type of anemia which is an inherited as well as genetic disorder which is cause by the mutation in the genes that tells your body to make the red, iron-rich compound that gives blood its red color (hemoglobin). In sickle cell anemia, the abnormal hemoglobin causes red blood cells to become rigid & sticky, the shape of RBCs become irregular so these cells are known as ‘sickle cells’. As of 2015, there are about 4.4 million of people having this disease and about 43 million have sickle cell trait. In Sub-Saharan Africa, about 80-90% of sickle cell anemia cases are seen. Sickle cell disease is also seen in some parts of India. Problem of this disease starts to begin around 5-6 months of age. Several heath problems may occur, like swelling of hands and feet, chest pain, fever and difficulty breathing. When a person inherits two abnormal copies of the hemoglobin gene, one from each parent then sickle cell disease is caused. The care of people with sickle cell disease may include infection prevention with vaccination and antibiotics, high fluid intake, folic acid supplementation and pain medication.

Keywords: Sickle cell anemia, hemoglobin, gene, vaccination and antibiotics
LUNG CANCER: PATHOGENESIS AND ITS TREATMENT

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ABSTRACT

Lung cancer is a type of cancer that begins in the lungs. Lung cancer claims more lives each year than colon, prostate, ovarian and breast cancers combined. Lung cancer are divided into two major types i.e. small cell lung cancer (SCLC) and non-small lung cancer (NSCLC). SCLC occurs about 12 out of every 100 lung cancers and NSCLC occurs about 87 out of 100 lung cancers. Risk factors are cigarette smoking, second-hand smoke, exposure to radioactive gas, exposure to asbestos, air pollution, arsenic in drinking water etc. Common symptoms of lung cancer include a cough, chest pain, coughing up blood, shortness of breath, wheezing, repeated problems with pneumonia or bronchitis, swelling of the neck and face, loss of appetite or weight loss and fatigue. Pathogenesis of Lung Cancer is similar to other cancers, by activation of oncogenes or inactivation of tumor suppressor genes. Lung cancer develops genetic damage to DNA and epigenetic changes. These changes affect the normal functions of the cell, including cell proliferation, programmed cell death (apoptosis) and DNA repair. Treatment of Lung cancer include surgery, chemotherapy, radiation therapy, and targeted drug therapy, immunotherapy, Lobectomy Radiofrequency ablation (RFA) and microwave ablation (MWA).

Keywords: Small Cell Lung Cancer, Non-Small Cell Lung Cancer, Tumor Suppressor Genes, Oncogenes.
A REVIEW ON SCHIZOPHRENIA

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ABSTRACT

Schizophrenia is a quite rare mental disorder that usually appears in late adolescence or early adulthood. It is characterized by delusions, hallucinations, thinking disorders and other intellectual difficulties. It can often prove to be a struggle of a lifetime and most commonly strikes the people aging from 16-30 years. Males tend to show the symptoms of schizophrenia at a slightly younger age as compared to females. In most of the cases, this disorder develops so slowly that the affected individual does not even know that they are suffering for a long period of time. However, in some other cases, the disorder can strike suddenly and develop rapidly in the affected individual. People suffering from schizophrenia often have to rely on others for their most of the daily tasks as they are unable to complete any kind of work and even forget to care for themselves. Many people often resist the treatment claiming that they don’t have schizophrenia. The factors that are thought to contribute in the occurrence of schizophrenia are genetic inheritance, chemical imbalance in brain, family relationships, etc. Anti-psychotic drugs have transformed the treatment of schizophrenia. The present work has been done to awaken the individuals about schizophrenia and to provide better treatment so that any schizophrenic person can live a normal and productive life.

Keywords: Schizophrenia, Adolescence, Hallucinations, Anti-psychotic Drugs.
REVIEW ON RADIATION THERAPY

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ABSTRACT

Radiation therapy is cancer treatment that uses high doses of radiation to kill cancer cells and shrink tumors. Radiation works by making small breaks in the DNA inside cells. These breaks keep cancer cells from growing and dividing and cause them to die. Nearby normal cells can also be affected by radiation, but most recover and go back to working the way they should. There are two types of radiation therapy — ‘Internal radiation therapy’ and ‘External radiation therapy’. Internal radiation therapy (Brachytherapy) - allows a higher dose of radiation in a smaller area then might be possible with external radiation treatment. It uses a radiation source that is usually sealed in a small holder called an implant. Different type of implants may be called pellets, seeds, ribbons, wires, needles, capsule, balloons, or tubes. No matter which type of implant is used, it is placed in the body, very close to or inside the tumor. This way the radiation harms a few normal cells as possible. External beam radiation therapy (Teletherapy) is radiation delivered from a distant source, from outside the body and directed at the patient’s cancer site. System which produce different type of radiation for external beam therapy include orthovoltage X-RAY machines, cobalt-60 machines, linear accelerator, proton beam machines, and neutron beam machines. A radiation includes oncologist makes decisions regarding the type of system that is based suited to treat a specific cancer patient.

Keywords: Radiation, Cancer, Brachytherapy, Teletherapy, Orthovoltage, X-RAY machines
A REVIEW ON CYCLONE 30: BOOST TO CANCER DIAGNOSIS

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ABSTRACT

With the advancement in cancer treatment a new technology- Cyclone 30 paved the way for the diagnosis and therapeutic purposes. Cyclone 30 is based on an operational method of Variable Energy cyclotron Center (VEEC). It is the biggest cyclotron in India under the department of atomic energy (DAE). It is used to produce radioisotopes such as germanium 68 isotopes, $^{18}$F (Fluorine-18 isotope), palladium 103 isotopes and iodine 12 isotopes for the diagnosis of breast cancer, prostate cancer and thyroid cancer. The main target of the radiation is to kill and destroy the cancerous cell. Generally there is use of various radiations for the diagnosis and treatment purposes but they target healthy cells also along with various adverse effects. Cyclone 30 provides targeted radiations delivery with negligible side effects. The main aim of this review is to provide vast knowledge about the technological development in the cancer treatment which will be definitely beneficial for young researchers and ultimately for our country’s development.

Keywords: Cyclone 30, Radioisotopes, VEEC, DAE, targeted radiations delivery.
PATHOPHYSIOLOGY AND TREATMENT OF PEPTIC ULCER

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ABSTRACT

Peptic ulcers are sores that develop in the lining of the stomach. They are usually formed as a result of inflammation caused by the bacteria *Helicobacter pylori* and non-steroidal anti-inflammatory drug use, which breaks the mucosal barriers that protect GI tract tissues from acidic gastric contents. More than half of the world's population has a chronic *H. pylori* infection of the gastro-duodenal mucosa, yet only 5-10% develops ulcers. NSAID’s block the function of cyclo-oxygenase 1 and which is essential for the production of prostaglandins to protect gastric mucosa. Other risk factors are smoking, drinking alcohol, radiation therapy and stomach cancer. Approximately 500,000 people develop peptic ulcers each year in the United States. Peptic ulcer accounts for significant morbidity and mortality, with patients’ quality of life being adversely affected. Treatments include antibiotic medications to kill *H. pylori*, proton pump inhibitors, medications to reduce acid production, antacids that neutralize stomach acid and medications that protect the lining of your stomach and small intestine. The main purpose to review on this topic is aware people about this disease and its symptoms, causes, pathophysiology, prevention and treatment.

Keywords: Helicobacter pylori, NSAID’s, Cyclo-oxygenase, Proton Pump Inhibitors, Antacids.
A REVIEW ON AUTONOMOUS SYSTEM FOR GLYCEMIC CONTROL

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ABSTRACT

In today’s world many people are suffering from diabetes which causes difficulty in controlling blood glucose level which leads to acute effects of hypoglycemia and chronic effects of hyperglycemia which affects their eyes, kidney and nerves. This review describes a new system which automatically controls blood glucose level in people suffering from diabetes. This automated system measures blood glucose level and deliver insulin and glucagon through subcutaneous route. This system consist of three types of devices i.e., a continuous glucose monitoring system (CGM), computer control algorithm, and insulin infusion pump. When patient blood glucose level goes to low the system injects a particular hormone glucagon into the body which raises the blood glucose level. In contrast when glucose level is to low the system automatically delivers insulin. This system describes the fully automated closed loop containing dual sensor bi-hormonal artificial pancreas system which does not require human interaction. Result of this work leads to conquer normal blood glucose level by eliminating hectic procedures which are easy to use and obtain better glycemic control over patients suffering from form diabetes.

Keywords: Hypoglycaemia, CGM, Artificial Pancreas, Automated closed loop.
WOUND HEALING: MECHANISM AND ITS TREATMENT

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ABSTRACT

Wound healing is a complicated process that recruits at least 4 distinct cell types. The stages of wound healing proceed in an organized way and follow four processes: hemostasis, inflammation, proliferation and maturation. Hemostasis begins immediately after injury and wound being closed by clotting. Inflammation is the second stage of wound healing and begins right after the injury. Proliferative process begins within days and includes wound to rebuild with new tissue which is made up of collagen and extracellular matrix. Remodeling process or maturation phase lasts for up to a year and is responsible for scar tissue formation and development of new skin. Wound healing is affected by several factors which include local factors (growth factors, edema and ischemia, low oxygen tension, and infection), regional factors (arterial insufficiency, venous insufficiency, and neuropathy), systemic factors (inadequate perfusion and metabolic disease), and other miscellaneous factors, such as nutritional state, preexisting illnesses, exposure to radiation therapy, and smoking. Advance treatment of wound healing includes Silver impregnated dressings, Negative Pressure Wound Devices, Advanced Dressings, Skin Substitutes Growth Factors and Biologic Wound Products Hyperbaric Oxygen, Foam dressings, Alginates, Hydrocolloids, Transparent films, etc.

Keywords: Hemostasis, Proliferation, Negative Pressure Wound Devices, Transparent films.
BRACHY THERAPY: AN INTERNAL RADIOTHERAPY

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ABSTRACT

Brachytherapy is a type of radiotherapy where a sealed radiation source is placed inside or next to the area requiring treatment. Brachytherapy is commonly used as effective treatment for cervical, prostate, breast, and skin cancer. And can also be used to treat tumors in many other body sites. Radioactive material is placed directly in the site of tumor using a specialized delivery device for permanent implants. For temporary implants, needles, plastic catheters or specialized applicators are placed in the treatment site. Like external beam radiation therapy, brachytherapy is a local treatment and treats only a specific part of the body. Different type of radioactive material may be used according to the type of brachytherapy. Some types of radiation sources used in brachytherapy are iodine, palladium, cesium, and iridium. In all cases of brachytherapy, the sources of radiation is encapsulated which means that the radioactive material is enclosed within a non-radioactive materials from entering the patient’s body. Procedure of brachytherapy: permanent brachytherapy, temporary brachytherapy. In permanent brachytherapy, also called seed implantation needles that are pre-field with the radioactive seeds are inserted in to the tumor the needles or devices is then removed leaving the radioactive seeds behind. Temporary brachytherapy- In this therapy a delivery device such as catheter, needles, or applicator is placed in to the tumor using imaging such as fluoroscopy, ultrasound, MRI or CT scan to help position the radiation sources.

Keywords: Fluoroscopy, Brachytherapy, Catheter, Encapsulated.
RECENT ADVANCEMENTS IN CANCER THERAPY: A REVIEW

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ABSTRACT

The treatment of the cancer has been changed dramatically over time to time. The time where to fight the tumors by the use of surgery and radiotherapy were ended. A new advancement in the treatment of cancer by understanding the molecular features of tumors have been emerging nowadays. This review provided an overview on the different approaches to cancer treatment. This review includes some classic cancer therapies, surgery, radiation, chemotherapy and endocrine therapy, for better understood in the mechanisms underpinning their efficacy. Following, focus on the understanding of the value of systemic treatment, up-coming therapies of the current targeted therapy age, including new antibodies, small molecules, and viral therapy. This review also briefly elaborates the new biomarkers development and how it should rule and determine the future of therapeutic research in cancer.

Keywords: Chemotherapy, Endocrine Therapy, Viral Therapy, Radiation, Biomarkers.
ATHEROSCLEROSIS: RISK FACTORS AND ITS TREATMENT

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ABSTRACT

Atherosclerosis is coronary heart disease have in which the inside of an artery narrows due to the buildup of plaque. Hypercholesterolaemia is one of the main risk factor of atherosclerosis. The increase in plasma cholesterol levels results in the formation of plaque and makes it difficult for blood to flow through your arteries and can result in a shortage of blood and oxygen in various tissues of your body. Pieces of plaque can also break off, causing a blood clot. Other risk factors include high blood pressure, smoking and other sources of tobacco, insulin resistance, obesity or diabetes, inflammation from diseases, such as arthritis, lupus or infections, unhealthy diet, etc.

Symptoms of moderate to severe atherosclerosis depend on which arteries are affected but it can lead to heart attack, stroke, or heart failure if left untreated. Other symptoms are chest pain, numbness or weakness in arms or legs, high blood pressure, kidney failure, etc. Treatment of atherosclerosis involves various medication, surgical procedures and various precautions like healthy lifestyle. The main purpose of this study is to aware people about atherosclerosis and how it can be avoided by various precautions.

Keywords: Coronary Heart Disease, Hypercholesterolaemia, Plaque, High Blood Pressure.
A REVIEW ON ULCERATIVE COLITIS

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ABSTRACT

Ulcerative colitis is an inflammatory bowel disease (IBD) of the large intestine, also known as the colon, in which the lining of the colon becomes inflamed and develops tiny open sores, or ulcers, that produce pus and mucus. The combination of inflammation and ulceration can cause abdominal discomfort and frequent emptying of the colon. Ulcerative colitis is closely associated with the development of colon cancer and is recognized by the World Health Organization (WHO) as a refractory bowel disease. The disease course is very long which can result in the formation of intestinal fibrosis and stenosis. The age of disease onset was mainly affects young adults aged 20–40 years. There is no difference between males and females. The pathogenic mechanism of ulcerative colitis is still not completely clear. Modern medicine considers the development of ulcerative colitis to be associated with a variety of factors, mainly including environmental factors, immune factors, inflammation, eating disorders, emotional distress, and genetics. Signs and symptoms of ulcerative colitis are bowel movements become looser and more urgent, persistent diarrhea accompanied by abdominal pain and blood in the stool, stool is generally bloody, crampy abdominal pain and Weight loss, Fatigue and Fever. The main objective of this review is provide a brief knowledge about ulcerative colitis and its treatment.

Keywords: Ulcerative Colitis, Adherence, Maintenance, Inflammation, Treatment.
A REVIEW ARTICLE: MANAGEMENT OF ANGINA PECTORIS

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ABSTRACT

Today the coronary artery disease remains the major cause of morbidity and mortality which has now the serious public health disease. The prevalence of angina in community studies is been increasing sharply as in women of age 45-54 that is about 0.1%-1%, in men of age 65-74 that is about 10-15%. Lifestyle modification is a cornerstone of Cardiovascular disease. Angina pectoris is the ischemic heart disease in which the obstruction occurs and the cause may be disturbed and unhealthy lifestyle. The manifestation may include chest pain which will be originating from the shoulder and will radiate to chest, jaw and neck. The therapies which include the treatment for the angina are some of the blockers as like calcium channel blockers (verapamil), beta blockers (propanolol), nitrates (nitroglycerin) and various vasodiating agents. To improve or to lower the rate of mortality there is a need for improvisation in the lifestyle because it the fundamental principle to lead the life.

Key words: Angina Pectoris, Obstruction, Ischemic heart disease.
REVIEW ON DIAGNOSIS AND MANAGEMENT ANKYLOSING SPONDYLITIS

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ABSTRACT

Ankylosing spondylitis (also called Bechterew's disease) is a spondyloarthritis of the spine and pelvis. That affects the axial skeleton, causing characteristic inflammatory back pain, which can lead to structural and functional impairments and a decrease in quality of life. Ankylosis is a devitalising condition that leads to decreased movement of the spine and loss of spinal mobility thus adversely impacting the health. Ankylosing spondylitis can spread to other joints in the body (like hips, knees, or shoulders) as it is a systemic rheumatoid disease. Sacroiliitis is its hallmark, accompanied by inflammation of the entheses (points of union between tendon, ligament, or capsule and bone) and formation of syndesmophytes, leading to spinal ankylosis in later stages. Prevalence estimates vary between 0.1% and 2% in different populations. The treatment of ankylosing spondylitis typically involves the use of medications to reduce inflammation, suppress immunity to stop progression of the disease, physical therapy, and exercise. Medications decrease inflammation in the spine and other joints. Physical therapy and exercise help to improve posture, spine mobility, and lung capacity. The main mechanisms involved in treating the conditions such as fever, back pain, swelling at various joints, stiffness in neck and back bone was explained. A different medicine used for the treatment of symptoms and their mechanism of action was explained properly. Strict diet restrictions along with lifestyle modification are essential parts of the therapy. Following the diet as advised not only helps in recovering fast but also in prevents further worsening of the condition. The importance of diet in treating the condition was also explained.

Keywords: Ankylosis Spondylitis, HLA B-27, NSAIDs, Corticosteroids, DMARDs
MYASTHENIA GRAVIS

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ABSTRACT

Myasthenia gravis (MG) is a long-term neuromuscular disease that leads to varying degrees of skeletal muscle weakness. The most commonly affected muscles are those of the eyes, face, and swallowing. It can result in double vision, drooping eyelids, trouble talking, and trouble walking. Onset can be sudden. Those affected often have a large thymus gland or develop a thyoma. Myasthenia gravis is an autoimmune disease which results from antibodies that block or destroy nicotinic acetylcholine receptors at the junction between the nerve and muscle. This prevents nerve impulses from triggering muscle contractions. Rarely, an inherited genetic defect in the neuromuscular junction results in a similar condition known as congenital myasthenia. Babies of mothers with myasthenia may have symptoms during their first few months of life, known as neonatal myasthenia. Diagnosis can be supported by blood tests for specific antibodies, the edrophonium test, or a nerve conduction study. Myasthenia gravis is generally treated with medications known as acetylcholinesterase inhibitors such as neostigmine and pyridostigmine. Immunosuppressants, such as prednisone or azathioprine, may also be used.

Keywords: Swallowing, Thyoma, Neostigmin
RADIOPHARMACEUTICALS BASIC PRINCIPLE FOR PET/CT

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ABSTRACT

This review provides general background on PET radiopharmaceuticals for oncological applications. This review is to provide insights into the general principles coming along with their use and preparation and not meant to give details on all different PET tracers in depth. The PET tracer plays a vital role because it provides the basis both for image quality and clinical interpretation. It is composed of the radionuclide and the molecular vehicle which determines the (bio-) chemical properties (e.g. binding characteristics, metabolism, elimination rate).

Keywords: Radiopharmaceutical Tracer, Radio pharmacology, Radiochemistry
ADDICTING DRUG–NEURAL SYSTEM, PREVENTION AND GOVERNMENT POLICIES: A REVIEW

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ABSTRACT

Addiction is a global phenomenon having a negative impact on every aspect of user’s life, physical health, social and family life, occupation, finances, etc. Addiction is not only about Cocaine, Heroin, not also about Alcohol, Smoking and Tobacco but also about addiction of general things like medicine, fragrance of some cosmetics as well as pain relieving gels. Addiction of drugs and general things has its vast impact in various regions. Different government of different countries has conducted surveys. Governments of some countries are running various policies and programs to tackle this problem like training programs, manpower development programs and rehabilitation centers etc. The Narcotics and Psychotropic Substances Act, 1985, commonly referred to as NDPS Act, is an act of parliament of India that prohibit a person to produce/manufacture/cultivate, possess, sell, purchase, transport, store and consume any narcotic drug or psychotropic substances.
MANAGEMENT STRATEGIES AND PATHOPHYSIOLOGY OF OBESITY

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ABSTRACT

Obesity is the main problem in the today's generation which reports many types of disease in very early age. Recent studies have reported all over the world, more than 1.9 billion adults are overweight and 650 million are obese or suffering from severe obesity. Approximately 2.9 million deaths are reported as a result of being overweight or obese. This is due to the less energy food or fast food and sedentary lifestyle or less physical work in life. Obesity is a risk factor for development of type 2 diabetes mellitus (T2DM), hypertension, dyslipidemia, coronary heart disease, and many cancers and it's also cause mental depression. In Asian Indians excess abdominal and hepatic fat is associated with increased risk for T2DM and cardiovascular disease and increase in bad cholesterol containing food is main reason of increasing obesity. Obesity is the side effect of many type medicine. Governmental agencies should promote the benefits of healthy life style, food habits and physical activity.
SPACE TRAVEL: ITS CONSEQUENCES AND MEDICINES

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ABSTRACT

Space medicine is the practice of medicine on astronauts in outer space whereas astronautical hygiene is the application of science and technology to the prevention or control of exposure to the hazards that may cause astronaut ill health. The main objective is to discover how well and for how long people can survive the extreme conditions in space, and how fast they can adapt to the Earth's environment after returning from their voyage. In October 2018, NASA-funded researchers found that lengthy journeys into outer space may substantially damage the gastrointestinal tissues, brains of astronauts, and age them prematurely and also they may face many problems such as cardiac rhythms, decompression illness in spacelight, decompression sickness, barotraumas, decreased immune system functioning, increased infection risk, effects of fatigue, loss of balance, loss of bone density, loss of muscle mass, loss of eyesight, loss of mental ability and risk of Alzheimer’s disease, orthostatic intolerance, radiations effect, sleep disorders. This review is all about the consequences and medicines that can be used by astronauts to prevent such diseases during the space travel and after it.

Keywords: Space Medicine, NASA, Astronautical Hygiene, Spacelight.
A REVIEW ON LEUKEMIA

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ABSTRACT

Leukemia is a cancer of the blood or bone marrow. Bone marrow produces blood cells. Leukemia can happen when there is a problem with the production of blood cells. It usually affects the leukocytes, or white blood cells. It is most likely to affect people over the age of 55 years, but it is also the most common cancer in those aged less than 15 years. Leukemia is one of the most common childhood cancers, but it most often occurs in older adults. People with Down syndrome appear to have a higher risk, possibly due to certain chromosomal changes. It has been suggested that exposure to electromagnetic energy might be linked to leukemia, but there is not enough evidence to confirm this. There are various types of leukemia, and they affect people differently. Treatment options will depend on the type of leukemia and the person's age and overall state of health, common is chemotherapy.
BASAL CELL CARCINOMA: PATHOGENESIS AND TREATMENT

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ABSTRACT

Basal cell carcinoma is the most common type of skin cancer. Basal-cell carcinoma (BCC) is also known as basal-cell cancer, it is the most common type of skin cancer. Basal-cell cancer grows slowly and then damages the tissue around it but is unlikely to spread to the distant areas or to result in death. Some risk factors are well-known such as ultraviolet radiation, fair skin type, arsenic exposure, ionizing radiation etc. Ultraviolet (UV) radiation plays a dual role in the development of BCC; it causes DNA damage and immunosuppression. UVB radiation directly damages DNA within skin cells, causing cytosine to thymine mutations at dipyrimidine sites. The treatment consisted of surgery, radiation, chemotherapy and most important is self care. This review focuses on the pathogenesis and treatment of BCC.

Keywords: Arsenic Exposure, Ionizing Radiation, Ultraviolet, DNA Damage.
INFORMING PATIENTS AND FAMILY ABOUT STORAGE AND DISPOSAL OF OPIOIDS

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ABSTRACT

Medicines play an important role in treating certain conditions and diseases, but they must be taken with care. Unused portions of these medicines must be disposed of properly to avoid harm. The purpose of this project is to identify preferred practices for safe storage and disposal of opioids during end-of-life care in the home & to develop and refine educational materials to support end-of-life patients, their families, and healthcare providers.
A REVIEW ON ALIEN HAND SYNDROME

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ABSTRACT

Alien hand syndrome is a rare neurological disorder in which one hand functions involuntarily, defined as an uncontrollable, but purposeful movements. The first known case described in the medical literature appeared in a detailed case report published in German in 1908 by the preeminent German neuro-psychiatrist, Kurt Goldstein. Alien hand syndrome is best documented in cases where a person has had the two hemispheres of their brain surgically separated, a procedure sometimes used to relieve the symptoms of extreme cases of epilepsy. It also occurs in some cases after brain surgery, stroke, infection, tumor, aneurysm and specific degenerative brain conditions such as Alzheimer's disease and Creutzfeldt–Jakob disease. Other areas of the brain that are associated with alien hand syndrome are the frontal, occipital and parietal.

Keywords: Alien hand syndrome, Neurological disorder.
ROLE OF RADIOISOTOPES IN MANAGEMENT OF CANCER

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ABSTRACT

Isotopes are variants of a particular chemical element which differ in neutron number. Radioisotopes of an element can be defined as atom that contain unstable nucleus and dissipate excess energy by spontaneously emitting radiation in the form of α, β and γ rays. Using of these isotopes in various sectors like industries, agriculture, health care and research center. In health care sectors these isotopes are used in nuclear medicine as diagnostic. Radiation therapy is important for cancer treatment. The most famous type is probably γ radiation. Radiopharmaceuticals or medicinal radio compounds are a group of pharmaceutical drugs which have radioactivity. In nuclear medicine radionuclides are combined with other chemical compounds to form radiopharmaceuticals. Radiopharmaceutical allows nuclear medicine to diagnose and treat a disease based on cellular function and physiology.

Keywords: Radioisotopes, Radionuclides, Radiopharmaceuticals.
EARLY DETECTION TECHNIQUE OF TUBERCULOSIS –
ELECTRONIC-NOSE METHOD

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ABSTRACT

Ziehl-Neelsen (ZN) was the method to detect bacterial infection tuberculosis caused by Mycobacterium tuberculosis. ZN method was too time consuming, it takes 24 hours to incubate the sample and then to detect. Some modification is required with respect to time so an effective method Electronic-nose method came in existence. This machine has gas sensors along with 14 conducting polymers to diagnose Mycobacterium spp. along with Pseudomonas aeruginosa in sputum sample or in breath air of a TB patient or to TB and HIV patient. This method can differentiate between Mycobacterium and other pathogens of lungs. It can detect various microorganisms in in-vitro and in-situ. In in-vitro it can differentiate between M.tuberculosis and M.avium. It basically detects microorganism from the volatile compound that they emit out so this may help to detect the microbial disease.

Keywords: Tuberculosis, Electronic-Nose Method.
QUALITATIVE AND QUANTITATIVE ESTIMATION ON HONEY OF DIFFERENT BRANDS IN INDIA AS PER PHARMACOPOEIA’S

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ABSTRACT

Introduction: Honey is a intricate mix which is produced by nectar of honeybees (Apis mellifera, Apis dorsata). It is a supersaturated mixture of sugars with fructose and glucose as main saccharides. It is mainly used as sweetening agent and viscosity enhancers in various AYUSH preparation. In this study an attempt is made to evaluate the Honey as per procedure mentioned in Ayurvedic text. The main objective of this study was to evaluate the quality of marketed honey, verifying their compliance with standards. Material and Methods: All the 4 brands of honey was collected from local market of Indore and were evaluated on the basis of their Organoleptic characters and Physiochemical parameters such as Total solid content, pH, phenolic content, Aldehyde content, Sugar content, Viscosity and Specific gravity. Result and Discussion: The results obtained in this study revealed that all the three formulation except last one which was local brand honey were meeting the given values of organoleptic and physiocochemical parameters as per the Pharmacopeia’s.
IDENTIFICATION OF NATURAL DRUGS BY
PHYTOMORPHOLOGICALLY

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ABSTRACT

Human beings are the most vulnerable species in the whole living kingdom. In natural way of evolution individuals which are not fit for survival eventually diminish from the world. But, human being is a species who learnt to overcome diseases and wounds by using plants and other resources growing around him. He continued breeding the stuff which is susceptible to diseases and learned to treat them by the knowledge of herbs acquired and transferred from generations to generations. Initially, it was based on observation and practice. Later on, they were documented in different treatise - Pen-t’sao (Shen Nung), Charak Samhita (Charak) and Sushrut Samhita (Sushrutha) are important milestones of medicinal literature.
HERBAL DRUG USED IN THE TREATMENT OF CANCER

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ABSTRACT

Cancer is one of the leading and most fatal diseases in the present decade, every year millions of people die because of various types of cancers. Many aspects relate to the cause of disease besides heredity, food habits, smoking, nutritional behaviours, radiation etc. The successful cancer therapy till now has been under research, only chemotherapy and radiation treatment are at times successful and much times toxic and lethal. Alternative and less toxic medication is very much in need towards the disease, the use of concepts of herbal medicine with knowledge of Ayurveda could present better drug leads towards the inhibitory treatment of cancer. Nature shows plethora of medicinal plants with anticancer and antioxidant activities which may suppress the disease completely. The search for cancer drugs from natural sources started in late 1960s, lead to discoveries of vincristine, vinblastine, camptothecin and taxol. This review certainly focuses on the herbal medicine from natural products for the discovery of new drug leads toward the cancer treatment.

Keywords: Ayurveda, Cancer, Herbal medicine, Potent compounds.
A REVIEW ON TOPICALLY ACTIVE ANTIFUNGAL PLANTS

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ABSTRACT

Fungal infections are the most common type of skin infections amongst people. Skin is the most exposed part of our body and is more prone to fungal infections. They require significant attention and need to be treated otherwise they can easily spread to other parts of the body. Due to the increased incidence of fungal infections in humans and the increasing side effects of the available anti-mycotic drugs, among which the emergence of resistant strains, there is a need for the discovery of new antifungal agents to treat fungal infections. Plants those are used in Ayurveda are known to possess antifungal activity. They have wide therapeutic range, fewer side effects, eco – friendly, cheaper and readily available. The aim of this study is to evaluate the antifungal activity of various plants such as Azadiracta indica (Neem), Tinospora cardifolia (Giloei), Plantago depressa (Isabgol), Asparagus racemosus (Satrawal), Aloe vera, Ocimum sanctum (tulsi).

In the present review the plants possessing anti-fungal activity, which can be used for the preparation of topical antifungal formulation were studied.

Keywords: Azadiracta Indica, Asparagus racemosus, Plantago depressa, Tinospora cardifolia, Ocimum sanctum.
A REVIEW ON AMLA AND ITS PHARMACOLOGICAL ACTIVITIES

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ABSTRACT

From the ancient time, plants have been playing a key role for the betterment of mankind presenting as an extraordinary source of natural medicine. Amla (Emblica officinalis Gaertn.; Amalaki in Sanskrit) is widely used in the Indian system of medicine and believed to increase defense against various diseases. It is one of the oldest oriental medicines mentioned in Ayurveda as a potential remedy for assorted ailments. A wide range of phytochemical components present in Amla including alkaloids, tannins, and flavonoids which procure useful biological activities. The extract or plant is identified to be efficacious against diversified ailments like inflammation, cancer, osteoporosis, neurological disorder, diabetes, hypertension, ulcer prevention, memory enhancement and other infectious disorders. These actions are attributed to regulation of various molecular pathways. Antioxidant property prevents the damage of cellular compartments from oxidative stress. Amla is an ingredient of many Ayurvedic medicines and tonics as it removes excessive salivation and internal body heat. Research has been done with Amla evaluating its role as an antioxidant. Amla Tonic also has a hematinic and lipalytic function useful in scurvy, prevents indigestion, and controls acidity as well as it is a natural source of anti-aging.

Keywords: Emblica officinalis, Cancer, Alkaloids, Antioxidant, Hematinic.
PHYTOSOME: AN EMERGING TECHNOLOGY FOR PHYTOMEDICINE

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ABSTRACT

Phytomedicines are the complex chemical mixtures prepared from plants, have been used for health maintenance since ancient times. But many phytomedicines are limited in their effectiveness because they are poorly absorbed when taken by mouth. Hydrophilic nature and unique chemical structure of most of the therapeutically useful phytoconstituents result in poor bioavailability and less absorption. Phytosome technology can overcome this problem in which the phytoconstituent is allowed to react with phospholipid. The phytoconstituent with poor lipid solubility on conversion into phytosome, can exhibit better pharmacodynamics and pharmacokinetics profile as compared to conventional herbal extract. Phytosomes are recently introduced herbal formulations that are better absorbed and as a result produced better bioavailability and actions than the conventional phytomolecules or botanical extracts. Phytosome technology results in an intermolecular bonding between phospholipid, phosphatidylcholine and a single molecule of phytoconstituent. Phytosome is a complex of a natural active ingredient and a phospholipid. It is claimed that phytosome increases absorption of "conventional herbal extracts" or isolated active principles. Phytosomes can be used to treat acute and chronic liver failure due to improved pharmacological and pharmacokinetic property. In market, many products based on phytosome technology are available which include herbal extracts and phytochemicals with great therapeutic potential such as curcumin, ginkgo biloba, grape seed, silymarin, and many more. The present review highlights the method of preparation, properties, advantages, and applications.

Keywords: Phytosomes, Phosphatidylcholine, Herbal Extract, Acute, Chronic.
A REVIEW ON: MEDICINAL PLANTS HAVING ANTICANCER PROPERTY

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ABSTRACT

A cancer is a disease that was developed by uncontrolled growing up of atypical cells in a fragment of body. Normal cells was habitually attacked as well as eliminated by cancerous cells. Tobacco consumption is one of the important factor that cause cancer. Environmental as well as chemical factors also play a vital role in cancer. For the treatment of cancer traditional medicament formulations impart a several effects on beneficial cells. It was very important as well as very problematic to us while treating cancer with continuous medicament. For that particular reason we have great need to bettle against this disease with more beneficial medicament. for the use as well as investigation of new therapeutic product, natural product play very huge role in fight as well as give a valuable gateway against cancer.

Medicinal plants constitute a better source of finding and blooming of anticancer agents in a disease. It contain several biologically active compounds which enable them to cure disease. They contain various secondary metabolites which include alkaloids, flavanoids, phenolics, carotenoids etc. Benefits of medicine from plant origin over synthetic (chemical) medicine have increased the importance of medicinal plants in the field of healthcare. Numerous medicinal plants are known to possess anticancer activity. Anti-cancer properties of different plants are being acknowledged comprehensive. In this review evidence based research data were emphasized to explore the medicinal plants with potent anticancer activity like Achyranthes aspera, Andrographis paniculata, Cannabis sativa, Camellia sinensis, Oroxylum indicum, Terminalia chebula, Withania somnifera, Zingiber officinale and Mangifera indica are most common.

Keywords: Anomalous, Anticancer agents, Secondary metabolites, Alkaloids, Flavanoids
LATEST DEVELOPMENTS IN ANTICANCERS AGENTS

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ABSTRACT

Increasing recurrence of mammalian tumors and severe side-effects of chemotherapeutics agents reduce the large efficacy of a large variety of anticancer agents that are currently being used. Thus, there is always a constant need to develop alternative or synergistic anticancer drugs with minimal side-effects. One important strategy to develop effective anticancer agents is to study into anticancer agents derived from natural sources. Anticancer agents derived from plants and their derivatives have been proven to be effective for cancer prevention and therapeutics. Vinca alkaloid and their derivatives, alone and in combination with therapeutics agents, have been used for a long time for the treatment of various types of cancers. Polyphenols from one of the most important and extensively used classes of plant-derived therapeutics for cancer prevention or chemotherapy. The present review highlights a plethora of studies focused on the antineoplastic properties of plant derived chemicals, such as vinca alkaloid, saponins, and flavonoid.

Keywords: Natural products, Plant-Derived Chemicals, New Anticancer Agents.
Biopesticides involving entomopathogenic viruses, bacteria, fungi and plant secondary metabolites are used as a replacement of chemical fertilizers with the alternative safe way to humans and non-targeted organisms, this has lead to increase the use of Biopesticides as they are an important component of Integrated pest management (IPM) program. There are several categories of Biopesticides used microbial, plant incorporated, biochemical and semiochemical pesticides out of which biochemical pesticides (Herbal pesticides) are beneficial in use because they use non-toxic and natural mechanisms to kill or inactive the pest. This paper reviewed the current state knowledge of Biopesticides highlighting its concept, the potential use of Biopesticides it’s categories, formulation, advantages and disadvantages and advancement in technology and empirical information on mechanisms of action of Biopesticides on pest control.
PRACTICAL ASPECTS OF HERBAL DRUG DISCOVERY

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ABSTRACT

Natural products have been the single most productive foundation lead for the development of drugs. For thousands of years, natural products have played an important role throughout the world in treating and preventing human diseases. Plants have been always used as medicine by mankind to treat health-threatening diseases and still popular to obtain new drug candidates as it is the oldest medical practice for humans. The use of botanical natural health products are on the increase all over the world. It is known that almost 80% of the populations in developing countries rely on the traditional medicine, mainly composing herbal prescriptions. Some compounds are used as active ingredients in the form directly isolated from plant extracts; others are synthesized to mimic a natural plant compound. Therefore, natural compounds could be good models for developing novel drug molecules. Pharmaceutical research took a major leap when alongside natural products chemistry; pharmacologists, microbiologists and biochemists began to unravel the chemistry of natural processes in human, animals, plants and microorganisms. The following review represents a summary of the basic stages involved in the development of pure drug from a plant source. Drug discovery from medicinal plants has evolved to include numerous fields of inquiry and various methods of analysis. The process typically begins with collection and identification the plants of interest. Developing a herbal drug involves collection and authentication of the material, pharmacognostic, phytochemistry and pharmacologic evaluation, and standardization.

Keywords: Drug discovery, Pharmacognostic, Phytochemistry, Pharmacologic, Standardization.
AN OVERVIEW OF ADVANCES IN THE STANDARDIZATION OF HERBAL DRUGS

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**ABSTRACT**

Herbal formulations have reached extensive acceptability as therapeutic agents for several diseases. The development of authentic analytical methods which can reliably profile the phytochemical composition, including quantitative analyses of marker/bioactive compounds and other major constituents, is a major challenge to scientists. Standardization is an important step for the establishment of a consistent biological activity, a consistent chemical profile, or simply a quality assurance program for production and manufacturing of herbal drugs. WHO specific guidelines for the assessment of the safety, efficacy and quality of herbal medicines as a prerequisite for global harmonization are of utmost importance. An overview covering various techniques employed in extraction and characterization of herbal medicines as well as herbal nanomedicines standardization is reported. In addition, phytosomes increased bioavailability, bhasma as a metal nanocarrier drug delivery system, potential of metabolomics in the development of improved phytotherapeutic agents, DNA based molecular markers in distinguishing adulterants, and SCAR markers for authentication and discrimination of herbs from their adulterants are reported. The extraction of high-valued herbal compounds using microwave-assisted extraction and supercritical phase extraction technology followed by the standardization utilizing various spectroscopic or in combination has been discussed in relation to herbal drugs. Capillary electrophoresis and polarographic techniques contributions towards standardization of herbal drugs is also reported. Nanotechnology based Chinese herbal drugs possess improved solubility and enhanced bioavailability.  

**Keywords:** Herbal drugs, standardization, nanoherbal drugs, phytosomes, DNA marker, chromatographic and spectroscopic techniques.
Evolving Herbal Formulations in Management of Dengue

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ABSTRACT

Dengue is considered as an imperative arboviral ailment. It causes mortality and morbidity around the world. It caused by the arthropode-borne flavivirus named dengue virus (DENV), transmitted by the Aedes aegypti mosquito. It is widespread in more than 100 countries and it is anticipated that yearly above 390 infections arise worldwide. Between 1996-2015, an enormous increase of more than 500 percent has been recorded in number of dengue cases in India. There are no precise worldwide established treatments for dengue fever in any scheme of medicine. Out of the various plants reported against dengue in certain local treatments or home remedies only few have been studied scientifically. Among the important herbal agents Neem, Papaya, Sea Buckthorn or Seaberry, Fenugreek, Basil and Velvet Leaf extract have been found successful and confirmed enhancement in medical symptoms and undeviating inhibitory result on dengue virus.
A REVIEW ON HERBAL PLANTS CONTAINING ACETYLCHOLINESTERASE INHIBITORY ACTIVITY

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ABSTRACT

Acquisition of information and skill is termed as memory. Cognition comprises of learning and memory. Memory is a process involves encoding, storing, and recalling information from previous recognition. Neurotransmitter modification is an important aspect for memory enhancement. Inhibition of acetylcholinesterase (AChE), which is the main enzyme responsible for the breakdown of acetylcholine, is consider as a promising tool for the treatment of neurological disorder. A potential source of AChE inhibitor is certain provided by the abundance of plants in nature. This article aims to provide plants having AChE inhibitory activity. Numerous phytoconstituents and promising plant species as AChE inhibitors are described in this review.

Keywords: Acetylcholinesterase, Phytoconstituents, Amensia, Acetylcholine.
ALOEVERA: A REVIEW ON ITS MEDICINAL USES

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ABSTRACT

Aloe vera is the oldest medicinal plant ever known and the most applied medicinal plant worldwide. The plant leaves contains numerous vitamins, minerals, enzymes, amino acids, natural sugars and other bioactive compounds with emollient, purgative, antimicrobial, anti-inflammatory, anti-oxidant, aphrodisiac, anti-helmenthic, antifungal, antiseptic and cosmetic values for health care. Aloe is a powerful detoxifier and tonic for the nervous system. It also has immune-boosting and antiviral properties. This plant has potential to cure sunburns, soothe skin injuries affected by burning, skin irritations, cuts and insect bites, relieve itching, skin swellings and even skin cancer. The external use in cosmetic primarily acts as skin healer and prevents injury of epithelial tissues, cures acne and gives a youthful glow to skin, also acts as extremely powerful laxative. It is known to help slow down the appearance of wrinkles and actively repair the damaged skin cells that cause the visible signs of aging.

Keywords: Antifungal, Burning, Wrinkles, Anti-Oxidant, Medicinal Plant.
NEUTRACEUTICALS FORMULATION IN MANAGEMENT OF CANCER

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ABSTRACT

Neutraceuticals are commonly prescribed to malnourished patients to improve their nutritional status. Taste and smell changes in patients with cancer can affect the palatability of oral nutritional supplement. Eating fruits and vegetables lower the risk of chronic diseases like cancer. Citrus peels which is wasted in huge amounts, as cancer preventive food additive and as anticancer agent. The available evidence linking orange juice with cancer chemoprevention and on discussing the putative mechanisms and health effect. There are no specific globally accepted treatments for cancer in any system of medicine. Ascorbic acid and citrus juices where not able to bind with LDL, VLDL and protect it from oxidation. The chemo preventive action of orange juice is related to its effect on metabolic enzymes and its cytoprotective/apoptotic, hormonal cell signaling-modulating, antioxidant and antigen toxic effect.
STANDARDIZATION OF *ASTERACANTHA LONGIFOLIA*

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**ABSTRACT**

Asteracantha longifolia (L.) Nees, Acanthaceae, is a source of the ayurvedic drug. It is also known as ‘kokilaaksha’, ‘Talimakhana’, ‘Indian Cuckoo’. The plant is widely distributed throughout India, Sri Lanka, Burma, Malaysia and Nepal. It contains lupeol, stigmasterol, betulin, fatty acids, saponins, alkaloids, steroids, tannins, flavonoids and triterpenoids are the main phytoconstituents. The plant is known to possess antitumor, hypoglycemic, aphrodisiac, antibacterial, free radical scavenging and lipid peroxidation, hepato-protective and haematopoietic activity. Standardization of herbal formulations is essential in order to assess of quality drugs, based on the concentration of their active principles, physical, chemical, phytochemical and standardization, and In-vitro, In-vivo parameters. The result of the Asteracantha longifolia showed the presence of alkaloids, amino acids, carbohydrates, proteins, steroids, cardiac glycosides, saponin, flavoinds, tannins, and phenolic compounds. Results of macroscopic study, chemical study, phytoconstituents, ash value (acid-insoluble and water soluble ash value), extractive value,(alcohol-soluble and water soluble extractive value) were also determined. The plant can be studied further for the advanced parameters.

**Keywords**: Standardization, In-vitro, In-vivo.
THE EFFECT OF PLANT DEFENSE ELICITOR ON COSTUS IGNEUS FOR THE ENHANCED PHYTOCHEMICAL PRODUCTIVITY

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ABSTRACT

Medicinal Plants have proven potential of treating and preventing various disorders and illness from the ancient time. Many Phytopharmaceuticals companies are emerging as a result of its popularity in both the developed as well as developing countries. Newer approaches are developed to protect the plant source and to enhance its productivity in terms of phytochemicals so that the demand and supply can be balanced. *Costus igneus*, a newer plant to India is gaining its popularity for its use as ornamental plant in southern part of the country to Diabetes treatment herbal remedy. Flavonoid diglycosides and sapogenins are mostly responsible for its anti-diabetic activity. Due to over exploitation of plant some alternative methods has to be developed in order to protect the plant from its natural habitat. Elicitors are the compounds that stimulating plant defence pathways and the secondary metabolites are released due to defence responses which are triggered and activated by elicitors. The present study was focused on the application of Salicylic acid (SA) as an elicitor in different concentration (0.05 mg/l, 0.100 mg/l, 0.150 mg/l), which was sprayed on the plants of *Costus igneus* grown using complete block design in controlled growth conditions provided in polyhouse and the quantitative estimation for phytochemicals was done. The results suggest that SA enhances the quantity of desired phenolic and flavonoid phytopharmaceuticals, which also plays as essential role in plant defensive pathways.

Keywords: Medicinal plants, phyto-pharmaceuticals, *Costus igneus*, Elicitors, Salicylic acid (SA), plant defense mechanism.
A REVIEW ON MEDICINAL PLANT CONTAINING ANTHelmINTIC ACTIVITY

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ABSTRACT

Infections caused by endoparasites, including nematodes, protozoa, termetodes and cestodes which effects more than 30% of the human population. Many synthetic drugs were discovered for the purpose but most of them produce more side effects than that of the treatment efficacy, some develops anthelmintic resistance and the high cost of conventional anthelmintic drug lead to the need for the exploration of the plants for the treatment has attained a great interest. Medicinal plants containing anthelmintic properties can be used as an alternative source as they are the potent source of many pharmacological activities. This review gives a detailed data of the medicinal plants bearing anthelmintic activity.

Keywords: Anthelmintic, Endoparasites, Anthelmintic Resistance, Medicinal Plants, Pharmacological Activity
HERBAL FIGHT FOR OBESITY: A REVIEW

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ABSTRACT

Obesity is a very common global health problem, and it is known to be linked to cardiovascular and cerebrovascular diseases. Western medical treatments for obesity have many drawbacks, including effects on monoamine neurotransmitters and the potential for drug abuse and dependency. The safety of these medications requires improvement. Herbal medicine has been used for treatment of disease for more than 2000 years, and it has proven efficacy. Many studies have confirmed that herbal medicine is effective in the treatment of obesity, but the mechanisms are not clear. This article will discuss the possible effects and mechanism of herbal medicine treatments for obesity that have been reported in the past decade. Obesity is a metabolic disorder characterized by an excess accumulation of fat in the body due to energy intake exceeding energy expenditure. Obesity is an increasingly common phenomenon all over the world. Body mass index is the most commonly used measure to evaluate the degree of obesity. In 2016, the AACE (American association of clinical endocrinologist) released new diagnostic criteria of obesity based on BMI combined with obesity related complications. Obesity has become a worldwide epidemic, and the trend is becoming increasingly serious.

Keywords: Obesity, Neurotransmitter, Monoamine, AACE.
BIOORGANIC MANURE: A REVIEW

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ABSTRACT

The application of microbial inoculants (biofertilizers) is a promising technology for future sustainable farming systems in view of rapidly decreasing phosphorus stocks and the need to more efficiently use available nitrogen (N). Various microbial taxa are currently used as biofertilizers, based on their capacity to access nutrients from fertilizers and soil stocks, to fix atmospheric nitrogen, to improve water uptake or to act as bio control agents. Bio-fertilizers with organic manures are the best modern tools and gift of our agricultural science. Conventional fertilizers contain compost, household wastes and green manures which are not as effective as chemical fertilizers. So, farmers often try to use chemical fertilizers in the field for crop development. But obviously the chemical fertilizers are not environment friendly because of their chemical toxicity that can cause water, air and soil pollution and can spread cancer causing agents. Scientists have developed the way of organic farming by use of “Bio-fertilizers” along with natural manures to prevent chemical pollution in farm lands. Treatment techniques: Cattle shed wastes-dung, urine and slurry from biogas plants, human habitation wastes-night soil, human urine, town refuse, sewage, sludge and sullage, poultry Jitter, droppings of sheep and goat.
IMPORTANT ROLE OF NUTRACEUTICALS IN DAILY DIETS

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ABSTRACT

Nutraceuticals may range from isolated nutrients, dietary supplements and diets to genetically engineered “designer” foods, herbal products and processed products such as cereals. The nutraceuticals or the functional foods are majorly plant-based products and most of them being predominantly herbal. Hence clues to these nutraceutical products could be got from our ancient and traditional systems of medicine like Ayurveda and Siddha. Therefore, there is ample scope for India to develop a range of nutraceutical /health food products based on our traditional knowledge base in Ayurveda. Ancient medical men used various plants in attempts to treat or prevent illnesses; this is largely due to the advances in scientific investigation techniques that occurred during this period. This has revolutionized the developments in knowledge about nutrition and related areas pertaining to food habits. Significant substance that may be considered as a food or part of a food and provides medical or health benefits including the prevention and treatment of disease.

Keywords: Herbal, Nutrition, Dietary Supplements etc.
FORMULATION AND EVALUATION OF HERBAL JOINT PAIN OIL

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ABSTRACT

A different type of herbs and essential oils which can be used for pain and inflammation associated with sports and exercise, as well as pain and inflammation associated with rheumatism, arthritis, surgery, or other medical conditions herbs like nirgundi. It gives quick action of relief from any type of joint pain in the body after rubbing on the body as a result no strains persist at the body. The objective which can be study is to prepare herbal pain relief oil and different type of parameter are used for evaluate in formation of herbal pain relief which can be used for Vitex negundo as well as for its medicinal value, two formulation are involved to preparing for preparation of herbal pain relief oil F1 and F2. F1 is the first formulations process which consist of herbal extract and also vitex negundo (leaves) and sesame oil as base oil, this are the second formulation process is F2 for comprises of extract of vitex negundo and sesame oil as base oil and essential oils. Both the formulation were evaluated for color and odour. The herbal oil passes the microbial test herbal oil fomed for fungal and bacterial growth. The massage oil samples comply for the requirements of acid value, peroxide value and saponification value. All the ingredients used are of natural origin. The essential oils used have many benefits when used effectively, they provide relief from pain, provide soothing effect to skin benefits.
REVIEW ON APITHERAPY & ITS MEDICINAL USES

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ABSTRACT
Apitherapy is a branch of medical science which deals with the use of honey bee products including honey, pollen, propolis, royal jelly and bee venom. Various bee secretions and their medicinal uses - Honey - Makes skin shiny and glowing, Eye care, Used by diabetics, weight loss, enhances metabolic rate. Royal Jelly - Strengths immunity, improves digestion, regulates blood sugar level, enhances metabolic rate, anti-inflammatory action, and reduces the risk of cancer. Pollen - Improves the process of digestion, boost up immunity, keeps heart healthy, and maintains energy level. Propolis – Helps to cure common cold and sores, inflammation and rheumatoid arthritis. These products are used for the treatment of rheumatoid arthritis, arthritis, sciatica, lower back pain etc. The constituent of bee venom (Bv) are lipids, carbohydrates, amino acids, enzymes, peptides, biogenic amines etc. The chief constituents are Sulfur, Melittin, Apamin and Adolapin. These components stimulate the function of immune system and stimulate the release of cortisol from zona fasciculata of adrenal cortex. Moreover they are involved in anti-inflammatory reactions by inhibiting the activity of enzyme Phospholipase A2 which in turn prevents the conversion of phospholipids into arachidonic acid metabolites (COX & LOX Pathway). This action of bee venom inhibits the release of Leotrinnes (LTB4, LTD4, and LTE4), Prostaglandins, Prostacyclins and Thromboxanes thereby showing anti-inflammatory activity.

Keywords: Apitherapy, Bee venom, Melittin, Adolapin, Apamin
QUANTIFICATION OF GALLIC ACID AND ELLAGIC ACID IN DADIMASHTAKA CHURNA BY HPTLC METHOD

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ABSTRACT

Dadimashtaka Churna, as per Bhaisajaya Ratnavali is used for the treatment of Diarrhoea. In the present study, an attempt has been made to develop a HPTLC (High Performance Thin Layer Chromatography) method for quantitative estimation of marker compounds, ellagic acid and gallic acid in laboratory prepared authentic formulation and a commercial formulation of Dadimashtaka Churna. The two formulations were subjected to hydroalcoholic extractions using Soxhlet apparatus. Ellagic acid and gallic acid were quantified in the above two extracts by using HPTLC. It was observed that other constituent’s presents in the formulation did not interfere with the peak of Ellagic acid and Gallic acid. Thus, the solvent system of n-hexane and ethyl acetate is found to be an ideal mobile phase for separation of Ellagic and Gallic acid. Standard ellagic and gallic acid showed a single peak in HPTLC chromatogram. The percentage recovery studies revealed a recovery of 99.4% w/w of ellagic acid and 98.76% w/w of gallic acid, thus proving the accuracy and precision of the analysis. Since this method resolves and quantifies ellagic acid and gallic acid effectively, it can be used to quantify the concentration of both the active principles in the herbal formulations.

Keywords: Dadimashtaka Churna, Ellagic Acid, Gallic Acid, HPTLC, Validation
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