ORIENTAL UNIVERSITY, INDORE

NATIONAL CONFERENCE
ON
RECENT ADVANCEMENTS IN
PHARMACEUTICAL AND BIO SCIENCES

SUPPORTED BY

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES
AND RESEARCH (IJPSR)

SEPTEMBER 17th, 2019

ORIENTAL COLLEGE OF PHARMACY AND RESEARCH
ORIENTAL UNIVERSITY, INDORE

SOUVENIR
About the Conference

National Conference 2019; based on the theme “Recent advancement in Pharmaceuticals and Bio Sciences” is conducted by Oriental College of Pharmacy and Research, Oriental University Indore. The conference spanning one day 17th September 2019, includes scientific symposium by renowned national speakers which gives us an insight into the latest developments in Pharmaceutical, Medical and Bio Science. More delegates are expected to participate from all over globe. The unique event explored the significance of new trends, ideas, research experience, foster collaborations across industry, academia and evaluate emerging pharmaceutical technology across the globe.

The National Conference on Recent Advancement is aimed to provide a unique platform for professionals, researchers, academicians, industry delegates and allied fields of Pharmaceuticals and Bio Sciences to interact/share their experiences and knowledge on Pharmaceutical and Bio Sciences. The technical sessions will consists of keynote talks on Quality Risk Management and advancement in pharmaceutical field followed by poster presentation with various awards for meritorious presentations.
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<td>Ganesh Vandana &amp; Lightening of Lamp</td>
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<td>Floral welcome of <strong>Hon’ble Chief guest</strong> Mr. Himanshu Shah Director, Vishal Pharmaceutical Laboratory, Indore. <strong>Guest of Honour</strong> Mr. Mahanand Baleshwar Thakur Plant Head, Mc W Healthcare Pvt. Ltd, Indore. Mr. Gaurav Ajmera Director, Ajmera Herbals Ltd, Indore Dr. Anil Kharia. President, IPA, MP State; Director, Modern Group Of Institute; Director, Modern Laboratory Ltd, Indore <strong>Speakers:</strong> Mr. Ranjit Barshikar Quality Management Consultant, Mumbai (Qbd International), indore Dr. Upendra Nagaich Associate Professor, Amity University, Noida Mr. Vinay Verma Site Quality Head SGO and API; Sun Pharmaceutical Industrial Ltd, Indore</td>
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<td>Welcome Speech by Dr. M.K.Gupta, Dean, Pharmacy, Oriental University, Indore</td>
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<td>Speech by Hon’ble Vice Chancellor Dr. Dhruva Ghai</td>
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<td>MOU with Mc W Healthcare Pvt Ltd, indore MOU with Vishal pharmaceutical laboratory, indore MOU with SPER, New Delhi</td>
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<td>Speech by Chief Guest Mr. Himanshu Shah, Director, Vishal pharmaceutical laboratory, indore</td>
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CHIEF PATRONS

Hon’ble Dr. K.L. Thakral
Chancellor
Oriental University, Indore

Shri. Praveen Thakral
Chairman
Oriental Group of Institute, Bhopal

PATRONS

Dr. Dhruv Ghai
Vice Chancellor
Oriental University, Indore

Mr. Gaurav Thakral
Executive Director
Oriental University, Indore

Dr. Garima Ghai
Dean, Academics
Oriental University, Indore

Mrs. Sonia Thakral
Asst. Director
Oriental University, Indore
CONVENER

Prof (Dr.) M.K. Gupta
Dean, Pharmacy
Oriental University, Indore

ORGANIZING COMMITTEE

REGISTRATION COMMITTEE
Dr. Neelam Khan
Ms. Pooja Shree Verma
Ms. Gulfisha Shaikh

STAGE/VENUE/MEDIA COMMITTEE
Dr. Nitu Singh
Ms. Shruti Joshi
Mrs. Raksha Goswami

SCIENTIFIC COMMITTEE
Dr. Neetesh Jain
Mrs. Adityaraje T. Pandit
Mrs. Urvashi Sharma

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Ms. Shruti Joshi
Dr. Neeraj Kumar Sharma
Mr. Deepak Kumawat

Dr. Gurdeep Singh
Dr. Shivendra Singh
Dr. Neeraj Kumar Sharma
Mr. Rahul Sisodiya

Ms. Deepika Bairagee
Mrs. Apoorva Tiwari
Mr. Rahul Sisodiya
Dr. Dharmendra Solanki
CHIEF GUEST

Honourable Chief Guest
Prof. (Dr.) Shailendra Saraf
Vice President, Pharmacy Council of India,
Delhi, India

Honourable Chief Guest
Mr. Himanshu Shah
Director
Vishal Pharmaceutical Laboratories, Indore
GUEST OF HONOUR

MR. ANIL KHARIA
Chairman, Modern Group of Institute, Indore
Managing Partner, Modern Laboratories, Indore

MR. MAHANAND THAKUR
General Manager, McW Healthcare, Ahmedabad, Gujrat

MR. GAURAV AJMERA
Director, Ajmera Herbals Limited, Indore
SUPPORTERS

Dr. SHASHI ALOK
Editor-in-Chief, International Journal of Pharmaceutical Sciences and Research, Panchkula (HR), India
Asso. Prof. Institute of Pharmacy, Bundelkhand University, Jhansi, UP, India

Mrs. MONIKA SABHARWAL
Managing Editors, International Journal of Pharmaceutical Sciences and Research, Panchkula (HR), India
KEYNOTE SPEAKER

Mr. Ranjit Barshikar
Quality management consultant & QbD International, Mumbai, MH

Mr. Vinay Verma
Sr. General Manager- Head Quality, Sun Pharma Ind. Ltd. Dewas, MP

Dr. Upendra Nagaich
Coordinator, Amity University, Noida
Editor-in-Chief, Society of Pharmaceutical Education and Research (SPER), Noida, UP
It gives me immense pleasure to know that the Oriental college of pharmacy and research, Oriental University, Indore is organizing national conference on Recent Advancements in Pharmaceutical and Bio Sciences on September 17th, 2019. The oriental college of pharmacy, Indore is always playing leadership role in pharmacy profession by organizing different academic and scientific activities with an aim to upliftment of the profession. All the stakeholders of Oriental university deserve compliments for the same.

In the national context the profession needs new innovations and invention and this is only possible through interdisciplinary research with the collaboration of basic sciences. Hence the theme of the conference is well taken and in line with the need of the contemporary society.

I am sure this conference will provide excellent platform for the faculty, researchers and students to interact with industrial leaders and policy makers. I would like to congratulate the organizing committee for pious initiative.

My good wishes for the grand success of the conference.

With best regards

With Best Wishes

[Signature]

Dr. Shailendra Saraf
Institute of Pharmacy
Dean, Faculty of Technology (Pharmacy)
Pt. Ravishankar Shukla University
Raipur 492010 (C.G.)
E-mail: dr.shailendrasaraf@gmail.com
University Institute of Pharmacy

Vice-President
Pharmacy Council of India, New Delhi
Chancellor’s Message

Dr. K.L. Thakral, Chancellor
Oriental University, Indore

I am very happy to know that Department of Pharmacy is going to organize the National Conference with the theme “Recent Advancement in Pharmaceutical and Bio Science” on 17th September 2019.

Organizing an event does not come without effort. It requires vision, mission and hard work. Conferences of such nature provide a great opportunity to Pharma fraternity, not only to update knowledge and keep abreast of the latest developments in the respective field, but also an occasion for the resource persons, delegates to exchange ideas and interact with each other.

I take this opportunity to congratulate the organizing committee and to extend warm welcome to the resource persons and delegates. I thank all the national and international delegates who have come from various parts of the country and across the globe. We consider it a privilege and honour to have all of you here.

I wish you all for the grand success of this wonderful event.
Chairman’s Message

Shri. Praveen Thakral, Chairman
Oriental Group of Institutes, Bhopal

It gives me immense pleasure to write a message for the National Conference on Recent Advancement in Pharmaceutical and Bio Sciences on 17th September 2019 hosted by Department of Pharmacy, Oriental University, Indore.

Conferences offer wonderful plateforms for interaction and exchange of scientific initiatives and ideas. It will provide a great platform to further explore the ever expanding horizons of academic and industrial collaborative research.

I am confident that the conference shall provide an effective platform for innovation, technology transfer and entrepreneurship concurrently meet to share and disseminate the knowledge and the rich experience of the Pharma professionals, and look forward to solutions for challenging problems.

The organizing committee has worked hard to make this conference a memorable one. It has been a good learning experience for the students as well for their endless hard work of months to make this conference a grand success.

I hope this event will motivate everybody. I assure you that we will make your time spent with us in the conference a memorable one.
Dr. Dhruva Ghai, Vice Chancellor
Oriental University, Indore

It is a matter of great pleasure to host the National Conference on “Recent advancement in Pharmaceutical and Bio Sciences” on 17th September 2019. This conference aims to develop insights into the national scenario of pharmaceutical industrial and academic research by offering a common platform to pharmaceutical scientists, researchers and students.

The conference will stimulate the scientific temper among students, teachers and industrial leaders for building a bridge between academia and industry. Industrialists across the region will participate as invited speakers to address the current need in the field of Pharmaceutical and Bio Sciences.

Conferences are meant essentially for scientific exchange and generation of new ideas in the chosen field along with personal interaction and networking. I understand that a number of national speakers are participating to speak on a variety of topics thus enriching the knowledge of all participants.

I wish the conference all the success and my heartiest congratulations to the organizing committee.
I have immense pleasure in writing this message on the occasion of National Conference on Recent Advancement in Pharmaceutical and Bio Sciences by the Department of Pharmacy, Oriental University, Indore on 17th September 2019.

This conference will provide a platform to groom young scientists from all over the country and to bridge the researchers working in academia and other professionals through current technological trends. It is high time to create research activities among the budding professionals.

May this Conference provide greater opportunities for every member of this speciality to learn more and let this learning be of immense help to the community at huge.

I congratulate the organizers for their initiative and wish the Conference all success.
Prof (Dr.) M. K. Gupta,
Dean, Pharmacy
Oriental University, Indore

Convener’s Message

Warm Greeting to All !!!!!

It gives me an immense pleasure that Department of Pharmacy is organizing the National Conference with the theme of Recent Advancement in Pharmaceutical and Bio Sciences on 17th September 2019.

The conference is aimed to provide the platform for industrialists, educationists, researchers and students to debate and discuss on the vital need of research. The unique event will explore the innovation in Pharmaceutical and Bio Sciences. The collective and comparative discussion will establish the crucial insights on exciting work happening in the interface of the academic & industrial research.

The entire conference will be in parallel sessions and this conference will be addressed by eminent industrialists and professors as key note/invited speaker while it will also attract young researchers, faculties and students across the country, who will take part as poster presentations.

I extend my warm welcome to the national resource persons young researchers, budding Pharma professionals, eminent scientists, guests, faculties, and industrialists in this splendid conference and wish the conference a great success.

Best Wishes!!!
On behalf of the Oriental University, Indore, I heartily extend warm welcome to all the National Delegates, Renowned Scientists and participants to this National Conference with the theme of Recent Advancement in Pharmaceutical and Bio Sciences on 17th September 2019. The presence of other dignitaries during the two days conference is a further testimony to our sincere pursuits to achieve nothing less than the 'best', they have long trails of success behind them.

I am confident that the conference shall provide an effective platform for innovation, technology transfer and entrepreneurship concurrently meet to share and disseminate the knowledge and the rich experience of the Pharma Professionals, and to look forward solutions to the challenging problems.

The organizing committee has worked hard and in different directions to make this conference a memorable one. It has been a good learning experience of my dear students for their endless hard work of months to make this conference a grander success.

I intend to take this event ahead as an ideal, the motive not only is to generate discussions around contemporary issues, but also to propel the culture of academic exchange, which is the only way to achieve excellence in this field.

I hope this event fruitful for everybody. I assure you that we will make your time spent with us and in the conference a memorable one.
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3D PRINTING: FUTURE OF PHARMACEUTICAL INDUSTRY
Sudhanshu S.*, Kuldeep V., Dinesh K. Mishra
Indore Institute of Pharmacy, Opp. IIM, Rau Indore
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Abstract:
Three-dimensional printing enables the development of diverse geometric through computer aided design using different techniques and material for desired application such as pharmaceutical drug delivery medicine. The 3D printing has become one of the most revolutionary and powerful tool serving as a technology of precise manufacturing of individually developed dosage form, tissue engineering and disease modeling. There are multiple 3D printing method- including selective laser sintering, binder deposition, stereo lithography, inkjet printing, extrusion-based printing, and fused deposition modeling- which are compatible with printing drug products, in addition to both polymer filament and hydrogels as materials for drug carriers. It’s present regulatory agencies expectation, limitation, and problems in establishing such setup for production of drug product, advantages, disadvantages, application, method and associated risk involved in manufacturing.

Keywords: 3D printing; Tissue engineering; Hydrogels; Dosage form.
ARTIFICIAL INTELLIGENCE IN DRUG DESIGN-A REVIEW
Garvita Sharma*, Huzefa Kachchawala ,Hitesh Pathak, Neha Kamalpuria , Dinesh Kumar Mishra
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Abstract:
Artificial intelligence (AI) uses personified knowledge and learns from the solutions it produces to address not only specific but also complex problems. Artificial Intelligence can greatly benefit the drug discovery field by lowering the high failure rate, high cost, reduced efficiency and finding novel intellectual property.

The computer based drug design techniques have been successfully applied in almost every stage of the drug discovery and development to speed up the research process and reduce the cost and risk related to preclinical and clinical trials. Using machine learning theory and pharmacological data, the artificial intelligence (AI) technology, has cut a figure in various fields of the drug design, such as virtual screening, activity scoring, quantitative structure-activity relationship (QSAR) analysis, de novo drug design, and in silico evaluation of absorption, distribution, metabolism, excretion and toxicity properties.

Artificial intelligence has the potential to stimulate and streamline drug discovery and development by increasing our understanding of complex biology, guiding drug design, and by assisting other more non-interesting elements of pharmaceutical R&D and regulatory affairs.

Keywords: Novel intellectual property; Virtual screening; Activity scoring; Quantitative structure-activity relationship (QSAR) analysis; De novo drug design
THREE DIMENSIONAL (3D) DRUG PRINTING: A REVOLUTION IN PHARMACEUTICAL SCIENCE

Huzefa Kachchawala*, Garvita Sharma, Hitesh Pathak Neha Kamalpuria, Dinesh Kumar Mishra

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Abstract:
Three-dimensional (3D) printing is a manufacturing method in which objects are made by fusing or depositing materials in successive layers laid down under computer control. Since the inception of 3D printing in 1984 it has evolved immensely and has been used in many fields including architecture and more recently in pharmaceutical manufacturing. 3D printing in pharmaceuticals has been used to produce many novel dosage forms like microcapsules, nano-suspensions, and multilayered drug delivery devices. From industrial point of view it also offers important advantages like, cost-effectiveness, increased productivity, democratization of design and manufacturing, and enhanced collaboration and a way to produce personalized medicines. Keeping in view the recent approval given by USFDA to the first 3D printed antiepileptic drug the focus has now shifted to the personalized medicine as it offers an important benefit to patients who need medications that have narrow therapeutic indices or a higher predilection to be influenced by genetic polymorphisms. However, there are some problems that restrict the applications of 3DP in commercial market, such as the selections of suitable binders, excipients and the pharmaco-technical properties of final products. Further advancement in process performance is required to overcome these issues where 3DP technology can be successfully combined with NDDS.

Keywords: 3D printing; personalized medicine; manufacturing
Abstract:
Disease ailments are changing the patterns, and the new diseases are emerging due to changing Environment. The rapid growth of world population has overburdened the existing resources for the drug. Marine Pharmacology is a branch of Pharmaceutical Science which focuses on the substances with active Pharmacological properties present in Marine species of plants and animals. The first biologically active Marine natural product was formally reported in late 1950 by Bergmann in late 1970, it was established that Marine plants and animals are genetically and biochemically unique. Around 15000 such unique natural compounds have been described and out of them 30% products have been isolated from sponges. Marine Environment is an exceptional store house of novel bioactive natural products, with structural and chemical features generally not found in terrestrial natural product. Thus ecological resources comprising a variety of aquatic plants and animals these aquatic organism are screened for antibacterial, immunomodulator, Antifungal, Antiinflammatory, Anticancer, Antimicrobial, neuroprotective, analgesic and Antimalarial properties. The drugs Manufacture are always on the lookout for new resources to develop effective and safe drug for the increasing demand of the world population. Marine Environment represent countless and diverse resource for new drug to combat major disease such as Cancer or Malaria.

Keywords: Marine; Health care; Bioactive
A REVIEW: SELF-EMULSIFYING DRUG DELIVERY SYSTEM
Gujrati Aditi*, Jain Vikas, Pandit Deepika, Mahajan SC
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Abstract:
Oral route is the most common safe and convenient route for the administration of drugs. Orally administered drugs should possess very good aqueous solubility for better absorption and bioavailability. Self-emulsifying drug delivery systems (SEDDS) are novel drug delivery systems that were created with the objective to enhance the bioavailability of poor aqueous soluble drugs. SEDDS belong to the group of lipid-based formulations which are easily manufactured by using physically stable isotropic mixtures of oil, surfactants, co-surfactants and solubilized drug substances. In gastro-intestinal tract (GIT) this systems form fine emulsions of globule size less than 5μm in diameter and or micro-emulsions having globule size as small as 10 nm in diameter with mild agitation provided by gastric mobility. The process of self-emulsification is dependent on various diverse factors such as the nature of oil, surfactant, co-surfactant, oil/surfactant ratio, and the polarity of the emulsion. SEDDS are a promising approach for the formulation of drug compounds with poor aqueous solubility. In the gastrointestinal tract, these systems are spontaneously emulsified and they are packed in hard or soft gelatin capsules, which form the emulsions when they are dispersed in the gastric fluids. Now a days several formulations are commercially available which utilize self-emulsifying drug delivery technology. SEDDS may have future potential in increasing the rate and extent of absorption of orally administered drugs. This poster attempts to present an overview on the self-emulsifying drug delivery system along with their mechanism, evaluation and its applications.

Keywords: SEDDS; GIT tract; micro-emulsions; self-emulsification.
GROWTH OF EDIBLE VACCINES

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Abstract:
Vaccine present a useful contribution to the field of biotechnology it provides the protein against the various disease but the major obstacle to the area of vaccination is the digestive micro molecule antigen protein. To address this vaccination are prepared it is prepared by using genetic engineering in which the selected genes are introduced into the plants by the means of methods. Its preparation is generally affected by the efficacy in the modally system, antigen selection and attitudes to genetic modification. It triggers the immunity at the mucosal surface. Edible vaccines are having a low level of the side effects .edible vaccine are inexpensive vaccine that might be particularly useful in immunizing people in developing countries .edible vaccine are a solution for the various aliments .it is useful in treatments of various disease like cholera measles, rabies, std etc. it is having a more advantage to the traditional vaccine. it would overcome the problems associated with the traditional vaccines like cost, production , distribution, and delivery incorporated with the immunization plans.it would be more beneficial to the upcoming era .

Keywords: Vaccines, Immunization, Genetic Modification
Abstract:

The Mobile Cancer Screening may represent a promising approach to deliver several health services, as screening programs, with users who cannot utilize services in their locations. It provides a private and convenient space to get a mammogram, pap test, colon screening kit etc. Cancer Screening Devices market, several analytical tools such as Porters Five Forces Model, Value Chain Analysis, and SWOT Analysis are used. Databases (Medline, EMBASE, CINAHL, Web of Science, Cochrane Library, and Google Scholar) were searched in September 2017. Data was collected for operational aspects including the performance of exams, screening tests used, and outcomes of case-detection. The most current data from the National Health Interview Survey are provided on the utilization of cancer screening for men and women and on the adherence of men and women to multiple recommended screening tests. Lung cancer is the most common cancer affecting both men and women, accounting for an estimated 228,150 new cases in 2019. Particularly, 321 women were recruited to undergo breast cancer screening Studies describing screening for breast, cervical and colon cancer using MSUs were included. It was not possible to be certain about the effectiveness of mass media in improving screening uptake and the effectiveness of campaigns in improving cancer-related knowledge.

Our findings demonstrate that it may represent a promising approach to deliver several health services, guidelines for early cancer detection, data and trends in cancer screening rates as screening programs with users who cannot utilize services in their locations.

Keywords: Screening Programme; Analysis; Health Service.
NANOBOTS (NANOROBOTICS: MEDICINE OF THE FUTURE)

Udit Maheshwari *, Neha Kamalpuria, Nayany Sharma, Dinesh Kumar Mishra
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Abstract:
Nanorobotics is the technology of creating machines or robots at or close to the microscopic scale of a nanometer(10^-9 meters). More specifically, nanorobotics refers to the still largely hypothetical nanotechnology engineering discipline of designing and building nanorobots, devices ranging in size from 0.1 – 10 micrometers and constructed of nanoscale or molecular components. As no artificial non biological nanorobots have yet been created, they remain a hypothetical concept. The names nanobots, nanoids, nanites or nanomites have also been used to describe these hypothetical devices. Nanorobotics is an emerging, advanced and multidisciplinary field that calls for scientific and technical expertise of medical, pharmaceutical, bio-medical, engineering as well as other applied and basic scientists. Nanorobots differ from macro-world robots, specifically in their nano sized constructs. Nanorobots toolkit contains features like medicine cavity containing medicine, probes, and knives and chisels to remove blockages and plaque, microwave emitters and ultrasonic signal generators to destroy cancerous cells, two electrodes generating an electric current, heating the cell up until it dies, powerful lasers could burn away harmful material like arterial plaque. To cure skin diseases, a cream containing nanorobots may be used which remove the right amount of dead skin, remove excess oils, add missing oils, apply the right amounts of natural moisturizing compounds, and even achieve the elusive goal of ”deep pore cleaning. Other fields of applications are to clean the wounds, to break the kidney stones, to treat gout, for parasite removal, for cancer treatment, treatment of arteriosclerosis.

Keywords: Nanotechnology; Nanomedicines; Nanorobots.
A REVIEW ON: MEDICAL CODING
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Abstract:
Medical coding is done by coders who make up a crucial part of the medicinal claim. Medical coding is a transformation in which coders take medical reports from doctors, which may include a patient’s information about condition, the doctor’s diagnosis, a prescription, and whatever procedures the doctor or healthcare provider performed on the patient, and turn into a set of codes or we can say into universal medical alphanumeric codes -medical coding professionals help ensure the codes are applied correctly during the medical billing process which include abstracting the information from documentation, assigning the appropriate codes, and creating a claim to be paid by insurance carriers. Medical coding standardizes the language and presentation of all these elements so they can be more easily understood, tracked, and modified. Medical coding is used in all over world in which most countries use the international classification of disease {ICD}. In United States, there are 6 official HIPAA mandated code sets serving different needs. To become a medical coder we have to attend training program and college. There are 3 types of code we all have to know about. So, proper medical coding is important on many levels from ensuring accurate payment for physicians to creating a valid record of patient care history.

Keywords: Coder; Medical Claim; ICD
A REVIEW OF IMMUNOLOGICAL METHODS USED FOR THE MALIGNANCY
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Abstract
Innate and Acquired immune system cells plays a cardinal role in regulating the growth of cancer which is a major part of immunotherapy. Immunotherapy is manoeuvre for cancer treatment that helps the immune system to fight against such abnormal conditions. Several types of immunotherapy are used for its treatment which comprises of a variety of approaches; specifically the adaptive immune system (lymphocytes, T-cells and antibodies). The various immunotherapy techniques include checkpoint inhibitors, adoptive cell transfer, monoclonal antibodies and prevention and treatment vaccines.
This review seeks to enlighten the stakeholders about the treatment vaccines which work against cancer and helps boost up the immune's system response to cancer cells. These treatment vaccines actually boost the ability of immune system to recognize and destroy the antigens which are substances on the surface of cells that are not normally part of the body and thus cause the Genesis of cancerous cells.

Keywords: Immune System; Immunotherapy; Antibodies; Antigens; Cancerous Cells.
PRETOMANID: A NEW AVENUE FOR TREATMENT OF TUBERCULOSIS
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Abstract:
Pretomanid is anti-Tuberculosis drug, which is used for treatment of drug-resistant forms of tuberculosis (TB). Pretomanid is help in action against multidrug-resistant tuberculosis (MDR-TB) and extensively drug-resistant TB (XDR-TB). It is also called as PA-824 and the class is nitroimidazoles. Pretomanid made its action in about 6-9 months Clinical trials are taken place to prove effectiveness of Pretomanid, it is used with combination with bedaquiline and linezolid (BPal regimen), 107 patients with TB were given drug after six months 95(89%) were successes. Pretomanid have no specific mechanism of action but some study suggests Pretomanid could act on the mycolic acid biosynthesis pathway. Pretomanid need metabolic initiation by Mycobacterium for anti-bacterial activity. Oral administration of Pretomanid is most active in infected mice, these proves oral administration of Pretomanid is most useful. Pretomanid is very essential for treatment of different type of Tuberculosis. To combat the resistance, the drug made more drug-resistant and make shorter period of the treatment of multi-drug resistance and extreme-drug resistance.

Keywords: Pretomanid; Tuberculosis; (MDR-TB); (XDR-TB); Drug resistance.
A REVIEW: HEALTH ISSUES IN MIDDLE AGE
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Abstract:
In past 10 to 20 years the major part of the population over the age of 40(middle age) is facing common health problems. This problem is mainly due to the inadequate lifestyle like sedentary work or sedentary lifestyle, consumption of fast food etc. Clinicians and the public health community should increase the awareness about this health problem and their precautions. The common problems are aces and pain in joints, stress, hypertension and cholesterol, osteoporosis, diabetes. And they are in chronic condition after the age of 40(middle age). There are some secondary problems also like hearing disability, visual defects, vestibular functioning etc. To avoid this problems one should change its lifestyle like they should include yoga, exercise, improve their food habits and avoid sedentary work. There are some others problems like alcohol and tobacco dependency. It creates many problems after 40(middle age). To avoid this problem one should quit the alcohol and tobacco consumption. In these health problems the treatment is not more effective because it is symptomatic rather than the treatment the precautions are more effective. To avoid this problems one should start take precautions in their adulthood.

Keyword: Middle age; Cholesterol; Hypertension; Osteoporosis; Stress.
Abstract:
In past 10 to 15 years the rate of depression in adolescence increases very rapidly. Among 5 adults, 2 of them are diagnosed with severe depression. It is a worldwide problem and it happens due to various reasons such as anxiety, hormonal imbalance at the age of puberty, emotional disorder, behavioural disorder and increased risk of alcohol consumption. Adolescence depression leads to adverse effect such as thinking about suicide, decrease mental and physical health and problems create in their social life. Depression is serious, and if it is untreated then it leads to life threatening problems. For its treatment there are some therapy which can help to change their thoughts about life, way of thinking and behaviour. The therapies are such as psychotherapy, cognitive behavioural therapy (CBT) and interpersonal therapy. Psychotherapy provides opportunity to teens to explore their painful feelings which are troubling to them. it also teaches them to coping skills. Cognitive behavioural therapy (CBT) helps to change their negative patters of thinking, thoughts and behaviour. It is a talking therapy. It is mainly discover to treat depression. Interpersonal therapy helps to focuses on the development of healthier relationship at school and home. Therapy can help teens understand why they are depressed and learn how to cope with stressful situation.

Keywords: Adolescent Depression; Cognitive Behavioral Therapy (CBT); Psychotherapy; Interpersonal therapy.
A REVIEW ON - AVERTING SCARRING – BY CONVERTING MYOFIBROBLASTS TO FAT CELLS

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Abstract:
Wound healing in adult humans generally leads to scars with excess collagen and as absences of hair follicles and cutaneous fats. The biological pathway of wound healing and scarring is complex. Myofibroblast plays a crucial role in wound healing, inflammatory response and pathological organ remodeling. The reprogramming of myofibroblast has to be done in wound healing which required neogenic hair follicles, which triggered Bone Morphogenetic Protein (BMP) signaling and then activation of fat cells (adipocytes) transcription factors expressed during development. Adipocytes formed from humans Keloid fibroblast either when treated with BMP or when placed with human hair follicles in-vitro. Thus myofibroblast was identified as plastic cell type that may be manipulated to treat scars in humans, this find a window of opportunity afterwounding to influence regeneration rather than scarring of tissue by activating embryonic pathways and converting myofibroblasts to adipocytes.

Keywords: Scarring; Myofibroblast; Adipocytes; Averting; Cutaneous fat; Neogenic; Skin; Follicles
AN AWARENESS SURVEY ON THE DRUG SAFETY REPORTING AMONG THE HEALTH CARE PROFESSIONALS IN MALWA REGION INDORE (MADHYA PRADESH)

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Abstract:
An awareness survey on the drug safety reporting (Pharmacovigilance) among the health care professionals in malwa region Indore (Madhya Pradesh). A questionnaire which was suitable for assessing the basic Knowledge, Attitude and the Practice (KAP) of drug Safety was designed and distributed among 100 Health Care professional of the Malwa Region Indore (Madhya Pradesh) Among the 50 doctor 30 pharmacists and 20 nurses, responded. The filled KAP questionnaires were analyzed in question wise and their percentage value was calculated by using Microsoft excel spread sheet and online statistical software. A majority of the respondents suggested regular training sessions on a priority basis for the success of the pharmacovigilance program and for the better clinical management of the patients in general.

Keywords: Adverse drug reaction; health care professional; Malwa Region Indore (Madhya Pradesh)
DESIGNING, DEVELOPMENT AND OPTIMIZATION OF GASTRORETENTIVE MUCOADHESIVE MICROSPHERES OF VENLAFAXINE HYDROCHLORIDE USING SPRAY DRYER

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Abstract:
Venlafaxine hydrochloride is antidepressants comes under the category of serotonin and noradrenaline reuptake inhibitors, which prevents neuronal serotonin and noradrenaline reuptake and weak prevent of dopamine reuptake. Gastrointestinal tract absorption of venlafaxine hydrochloride is poor due to low aqueous solubility. The drug is incompletely absorbed in GIT which is followed by poor bioavailability. The current research work is to formulate Gastroretentive mucoadhesive microspheres of venlafaxine hydrochloride due to which the drug will remain in acidic pH followed by enhanced absorption in stomach and increase the bioavailability. Venlafaxine hydrochloride mucoadhesive microspheres were prepared using HPMC K4M as carrier polymer and eudragit L as mucoadhesive polymer and were prepared using spray drying technique. Optimization of polymer and drug using box-behnken design is done. The in-vitro evaluation of mucoadhesive property of venlafaxine hydrochloride microspheres was done on goat intestinal mucosa which showed strong mucoadhesion of 84% for extended period of time till 8 hours. The in-vitro drug release studies of microspheres were performed in 0.1 N HCl which showed extended release up to 8 hours. It is concluded from the above studies that the current formulation has increased gastric residence time and prolonged release for better absorption of the drug, thus the formulation will have better therapeutic and increased bioavailability.

Keyword: Venlafaxine hydrochloride; Mucoadhesive microsphere; Gastroretention; Spray drying.
EFFECT OF ETHANOLIC EXTRACTS OF TRIBULUS TERRESTRIS, PHYLLANTHUS NIRURI AND COMBINATION ON CALCIUM OXALATE UROLITHIASIS IN RATS

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Abstract:
Urolithiasis is the medical term used to describe stones that occur. Other commonly used terms include stone disease of urinary tract and nephrolithiasis. Urinary stone disease has influenced human since ancient time and can survive throughout a patient’s life, with severe medical sequel. Moreover, in association with economic development, the incidence of urolithiasis has increased in western and Indian societies over the past five decades. Most stone in the urinary system is derived from a common urine component, e.g. calcium oxalate, which represents up to 80% of stone analyzed. Stone may form at any level in the urinary tract, but most arise in kidney. Urolithiasis is a frequent clinical problem. Men are affected more than women are and at the beginning the peak age between 20 and 30 years. Calcium oxalate is one of the major components of urinary tract deposits. Crystallisation of calcium oxalate is of particular interest not only from the theoretical point of view but also due to biological significance. It is not fully understood the exact mechanism of the initiating calcium oxalate stone formation. Many of the inborn metabolism errors, such as gout, cystinuria, and primary hyperoxaluria, provide good example of inherited disease characterized by excessive stone forming substance production and excretion. In the present study the effect of calcium oxalate urolithiasis urinary risk factor of ethanolic extract of Tribulus terrestris, Phyllanthus niruri and their combination have been studied in albino rats. From this study it is concluded that the possible effect of the ethanolic extract of Tribulus terrestris, Phyllanthus niruri and their combination can be assigned to be positive effect on the main urolithiasis risk factors.

Keywords: Tribulus terrestris; Phyllanthus nirur; Urolithiasis; Ethylene glycol (EG).
MALE APHRODISIC AND FEMALE ANTIFERTILITY SCREENING OF PLANTS
MUCUNA PRURITA, MESUA FERREA, PUNICA GRANATUM ON RATS
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Abstract:
Evaluation of Mucuna prurita, Mesua ferrea, Punica granatum extracts for female infertile and as an aphrodisiac in rats. To resolve the problem of population explosion, these plants are used traditionally for anti-fertility activity in females and as aphrodisiac in males. Wistar strain male albino rats, 200-300 gm were used and procured from animal house. The animals were fed with rodent pellet diet and water ad libitum. Reference standard drug Ethinyl Estradiol 0.02 mg kg⁻¹, and suspension of sildenafil citrate 5 mg/kg, p.o. was given 1 hour preceding the beginning of the investigation. All the data are expressed as mean ± S.E. Statistical analysis was done by Student’s t-test and one way ANOVA. Combined extract of these plants showed significant increase in uterine weight in a dose-dependent manner compared to vehicle control. The estrogenic effect of Combined extract with reference standard Ethinyl estradiol (0.02 mg kg⁻¹, p.o., the ethanolic combined extract at 200 mg kg⁻¹ offered more potent estrogenic activity than the reference standard. The extract significantly increased the weights of uteri and showed synergistic effect as increase in the height of luminal epithelium and loose and edematous stroma with stimulated uterine glands. It concluded that Herbal Plants Mucuna prurita, Mesua ferrea, Punica granatum have Synergistic Effect on Reproductive Functions in male and female both.

Keywords: Investigation; Sildenafil Citrate; Ethinyl Estradiol; Synergistic.
ARTIFICIAL INTELLIGENCE

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Abstract:
Artificial Intelligence is the branch of Computer Science that deals with analytical methods, algorithms, pattern matching and deep learning to reach any conclusion without any human interference. By the help of AI, scientists can solve complex problems which were nearly impossible to solve. It is based on human brain’s neural network. It utilizes various layers of non linear processing units to understand the data. It is the most promising technique which can be used in the field of medicine like Development of drug, Monitoring of patients, Preparation of customized patient treatment plans, etc. In genomics, AI can withdraw data from peer reviewed literature in order to continuously grow the base of its knowledge. It has an ability of improving the care course of chronic disease patients and suggests accurate therapy for complex diseases. AI is ideal for places with reduced or scarcely populated areas. It can restlessly suggest consultations when it determines that the patient’s risk of developing a particular diabetic complication requires interference. As the systems become more and more validated with the time, they will be given added responsibilities. The potential for increased AI usage in medicine is not just in a reduction of manual tasks and the freeing up of physician’s time, increasing efficiency and productivity - it also presents the opportunity for us to move towards more ‘precision medicine’. It is unlikely that machines will replace or eradicate the need for human doctors any time soon, those already in or considering a medical profession should be willing to adapt, learn and grow alongside technological advancements.

Keywords: Artificial Intelligence; genomics; precision medicine; chronic disease.
INTELLECTUAL PROPERTY RIGHT
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Abstract:
IPR have been termed as ideas, discovery, and innovative things which has based on the peoples creation of minds. IPR gives the many exclusive rights to the inventor of that particular property. Many agreements also involved in the field of IPR like GATT, TRIPS & WTO these agreements plays a barrier role in Intellectual Property Rights. IPR provides many benefits to the creators. IPR is a vast thing IPR is several type of intellectual property for the protection of Patent, Copyright, and Trademarks etc. Intellectual Property Rights plays an important in the field of pharmaceutical science, the role of IPRs in providing incentive to discover, develop and market the new drugs and the IPR drawns on the R&D expenditure and its allocation across the nation or organization. In this presentation I am providing the information about the Intellectual Property Rights.

Keywords: IPR; GATT; WTO; Trademarks;
A REVIEW: FLOATING DRUG DELIVERY SYSTEM OF MICROSPHERE
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Abstract:
The concept of floating drug delivery system is described in the 1968. FDDS of microsphere is the novel drug delivery system. Floating drug delivery system of microsphere have a bulk density less than gastric fluids and so remain buoyant in the stomach without affecting gastric emptying rate for a prolonged period of time. Several approaches have been used to retain the dosage form in stomach as a way of enhancing the gastric residence time which includes floatation systems, high-density systems, mucoadhesive systems or swellable systems and superporous hydrogel are novel drug delivery system to maximize efficiency of drug. The attention behind floating microspheres is due to the uniformity of these multiple-unit dosage forms in the stomach, which results in more reproducible drug absorption and reduced risk of local irritation. These systems have more benefits over the single unit dosage forms. Microspheres are free flowing powders made up of proteins or synthetic polymers which are biodegradable in nature and ideally having a particle size less than 200 μm. Microspheres have high loading capacity and many polymers have been used such as albumin, gelatin, starch, polymethacrylate, polyacrylamine, and polyalkylcyanoacrylate. The gastroretentive dosage form resides in the stomach for longer period of time than predictable dosage forms. These systems provide tremendous opportunities in the design of new controlled and delayed release oral formulations, thus extending of futuristic pharmaceutical development.

Keywords: Floating Drug Delivery System; gastro-retention; Floating microsphere polymers.
EVALUATION OF ANTI-ULCER ACTIVITY OF ETHANOLIC EXTRACT OF NYMPHAEA ALBA LINN FLOWER IN EXPERIMENTAL RATS
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Abstract:
In the present study Anti ulcer activity of Ethanolic Extract of flower of Nymphaea alba Linn were investigated. The Anti ulcer activity of Ethanolic Extract of flower of Nymphaea alba were evaluated by Pylorus ligation & Ethanol induced ulcer model in experimental rats. In both models the common parameter determined was ulcer index. The Ethanolic Extract of Nymphaea alba (200 & 400 mg/kg) treat the Ulcer and produced significant inhibition of the gastric lesions induced by Pylorus ligation induced ulcer & Ethanol induced gastric ulcer. Preliminary Phytochemical analysis of Ethanolic Extract of Nymphaea alba revealed that the presence of various phytoconstituents Alkaloids, Carbohydrates (Polysaccharides), Glycosides, Steroids, Flavonoids and Tannin & Phenolic compound. The extract (200 mg/kg & 400 mg/kg) showed significant reduction in gastric volume, free acidity and ulcer index as compared to control. This present study indicates that Nymphaea alba Linn flower extract have potential Anti ulcer activity in the both models. These results may further suggest that Ethanolic extract was found to possess Antiulcerogenic as well as ulcer healing properties, which might be due to its Anti-secretary activity.

Keywords: Nymphaea alba Linn; Pylorus ligation; Ethanol induced ulcer model; ulcer index.
RECENT ADVANCEMENT IN PHARMACEUTICALS SCIENCE AND RESEARCH
IMPLANTABLE DRUG DELIVERY SYSTEM: A FUTURE PHARMACEUTICAL
TECHNOLOGY
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Abstract:
Advancement in technologies, many forms of drug administration and therapies were introduced but providing sustainable release of therapeutic drug concentration and steady release at specific site was major challenge. Using oral administered drug had some disadvantages like high plasma concentration which will cause toxicity and drug resistance. So next alternative was using parental administration, but in this system time period of action was too short. To overcome with this problems controlled drug delivery system was introduced. Implantable drug delivery system is such an example. To study advantages and future aspects of this system is main focus of this review poster. Implantable drug delivery system is controlled drug released system which continuously release drug directly into blood stream as well as make patient free from being hospitalised to receive intravenous infusion. If we see the future prospective then some advancement is needed to solve the problems of biocompatible substance and biodegradable substances. Another prospective is that in future peptides and protein involving drug would be given in this manner which are highly unstable when taken orally. And as expected advancement in implants will reduce the price and make treatment less expensive and increase the patient compliance.

Keywords: Implantable; Blood Stream; Intravenous Infusion; Biocompatible Substance.
EVALUATION OF ANTIBACTERIAL AND ANTIFUNGAL ACTIVITY OF ETHANOLIC EXTRACT OF MADHUCA LONGIFOLIA FLOWERS

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Abstract:
Madhucalongifolia (Family: Sapotaceae), is an Evergreen tropical tree found in the Nepal, SriLanka & India. The common name of Madhucalongifolia is Mahwa or Mahua or butternutrious tree and it has been utilized for the treatment of heart disease, diabetes, infections, wounds, rheumatism & preparations of liquor. The aim of the present study is to evaluate antifungal and antimicrobial activities of Mahuaflowers. The flowers were washed with water and dried in shade. Flowers were converted into powder and extracted with ethanol using soxhlet apparatus. The extracts were concentrated under reduced pressure using rotavapour. The test solution of ethanolic extract of Mahwa flowers was prepared in 5 successive dilutions namely 50μg/ml, 100μg/ml, 150μg/ml, 200μg/ml, and 250μg/ml.
Ethanolic extracts of Mahua flowers were screened for antimicrobial activities against Staphylococcus aureus, Bacillus subtilis, Escherichia coli, Pseudomonas aeruginosa, at dose level ranging from 50 μg/ml to 250 μg/ml Which show the zone of inhibition (min10 & max18mm) comparable to standard antibiotic (ciprofloxacin) and also effectively inhibited the growth of two fungi (Aspergillusoryzae and Aspergillusniger) comparable to standard antifungal agent Clatrimazole. For A. oryzae 250 μg/ml concentration produced equal inhibition as that of standard. The present study indicates that mahwa flower have revealed significant antimicrobial activities. However, herbal remedies often do not produce any side effects. Therefore, alternative medicine becomes popular remedy to various types of ailments.

Keywords: Escherichia coli; Madhucalongifolia; Aspergillusniger; Bacillus subtilis.
TECHNIQUES FOR FORMULATION OF NANOEMULSION DRUG DELIVERY SYSTEM
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Abstract:
Nanoemulsion drug delivery systems are advanced modes for delivering and improving the bioavailability of hydrophobic drugs and the drug which have high first pass metabolism. The nanoemulsion can be prepared by both high energy and low energy methods. High energy method includes high-pressure homogenization, micro fluidization, and ultrasonication whereas low energy methods include the phase inversion emulsification method and the self-nanoemulsification method. Low energy methods should be preferred over high energy methods as these methods require less energy, so are more efficient and do not require any sophisticated instruments. However, high energy methods are more favourable for food grade emulsion as they require lower quantities of surfactant than low energy methods. Techniques for formulation of nanoemulsion drug delivery system are overlapping in nature, especially in the case of low energy methods. In this, we have classified different methods for formulation of nanoemulsion systems based on energy requirements, nature of phase inversion, and self-emulsification.

Keywords: nanoemulsion; drug delivery; high energy method; low energy method; phase inversion methods.
HERBAL NANOSTRUCTURES TO IMPROVE THE BIOAVAILIBILITY OF HERBAL MEDICINES
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Abstract:
Herbal medicines have been used since ancient times all over the world. They have wide acceptability due to therapeutic effect and minimum side effects as compared to modern system of medicines. The herbal drugs are mostly in dried powder form or in extract form prepared by using different solvent systems. But the herbal formulations cannot be targeted to specific tissue in case of severe diseases. The bioavailability of herbal medicines which are consumed orally is very low due to adverse pH, enzymatic degradation and poor gut absorption. Nanotechnology is spreading fast and is able is deliver the drugs very specifically and with high safety. The problems associated with conventional drug delivery can be improved by designing and using Nanostructures such as Phytosomes, Niosomes, Nanosuspension, Nanocrystals, Nanodispersion, Nano liposomes. The main aim is to provide sustained drug release, site-specific action, and improved patient’s compliance. They can be used for targeted drug delivery in the body which improves their safety, efficacy and reduces the frequency of doses. To avoid increased and repeated administration of a herbal drug. Nanocarriers containing herbal drugs can carry the optimal amount of the drug to their site of action avoiding different obstructions such as low pH in the stomach, metabolism by liver so that the drug can circulate into the blood for a longer period of time. There are numerous Phytoconstituents which can be used to cure chronic diseases but just there is a need to find out the scientific path to deliver the active constituents in a specific way to increase patient compliance and reduce the need for repeated administration. Thus to develop a novel phytochemical for a therapeutic purpose is a real challenge.

Keywords: Herbal Nanostructures; Bioavailability; Nanotechnology.
A REVIEW ON: THUNBERGIA GRANDIFLORA
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Abstract:
Acanthaceae is a taxon of dicotyledonous flowering plants, containing approximately 250 genera and nearly 4000 species among them genus Thunbergia, with more than 100 species. Thunbergia grandiflora Roxb is a long-lived (perennial), vigorous, climbing plant. Thunbergia generally was reported to contain variety of compounds e.g. flavonoids, iridoid glycosides, phenolic constituents. Chanawirat and Charumanee et al suggested that the trumpet vine Thunbergia laurifolia Linn. (TL) is a Thai medicinal plant known for its anti-mutagenic, anti-inflammatory and antipyretic properties. Sunyapridakul, Tejasen, Thongsaard and Ussanawarong reported that the aqueous extract of fresh leaves, dried leaves, dried root, and bark of TL has been used in detoxification and first-aid treatment for poisoning from insecticide, ethyl alcohol, arsenic and strychnine. TL leaf extract was shown to be an antidote against the insecticide parathion. Pramyothin and his researchers reported that the hepatoprotective effect of aqueous extract from TL leaves. Srida et al studied and suggested that the phenolic compounds in TL leaf aqueous extracts could function as superior anti-oxidants and as well as a chelating agent. The studies were examined the hypoglycemic activity of methanol and chloroform extracts of the whole-parts of T.alata T. grandiflora find use as broad-spectrum antimicrobial activity. T.fragrans showed anti-oxidant and antipyretic activity. Genus Thunbergia Plants were found to be the new sources of phyto constituents with many biochemical and pharmacological activities. Thus, the chosen traditional medicinal plants might find use in the field of pharmacology, phytochemistry, ethnobotony and other biological activity studies for drug discovery.

Keywords: Thunbergia Grandiflora; Acanthaceae; Phytochemistry; Ethnobotony.
A REVIEW ON AN ANTIBACTERIAL DRUG DISCOVERY: MICROBE DERIVED NATURAL PRODUCTS FROM COLLECTION TO THE CLINIC

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Abstract:
The pharmaceutical trade has traditionally relied on nature to provide compounds for antibacterial drug discovery. In recent years, many pharmaceutical firms have scaled back their efforts in natural marketing research. However, the screening of natural product for antibacterial drug activity continues to provide wonderful sources of biologically and with chemicals informative leads for new drugs. Genetic approaches to biodiversity and discovery of comparatively untapped sources of natural product are increasing the ability to search out novel, potent and extremely selective antibacterial structures. Advances in purification, dereplication and structure elucidation, combined with the ability to with chemicals or biologically derivatise hits, aim to form the timeline for natural product-derived drug discovery similar or shorter than that expected for tiny synthetic molecules. This review addresses the strengths and shortcomings of technologies centered on microbe-derived natural product for antibacterial discovery and stress the necessity for commitment to those approaches so as to realize the goal of delivering safe, efficacious and high-quality medicines within the long run.

This review highlights a number of the new antibacterial compounds in discovery and development that are derived from microbial natural product. A number of the novel technologies applied to natural product discovery are summarized including: diversity of natural product (sourcing, genetic and metabolic engineering); cell-based screening for natural product antibiotics; expression and production techniques to provide novel natural product leads; extraction, purification, and structural characterization technologies; and technologies to enhance chemical modification of natural product leads.

Keywords: antibacterial drug; extraction; purification; and structural characterization technologies.
Abstract:
Clinical trials are conducted to examine clinical questions and the therapeutic activities of the new drug or the drug which is already in the market. It is important to design clinical trials appropriately in proper stages to prevent the loss of lives and resources. There are different types of trials conducted throughout the whole world. There are several phases of clinical trials. This article summarizes fundamental points and the phases of clinical trials how they are conducted and what happens in every single phases of the trial. In addition, it focuses on the drug discovery and the phase where the drug is live in the market, a useful method to discover the pharmacological and pharmacotherapeutic activities of the drug. Once the drug introduced into the market then only the pharmacovigilance comes into the picture. Pharmacovigilance is the department which troubleshoots the drug which is already in the market and keeps the count of adverse effects and adverse drug interactions. These counts help in the development and modification of the drugs.

Keywords: Clinical Trials; Phases of clinical trials; Research and development of new drug; pharmacovigilance.
Abstract:
Preformulation study is the group of study that mainly target focus on the physicochemical property of new drug molecule that could direct affects the drug performance. A stepwise preformulation study of parenteral formulation giving due to consideration to all contributing factor that can help limit the particulate matter within the specified limit. Careful preformulation study of parenteral formulation provides safe efficacious, stable and elegant parenteral formulation through kinetic rate profile and compatibility with other excipient. The critical factor in preformulation study of parenteral including water solubility, chemical stability and thermal behaviour in aqueous media all 3 critical factor depending on the ph of formulation, temperature, UV light and the presence of isotonising agent. In which the ph is most critical factor ph is the key factor in the preformulation study of parenteral. If we formulate any parenteral formulation more than 8 ph mainly for peptide parenteral formulation the product ph set away from the isoelectric point. Thermal stability, light stability, bulk drug preparation, polymorph existence pka or pi is the major point of preformulation study of parenteral. Thermal stability - provide knowledge that the drug can be degrade at high temperature if we give temperature from the standard limit of any drug.

Keywords: Preformulation study; Parenteral formulation; Thermal stability; Standard limit.
ETOFYLLINE-LOADED CROSSLINKED NANOPARTICLES OF MANNOSEANCHORED N,N,N-TRIMETHYL CHITOSAN FOR PULMONARY ADMINISTRATION

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Abstract:
The pulmonary route of administration is a non-invasive, rapid, and effective approach to deliver therapeutic agents both locally and systemically. Inhaled drug therapy is generally used locally to treat airway disease, such as asthma, bronchitis, cystic fibrosis (CF), and chronic obstructive pulmonary disease (COPD). On the other hand, inhalation also offers a great potential for systemic delivery because the lungs have a huge surface area available for absorption. Here we report the formulation of mucoadhesive nanoparticles of etofylline-loaded sodium tripolyphosphate cross-linked nanoparticles of mannose-anchored N, N, N-trimethyl chitosan (Mn-TMC-TPP NPs). Initially, the extensive characterization was done to confirm the synthesis of TMC and Mn-TMC through 1H NMR, FTIR, DSC, XRD analysis, and molecular weight determination. The prepared nanoformulations were characterized for particle size, ζ-potential, loading and entrapment efficiency, drug diffusion and permeation studies, stability estimation, and lung histopathology. The in vitro cascade impaction studies and in vivo lung distribution studies Wistar rat model were performed in order to determine the comparative efficacy of etofylline-loaded TMC-TPP and Mn TMC-TPP NPs. The methylation of chitosan and mannosylation of methylated chitosan was confirmed by 1H NMR (δ = 3.1 ppm) and FTIR analysis (-CH stretch at 1485 cm−1 ). Further, both the prepared nanoformulations were found to be in nanometric size range, anionic ζ-potential, high loading and entrapment efficiency, robust, stable, and safe on pulmonary administration. The cascade impaction analysis confirmed the alveolar deposition of the prepared NPs. The in vivo lung distribution studies in homogenized rat lungs showed the high bioavailability of etofylline, proving its promising potential in the pulmonary drug therapy. The developed nanocarriers, TMC-TPP NPs and Mn-TMC-TPP NPs were found to be robust, stable on long-term storage, and safe for pulmonary administration. The experimental findings presented herein fulfill all the objectives set before the study. The developed nanoparticulate formulation could reach the shelf of commercial market, provided it should further be investigated extensively for clinical investigations.

Keywords: Non-invasive; Nanocarriers; Wistar rat model; nanoparticulate formulation.
ASSESSMENT OF HYPOGLYSEMIC ACTIVITY OF ETHANOLIC EXTRACT OF PIPER LONGUM LEAVES IN RATS
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Abstract:
Diabetes Mellitus is a worldwide epidemic. The dominance of the disease is predicted to smash around three hundred million in the year 2018 which is equivalent to near about 8.7% of the world people. This study was carried out with interest to found out a new organic molecule which has potent to cure diabetes and produce less toxic effect. Piper Longum leaves were collected and its ethanolic extract has been extracted out. This ethanolic extract has been analyzed for phyto-chemical screening, and then Hypoglycemic activity of this extract has been evaluated by examine it on Rats. The obtained results shows Piper Longum extract was found to have marked antidiabetic activity adjacent to Alloxan provoke diabetes. The result was compared with standard drug, we obtained the significance values which was p<0.05, 0.01 and 0.001. On the basis of result we can say that using of this plant in the treatment of Diabetes may be better with the comparison of marketed allopathic drug because the herbal medicine do not produce any type of adverse effect. We have done preclinical studies on this plant and we found that Piper Longum has better possibilities to cure diabetes. This plant may be better for further study in the clinical trial.

Keywords: Hyperglycemic; Diabetes Mellitus; Piper Longum; Phytochemical Screening.
DENDRIMERS (A NEW GENERATION CARRIER): TYPES, SYNTHESIS, PROPERTIES AND APPLICATIONS
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Abstract:
This review gives concise information about the dendrimers, properties, types, synthesis and application in drug delivery, diagnosis and therapy. Dendrimer are highly branched molecule having a well defined size, shape, molecular weight, and monodispersity as compared to linear polymer. Dendrimer have tree like shape consist of central core, branches and terminal group. The bioactive agents may either be encapsulated into the interior of the dendrimers or they may be chemically attached or physically adsorbed onto the Dendrimer surface. Dendrimers are unimolecular micelle in nature and due to this enhances the solubility of poorly soluble drugs. These polymers have also successfully proved themselves as useful additives in different routes of drug administration because they can render drugs of greater water solubility, bioavailability and biocompatibility. Dendrimers possess empty internal cavities and open conformations, which make it possible to encapsulate hydrophobic drug molecules. In addition, they have a much higher surface functional group density when compared with conventional macromolecules.

Keywords: Dendrimers; Targeted drug delivery; PAMAM; PPI; Synthesis; Divergent; Convergent; Application.
FORMULATION AND EVALUATION OF BI-LAYERED TABLETS OF DIVALPROEX SODIUM
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Abstract:
Divalproex sodium is considered as the most important antiepileptic drug and widely used for treatment of epilepsy and bi-polar disorders and prophylaxis of migraine. The present work has been done to formulate bi-layered tablet of Divalproex sodium containing immediate release layer and sustained release layer. The FTIR study revealed that there was no interaction between drug and polymer and combination can be safely prepared. Both layers were prepared by wet granulation technique as poor flow property exhibited by pure drug. The immediate release layer was formulated by using sodium starch glycolate, croscarmellose sodium as super disintegrants and evaluated for physical parameters, disintegration time and in vitro drug release. The optimized immediate release layer (IF6) with highest in vitro release of 98.11 was selected for bi-layered tablet formulation. HPMC K4M and HPMC K100M polymer used to retard the drug release from sustained release layer in different proportion and combination and evaluated for physical parameter along with in vitro drug release studies. The optimized sustained release layer (SF8) which extends the Divalproex sodium release more than 18 hrs was selected. In vitro drug release studies were performed using USP type II apparatus (paddle method) in 900 ml of phosphate buffer pH 6.8 at 100 rpm. Finally Bi-layered tablets were prepared by double compression of selected sustained release layer and immediate release layer of Divalproex sodium. The tablets were evaluated for hardness, thickness, weight variation, friability, drug content uniformity and in vitro drug release. All the physical Parameters were in acceptable limit of pharmacopeial specification. The stability studies, shown the bi-layer tablet was stable at 400C / 75% RH for a period of 3 months.

Keywords: Bi-Layered Tablets; Epilepsy; Wet Granulation; Divalproex Sodium; Immediate Release; Sustained Release.
RECENT ADVANCEMENT OF BIOTECHNOLOGY: 3D VISUALIZATION AND AUGMENTED REALITY FOR SURGERY

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Abstract:
Surgery is cruel on a human body, and medical breakthroughs that create the surgical and healing method more competent is always welcomed. Biotechnology has now made it feasible for doctors to sight an entire 3D image of the inside of a patient’s body through the use of MRI and CT scans. This allows each organ to be accurately projected, so that the surgeon can make small, targeted incisions to reduce bodily trauma to the patient. In addition, augmented reality would permit pertinent information to be displayed directly overlaid over the appropriate body parts.

Keywords: Surgery; 3D image; Biotechnology; Trauma
PHARMACOLOGY AND PHOTOCHEMISTRY OF ALANGIUM SALVIIFOLIUM: A REVIEW
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Abstract
Alangium salviifolium (AS), a small deciduous tree has been identified as an important resource in traditional medicine due to its medicinal properties. The leaves contain considerable amounts of alkaloids, flavonoids, glycosides and polyphenolic compounds. Alangium species used as natural medicine, prescribed by Ayurveda, Sidda medical practitioners for various diseases due to its wide range of biological profile. Nowadays in the global scenario is supporting the development of modern drugs from less toxic plant products with proven medicinal properties. They are also used in the pharmaceutical preparations. The plant Alangium salvifolium is a small tree or shrub, native to South India and Ceylon. It belongs to the family Alangiaceae. All the parts Root, bark, leaves, seeds and fruits possessed significant therapeutic value. Biologically active ingredients of alangium have diverse applications. These compounds belong to the natural products called flavinoids, glycosides, alkaloids, saponins. It is considered as a valuable source of natural products for development of medicines against various diseases. This review gives a bird’s eye view mainly on distribution, phytochemistry, pharmacological activities of Alangium salvifolium plant extracts.

Keywords: Alangium salviifolium (AS); flavonoids, glycosides; Phytochemistry; Pharmacological.
IMMUNO DEFICIENCY AND POLIOMYELITIS VIRUSES VACCINATION (IPVV)

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Abstract:
Acquired immuno deficiency syndrome is caused by HIV virus which weakens human immune system and makes immune system week. The virus can be transmitted through contact with infected blood, semen or vaginal fluids. No cures exist for AIDS, but strict adherence to antiretroviral regimens (ARVs) can dramatically slow the disease’s progress as well as prevent secondary infections and complications. Polio is transmitted through contaminated water or food, or contact with an infected person. Many people who are infected with the poliovirus don't become sick and have no symptoms. However, those who do become ill develop paralysis, which can sometimes be fatal. Treatment includes bed rest, pain relievers and portable ventilator. The cure of polio is available as in vaccine form but in the same case the treatment of HIV is not perfectly available having many complications as in the pathogenesis of HIV virus. Virus attached to CXCR5 co receptor which acts as very important binder for the transfer of genetic material from viron to the cell nucleus. In a recent studies at has been studied some people in Africa had born immunity for HIV virus they develop a special non binding capability of HIV virus So developing a vaccine having GP120 antagonist which will inhibit e binding of HIV and combining this vaccination with polio vaccine will help the easy spread of the vaccine because in India polio vaccine is the most spreaded vaccine.

Keywords: AIDS; HIV; CXCR5; antiretroviral regims; antibodies; GP120.
STUDY OF EFFECT OF SOME FLAVONOIDS ON DIABETES INDUCED OXIDATIVE-STRESS
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Abstract:
Diabetes Mellitus (DM) is a multifarious metabolic disorder characterized by hyperglycemia. Chronic hyperglycemia produces severe consequences on various organs of the body. Long term DM leads to diabetic neuropathy (CNS), Nephropathy (Kidney), Retinopathy (Eye), cataract formation (Eye lens) and Ischemia (Heart). Excessive glucose toxicity leads to formation reactive oxygen species (ROS) through formation and accumulation sorbitol. The aldose reductase (AR) enzyme is a rate limiting step in the polyol pathway that is responsible for ROS formation. ROS have been implicated in many human diseases such as inflammation, diabetes, cardiovascular disorders. Flavonoids reported to have its therapeutic benefit through its antioxidant property and aldose reductase inhibitory activity. Thus, the present study was aimed to investigate the structure-activity relationship of flavonoidal compounds for their aldose reductase inhibitory activity. The quantitative structure-activity relationship reveals that isoflavones having third position aromatic substitution in the benzopyran-4-one nuclease found detrimental for activity. The flavones having aromatic ring substitution were found to be fruitful for aldose reductase inhibition. The QSAR model developed for AR inhibition was useful in predicting and designing of newer benzopyranones.

Keywords: QSAR; Diabetes Mellitus; Benzopyranones; Flavonoidal; Hyperglycemia.
HEPATOTOXICITY AND HEPATOPROTECTIVE AGENTS
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Abstract:
The maintenance of healthy liver is vital to overall health of the human beings. Since the liver is involved in almost all biochemical processes and there are many different diseases that will affect it. The liver is often abused by environmental toxins, which are eating habits, alcohol and overdose of certain drugs which can damage and weaken the liver and eventually lead to many diseases. Medical herbs are significant source of hepatoprotective drugs. Mono and poly herbal preparations have been used in many various liver disorders. According to none estimate, more than 700 mono and poly herbal preparations in the form of decoction, tincture, tablets and capsules from more than plants are in clinical use. From the literature review near about 178 medicinal plants are reported to posses a hepatoprotective activity. A drug having beneficial effect on the liver is known as hepatoprotective drug. On the other hand, drugs having toxic effect on the liver are better known as hepatoprotective drugs. The most commonly used parameters to assess the hepatoprotective activity are morphological e.g. liver weight and volume, biochemical estimation, such as measurement of transaminase activity, serum bilirubin, total serum proteins, alkaline phosphate, SGPT, SCOT, albumin, globulin, and prothrombin time, functional parameters, pantobarbitone and hexobarbitone sleeping time and finally histopathological study regarding presence of necrosis, fatty degeneration and cirrhosis. In this review we will briefly discuss hepatotoxicity and hepatoprotective agents.

Keywords: Prothrombin; Hepatotoxicity and Hepatoprotective Agents.
A REVIEW: COW’S URINE AS IMPORTANT REMEDY IN MANAGEMENT OF DISEASES
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Abstract:
Cow’s urine is important part of Indian tradition. It is not only holy but also has various important medicinal uses. According to Ayurveda (Sushruta Samhita, Ashtanga Sangrah and Bhav Prakash Nighantu) describe cow’s urine as an effective medicinal substance/secretion of animal origin with innumerable therapeutic uses. Urine is one of the products of a cow with many benefits and without toxicity. Cow’s urine contains nitrogen, sulphur, phosphate, sodium, manganese, iron, silicon, chlorine, magnesium, maleic, citric, tartaric and calcium salts, vitamin A, B, C, D, E, minerals, lactose, enzymes, creatinine, hormones and gold acids. Hence consumption of cow’s urine is useful to maintain the balance of these substances and cures incurable diseases. Various studies have found good: antimicrobial activity of cow’s urine comparable with standard drugs such as ofloxacin, cefpodoxime, and gentamycin, against a vast number of pathogenic bacteria, more so against Gram-positive than negative bacteria. Interestingly antimicrobial activity has also been found against some resistant strains such as multidrug-resistant Escherichia coli and Klebsiella pneumoniae. Antimicrobial action is enhanced still further by it being an immune-enhancer and bioenhancer of some antibiotic drugs. Antifungal activity was comparable to amphotericin B. Cow’s urine also has anthelmintic and antineoplastic action. Cow’s urine shows Wound healing activity in Diabetic patient because of its property of enhancing granulation tissue formation. Cow’s urine showed significant effect against renal calculi and restoration of compromised renal function Cow’s urine has, in addition, antioxidant properties, and it can prevent the damage to DNA caused by the environmental stress. In the management of infectious diseases, Cow’s urine can be used alone or as an adjunctive to prevent the development of resistance and enhance the effect of standard antibiotics. Cow’s urine has antioxidant properties and is a free radical and thus it neutralizes the oxidative stress. Cow’s urine helps by repairing the damaged DNA and is therefore, effective as anti-cancer therapy. On analyzing different result on Cow’s urine in various research article it concludes that cow urine and its concoction is really multidimensional drug. Ayurveda already told that fresh cow urine of indigenous cow is the best.

Keywords: Cows’ Urine; Ayurveda; Antimicrobial; Immune-Enhancer; Anthelmintic; Antibiotic.
DEVELOPMENT AND EVALUATION OF NANOEMULSION OF PRIMAQUINE FOR PREVENTION OF RELAPSING MALARIA
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Abstract:
Malaria relapsing refers to the reactivation of the infection via Relapse is when symptoms reappear after the parasites have been eliminated from blood but persist as dormant hypnozoites in liver cells. Malaria relapse commonly occurs between 8–24 weeks and is commonly seen with P. Vivax and P. Ovale infections. Primaquine (PQ) is one of the most widely used antimalarial and is the only available drug till date to combat relapsing form of malaria especially in case of Plasmodium Vivax and Plasmodium Ovale. Primaquine acts specifically on the pre-erythrocytic schizonts which are concentrated predominantly in the liver and causes relapse after multiplication but one of the major drawback of this drug is that it dissolves in less proportion in systemic circulation to show an active effect. So to reduce these effects, Primaquine incorporated into oral lipid nanoemulsion having particle size in the range of 10–200 nm. The absorption capacity of primaquine was significantly increased as nanoemulsion of Primaquine was used. The drug was readily absorbed by the liver 45% more than before. So the results declared the successful absorption of primaquine by the liver in its nenoemulsion form as it will be used further in the treatment of malaria because it is less toxic.

Keywords: Malaria; Plasmodium Ovale; Plasmodium Vivax; Primaquine; Nanoemulsion
EFFECTS OF HYDRO-ALCOHOLIC EXTRACT OF CARUM CARVI L. (CARAWAY) ENHANCES WOUND HEALING IN STREPTOZOTOCIN INDUCED DIABETIC RATS
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Abstract:
Carum carvi or caraway is traditionally used for treatment of indigestion, pneumonia, and as appetizer, galactagogue, and carminative. Essential oil, fixed oil and many other valuable extractive compounds found in caraway. Anti-inflammatory, spasmolytic, antimicrobial, antioxidant, carminative and immunomodulatory properties of caraway have claimed, so that caraway suggest that it might exert beneficial effects on wound healing. Therefore, this study was carried out to investigate the wound healing effects of hydro-alcoholic extract of caraway in streptozotocin induced diabetic rats. The caraway seed was exhaustively extracted with 80% ethanol, concentrated at 40 °C using a rotavapor and freeze dried to get powder. Westar rats aged 9 weeks (160–200 g) were administered with streptozotocin (STZ, 50 mg/kg) intraperitoneally to induce experimental diabetes. Different doses of hydro-alcoholic extract of caraway (100, 200, 400 mg/kg) were administered orally. We have evaluated the efficacy of hydro-alcoholic extract of caraway treatment by oral administration on impaired wound healing in streptozotocin induced diabetic rats using a full thickness cutaneous punch wound model. Wounds of animals treated with hydro-alcoholic extract of caraway showed earlier re-epithelialization, improved neovascularization, increased migration of various cells including dermal myofibroblasts, fibroblasts, and macrophages into the wound bed, and a higher collagen content. Immunohistochemical localization showed an increase in transforming growth factor β1 in caraway hydro-alcoholic extract treated wounds compared to controls. Enhanced transforming growth factor β1 mRNA expression in treated wounds was confirmed by in situ hybridization, and laser scan cytometry. There is suggesting that hydro-alcoholic extract of caraway effective and possess wound healing activity respective dose and route of administration.

Keywords: Carum carvi; Caraway; Immunomodulatory; Re-Epithelialization; Neovascularization; Myofibroblasts.
Abstract:
The QSAR studies were analyzed and the structural features contributing to the enhancement of activity were identified. Multiple linear regressions with coefficient of determination (r²) of 0.7022 and cross validated correlation coefficient (q²) of 0.6855. Model showed that the Molar refractivity descriptor that relates to the sterically bulky of the molecule suggest that the bulky molecules in activity. The information derived from the present study may be useful in the design of activity.

Keywords: QSAR; Correlation Coefficient; Coefficient of Determination.
DRUG RELEASE KINETICS STUDIES OF NOVEL SUSTAINED RELEASE FORMULATION OF DOXOFYLLINE

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Abstract:
The oral sustained-controlled release formulation has been developed in an attempt to release the drug slowly into the GIT and maintain an effective drug concentration in the serum for longer period of time. The orally administrable novel sustained release tablets of Doxofylline was prepared using controlled release natural polymers and were evaluated for dissolution profile with the reference product. The release data obtained was subjected to zero order, first order, Higuchi’s, Kosermayer’s in order to establish the drug release mechanisms and kinetics of drug release from the tablet formulations. The results comply with the 99% drug release of chitosan polymer compiles with IP.

Keywords: Higuchi’s, Kosermayer’s; GIT; Doxofyllin; IP.
ELECTROCHEMISTRY: A TOOL FOR STUDYING ANTIOXIDANT POTENTIAL OF BIOLOGICAL COMPOUNDS.

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Abstract:
The study of antioxidants has become a topic of great relevance in the biomedical scientific world and the publications mentioning antioxidants have tripled in the past decade. Accordingly, there has also been a development of a large number of methods or assays for the determination of the antioxidant capacity of a variety of molecules. In order to identify and quantify this capacity, some techniques are used, based on synthetic radicals capture; and they are monitored by UV–vis spectrophotometry. Electrochemical techniques are emerging as alternatives, given some of the disadvantages faced by spectrophotometric methods such as the use of expensive reagent not environmentally friendly, undefined reaction time, long sample pretreatment, and low precision and sensitivity. Electrochemical methods provide high potential for investigation of antioxidant compounds, assessment of antioxidant capacity and measurement of electrochemical index. Different types of electrodes can be used for the assay purposes. The methods are known for their suitability for food control and monitoring the levels of antioxidant capacity in other biological samples and matrices. In this review, we have discussed about the application of electrochemical methods for analysis of plant and clinical samples with respect to study of their antioxidant properties.

Keywords: Antioxidants; Electrochemistry; Electrochemical Index.
PATHOPHYSIOLOGY OF CHEMOTHERAPY INDUCED TOXICITY, DNA DAMAGE AND INFLAMMATION.

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Abstract:
Chemotherapy is a method of cancer treatment that uses one or more anti-cancer drugs called chemotherapeutic agents as part of a chemotherapy regimen. The use of chemotherapy treatment is often limited by toxic side-effects caused to healthy cells. Fifteen million new cases of cancer are detected globally each year, the majority of whom receive some form of chemotherapy and suffer varying degrees of its toxic side-effects on healthy tissues. Chemotherapy-induced toxicity results from systemic DNA damage and inflammation of healthy cells in the body. In general, most chemotherapy treatments cause DNA damage or stop cells in mitosis, targeting both dividing cancer and dividing healthy cells e.g. gut epithelium, bone marrow, hair follicle etc. Symptoms of chemotherapy-induced toxicity include bone marrow suppression, sore mouth, nausea and vomiting, hair loss, diarrhoea, loss of appetite and nerve damage. The link between inflammation and cancer is a field of growing interest in the oncology community. Biologists have theorized that simultaneous DNA damage and cell division during inflammation could lead to cancer. To shed light on this important issue we discussed the pathophysiology of chemotherapy induced toxicity and inflammation in this review.

Keywords: Chemotherapy; DNA damage; Anti-cancer drugs; Cytotoxicity.
IMPACT OF DIABETES NEPHROPATHY IN HUMAN LIFE AND ITS TREATMENT

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Abstract:
Diabetes nephropathy is one of the major long –term micro vascular complication and major cause of morbidity and premature mortality. Hyperglycemia cause biochemical pathways such as non-enzymatic, glycosylation polyl pathways, hexose monophosphate shunt pathways and protein kinase –C pathways resulting in overproduction reactive-oxygen species leading to oxidative stress and glomerular damage. It is well established that the detection of microalbuminuria in a patient with diabetic mellitus indicates the presence of glomerular involvements in renal damage. The management of Diabetes nephropathy in early stage can be done control of diabetes using Anti diabetic agents and also used of Anti-hypertensive drugs and diuretics drugs in combination to prevent the progression of disease to overt stage of nephropathy. However, these treatments are not capable of preventing the onset of Diabetic nephropathy. In India majority of the population uses herbs/herbal based medicines for sugar control with or without conventional antidiabetic treatment. World health organization also recommends the use of herbal medicines for treatment of diabetes. Many single and compound ayurvedic formulation especially of prameha rogadhikar category have a long standing history of use in diabetes and kidney dysfunction patients. Ayurvedic formulation does not cause side effect and prevent the development of diabetes nephropathy through its multitargeted and multicomponent actions.

Keywords: Diabetes nephropathy; reactive-oxygen species Anti diabetic and Ayurveda.
PREDICTION OF MOLECULAR INTERACTION BETWEEN LIGNANS DERIVATIVES AND ALPHA-AMYLASE ENZYMES FOR THE TREATMENT OF DIABETES

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Abstract:
Diabetes mellitus is a leading cause of morbidity and mortality throughout the world. In the present studies molecular docking approach was used to identify the potential lignan which was observed to be used in dietary supplement which can reduce the hyperglycaemic level in the blood. The pancreatic alpha-amylase enzymes (PDB ID 1B2Y) was selected and downloaded from protein data bank. The enzyme was prepared, cavities were generated and docking grids were selected. The polyphenolic liganan compounds were drawn and energy minimized using molecular mechanic approach. The docking studies were carried out between ligands and enzymes using molegro virtual docker (mvd). The interaction energies were recorded and evaluated in terms of binding energy and interaction energy. The total energy and rerank score was calculated. The result clearly indicated that lignans derivative showed potent antidiabetic activity although that was less as compare to standard potent alpha amylase inhibitor acarbose.

Keywords: Diabetes mellitus; Polyphenolic Liganan; Antidiabetic; Dietary supplement.
A REVIEW ON NOVEL RADIOPHARMACEUTICALS
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Abstract:
Radiopharmaceuticals are unique medicinal formulations containing radioisotopes which are used in major clinical areas for diagnosis and/or therapy. The facilities and procedures for the production, use, and storage of radiopharmaceuticals are subject to licensing by national and/or regional authorities. Radiopharmaceuticals have been labeled with radioactive material for the purpose of diagnosis or therapy. The radioactive material emits radiation that can either act as a “light beacon” which can be externally imaged or as a therapeutic agent to treat a cancerous area. Each radiopharmaceutical is designed based on the physiological function of the target organ. Radiopharmaceuticals are composed of a radioisotope and a carrier molecule. After administration the radioisotope emits gamma radiation as it decays to a stable form. The carrier molecule has a ligand attached which allows targeting of individual receptors on a cell. Over the past few years, nuclear medicine has undergone impressive growth with the development of positron emission tomography (PET), especially using 18F-fluoro-deoxy-glucose (18FDG), and new approaches in targeted radionuclide therapy. These developments pave the way for personalized medicine by offering practical solutions, especially in oncology, neurology, and cardiology. Novel radiopharmaceuticals targeting relevant biomarkers are powerful patient selection tools for patients who may benefit from targeted therapies, and for early therapeutic response assessment. Moreover, once labeled with beta or alpha emitters, radiopharmaceuticals targeting relevant molecular markers expressed by different solid tumors, and hemopathies can be used for radionuclide therapy. The final objective here is to eradicate residual cancer disease by using cytotoxic mechanisms complementary to those of “non-radioactive” therapies. PET imaging and targeted radionuclide therapy then come together in the context of the theranostic approach to adapt injected activity for personalized therapy.

Keywords: Radioisotopes; Hemopathies; Cytotoxic; Theranostic.
FORMULATION AND EVALUATION OF CONTROLLED POROSITY OSMOTIC PUMP OF FAMOTIDINE

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Abstract:
Controlled porosity osmotic pump contains water soluble additive in the coating membrane which in contact with aqueous environment dissolves and outcome in creation of micro porous membrane. The resulting membrane is substantially permeable to both water and dissolved drug. The goal of this investigation is, to gain the benefit of pH and confrontation independent release performance leading to similar in vitro / in vivo delivery. Osmotically driven system embrace a prominent place because of their trustworthiness and knack to deliver the contents at predetermined zero-order rates for extended periods. In the present investigation, efforts have been made to study the release mechanism of drug having low water solubility by means of controlled porosity osmotic pump. The capsule membrane was prepared by phase inversion technique. The delivery orifices so formed were inveterate by release of an encapsulated dye from the capsule and scanning electron microscope (SEM). The drug selected for this study, valsartan, has low water solubility and hence is unable to create osmotic pressure to cause drug release. To augment the solubility and its osmotic pressure, this study was conducted with a solubility enhancer HPMC (Hydroxypropyl methylcellulose), PEG-6000 and osmogents KCl. famotidine has a short plasma half life of 2-3 h. Hence, famotidine was chosen as a model drug with aspire to develop a controlled porosity system for periods of 9 hours. This system was found to deliver famotidine at a zero order rate for 9 hours.

Keywords: Osmotic Pump; Confrontation; Osmotic Pump; Inveterate.
Abstract:
Overwhelming intrinsic and acquired resistance of cancer stem cells to recent clinical treatments represents a major challenge in treating and curing the most destructive and metastatic cancers. Some recent advances in our understanding of the cellular origin and molecular mechanisms at the basis of cancer initiation and progression of cancers arising from the malignant transformation of adult stem/progenitor cells. Some critical functions provided by several growth factor cascades, including epidermal growth factor receptor (EGFR), platelet derived growth factor receptor (PDGFR), stem cell factor (SCF) and Wnt/β catenin signaling pathways that are often activated in cancer progenitor cells and are responsible for in their sustained growth, survival, invasion and drug resistance. For treatment of cancer some recent progress in the development of new drug combinations to treat the highly aggressive and metastatic cancers for example leukaemias, melanoma and head and neck, brain, lung, breast, ovary, prostate, pancreas and gastrointestinal cancers which remain incurable in the clinics. The eminence is on new therapeutic strategies involving of molecular targeting of distinctive oncogenic signaling elements activated in the cancer stem cells and their local microenvironment during cancer progression. Many of the biomarkers being developed for etiological studies, using the approach of molecular epidemiology, can also serve as biomarkers or intermediate end points to evaluate the efficacy of dietary intervention and chemoprevention studies. Some of these biomarkers will also be useful for assessing the efficacy of cancer therapy. These new targeted therapies will improve the efficacy of current therapeutic treatments against aggressive cancers, and thereby preventing disease relapse and enhancing patient survival.

Keywords: Leukaemias; Melanoma; Head; Neck; Brain; Lung; Breast; Ovary; Prostate.
Abstract:
Punica granatum Linn. (Pomegranate) commonly known as Anar is an ancient fruit with great medicinal importance related to Punicaceae family. Pomegranate is a high value crop and cultivated throughout India. Apart from its demand for fresh fruits and juice, all parts of pomegranate tree have great therapeutic value. Pomegranate used in traditional medicine for treatment of various diseases. Plant Material- Fresh leaves of P.granatum collected from medicinal plant garden. Albendazole, ethanol, petroleum ether, water were used during experimental protocol. All chemicals used are laboratory and analytical grade. Preparation of plant extract is done by using 2 methods: Soxhlet extraction method and Maceration Method. The present study was undertaken to evaluate the anthelmintic activity ethanolic, petroleum ether, aqueous extract of leaves of p. granatum against Pheretimaposthuma(earthworm). Various concentration (10 20, 50mg/ml) of extracts were evaluated in the bioassay involving determination of time of paralysis (P) and time of death (D) of the worms. Albendazol was used as standard anthelmintic drug. Anthelmintic activity of ethanolic, petroleum ether and aqueous extracts were studied by using Pheretimaposthuma. This study shows the ethanolic extract shows the potent activity as compared to petroleum and aqueous extract. In the present study, leaves of P. granatum was selected and studies for its anthelmintic activity and the experimental results concluded that P.granatum leaves show significant anthelmintic activity.

Keywords: Soxhlet extraction method; Maceration Method; anthelmintic activity; Pheretimaposthuma.
MICRONEEDLES: ADVANCEMENT IN TRANSDERMAL DRUG DELIVERY SYSTEM: A REVIEW
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Abstract:
Transdermal drug delivery presents various advantages including enhanced patient compliance, sustained release stops gastric irritation as well as elimination of first pass systemic effect. Transdermal drug delivery holds a promising carrier into the drugs to get direct access across the skin deep into the systemic circulation. It is beneficial due to various biodermal advantages the transdermal route has proved the most convenient one for the purpose of drug delivery system. Microneedles can be used to augment transdermal drug delivery system microneedles are being described and the methods of fabrication have been highlighted.

Keywords: Transdermal drug delivery system; Gastric irritation; Microneedles; Biodermal.
REVIEW ON: RECENT ADVANCEMENTS IN BUCCAL MUCOADHESIVE DRUG DELIVERY SYSTEM

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Abstract:
Oral transmucosal delivery, mainly buccal administration, has developed moreover the use of conventional dosage forms, with new approaches emerging frequently. It is a drug delivery system in which drug is delivered to the specific body area to minimizing dose-dependent side effects and maximizing biological drug availability. Among the several transmucosal sites available, buccal mucosa found to be the easily accessible and convenient for delivery of biological agents for systemic and local delivery as retentive dosage form. Buccal mucosa is lavish in supplying the blood and which acts as a magnificent site for the drug’s absorption and direct delivery to the systemic circulation through jugular vein, these dosage forms provide a higher degree of control and reproducibility compared to other mucosal routes, Buccal drug delivery prolong the residence time at the site, bypasses the first pass metabolism and gastrointestinal drug degradation. Furthermore these are cheap, self-administrable and having good patient compliance. There are some technologies are there like Bio-FX, PharmFilm®, BEMA®, Soluleaves™, and PharmaForm for mucoadhesive buccal films. This article reviews the basic principles and recent developments of buccal mucoadhesive drug delivery system which will be useful to evade the difficulties associated with the formulation design.

Keywords: Oral transmucosal; Buccal; Jugular vein; film; Reproducibility; Bio-FX.
STRUCTURAL INSIGHTS INTO THE ACTIVE SITE OF HSGLT2 FOR THE MANAGEMENT OF TYPE 2 DIABETES MELLITUS (T2DM): HOMOLOGY MODELLING, MOLECULAR DOCKING, AND 3D-QSAR STUDIES

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Abstract:
Diabetes mellitus is one of the most significant global health emergencies of the 21st century. Thus, there is a strong medical need for novel potent hypoglycemic agents with a good safety and efficacy to treat patients with uncontrolled T2DM. The sodium glucose co-transporter 2 (SGLT2) was considered as an important target for the treatment of type 2 diabetes mellitus (T2DM) has emerged as an attractive choice in the context. In the present study, 3D homology model of hSGLT2, consisting of 14 trans membrane helical domains, was constructed by the latest Modeller 9.22 software by taking vSGLT as template. The molecular docking studies were performed by three different softwares namely GOLD, Autodock Vina and Cygwin for the detection of binding sites of C-aryl glucoside analogues on SGLT2. The ligand galactose fits into the binding site of hSGLT2 with amino acid residues Asn75, Gly79, His80, Phe98, Glu99, Ala102, Val286, Ser287, Trp291. In the best docked conformation, the -OH groups on the pyranose ring of the inhibitor form hydrogen bonds with active site residues of hGSLT2 at His80 (Ne-11OH; 3.0Å°), Glu99 (Oe1-11OH; 2.4Å° and Oe2-10OH; 2.95Å°), Ala102 (N-9OH; 2.85Å°), and Ser287 (Og-9OH; 2.91Å°). The 3D-QSAR analysis was carried out with SYBYLX 2.1.1 software on 43 C-aryl glucoside analogues as a training set & 10 compounds as test set. The molecular field analysis with partial least-squares (PLS) method was used to generate statistically significant 3D-QSAR model (Q2= 0.556, R2=0.946) based on a molecular field generated by electrostatic and steric probes. The QSAR model was validated using leave-one-out (LOO) cross-validation. The result of these studies may be utilized for the development of novel SGLT2 inhibitors for diabetic disorders.

Keywords: 3D-QSAR model; C-aryl glucoside analogues; QSAR; Autodock Vina and Cygwin.
PHYTOSOME: A NOVEL BIOMEDICINE

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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. “Phyto” means plants and “some” resembles a covering around/or a structure. Phytosome is generally prepared by reacting one or two moles of polyphenolic phytoconstituents and phospholipid. Phytosome technology results in and 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; Phosphatidycholine; Herbal Extract; Acute; Chronic.
ESTIMATION OF GALLIC ACID AND ELLAGIC ACID IN ANTI-DIARRHEAL FORMULATION BY HPTLC

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Abstract:
Churanams are important group of formulations used by traditional physicians to treat various types of diseases. Dadimashtaka Churna, an Antidiarrhoeal polyherbal formulation is used for the treatment of Diarrhoea and dysentry. In the present study, an attempt has been made to develop a HPTLC (High Performance Thin Layer Chromatography) method for quantitative estimation of the marker compounds namely Ellagic acid and Gallic acid in the laboratory prepared authentic formulation and in 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 present 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 acid and Gallic acid. The Validation is done by various parameters including Accuracy, Precision, LOD, LOQ, Robustness and Ruggedness and specificity. 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 analytical method. 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.
RECENT ADVANCEMENT OF BIOTECHNOLOGY: NERVE REGENERATION

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Abstract:
Nerve damage from neurodegenerative disease and spinal cord injury has mainly been considered irreversible. However, researchers have made important development in synthesizing unusual enzymes that encourage regeneration and growth of injured nerve cells. Neurotrophins are proteins that encourage the development of neurons. It is a sequence of small molecular chains that possesses potent neurotrophic properties. Although these neutrophins have some of the deficiency of protein-based agents, researchers are pursuing this as a possible avenue for nerve regeneration.

Keywords: Neurodegenerative disease; Protein-based agents; Neutrophins; Enzymes.
THE EXTRACORPOREAL TREATMENT IN HIGHLY PLASMA PROTEIN BOUND CASES OF DRUG POISONING

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Abstract:
Intoxication cases are common in adults and paediatric medicine. The Extracorporeal treatment techniques may be lifesaving, especially when natural elimination mechanism is impaired. The most frequently techniques employed for the removal of toxins are hemodialysis, hemoperfusion and MARS. During hemodialysis, the substances are cleared from blood diffusion across a semi-permeable membrane down a concentration gradient from blood into dialysate. While, during hemoperfusion the blood passes through a cartridge containing a sorbent material able to absorb the toxins. Mostly Charcoal based sorbents, synthetic resins and anion exchange resins used. But, this process is slightly less efficient than the hemodialysis. Due to lacks of possibility of correcting acid-base, fluid and electrolyte abnormalities. MARS is a blood purification system, aimed to removing albumin bound toxins molecules. The three circuit incorporated: a blood circuit, an albumin detoxification circuit and a haemodialysis circuit. The patient’s blood passes through in a counter current fashion. The drug substances suitable for this technique include Barbiturates, metformin, lithium, salicylates, theophylline, toxic alcohols (ethylene glycol, methanol and isopropanol), valproic acid, diltiazem, Phenytoin.

Keywords: Molecular adsorbent re-circulating system (MARS)
EXTRACTION BY DEEP EUTECTIC MIXTURE

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Abstract:
Solvent extraction is a highly efficient method that is used for the extraction of various organic and non-organic solutes. There are various different kinds of solvent system that are used for the extraction as per the solute to be extracted or to keep the immiscible property intact. Here our review on extraction by new solvent system is on Deep Eutectic Solvent (DES) also called, Deep Eutectic Ionic Liquids (DEILs), Natural Deep Eutectic Solvents (NADES), Low Transition Temperature Mixtures (LTTM), Low Melting Mixtures (LMM). Deep Eutectic solvent was first recognized and used by “abbot et’ al”. Deep Eutectic Solvent can be easily manufactured by mixture of two or three components that can establish hydrogen bond between them preparing a Eutectic Mixture. Generally quaternary ammonia with Hydrogen Bond Donors (HBD) as examples Choline chloride + urea, Choline chloride + ethylene glycol, Choline chloride + phenol. This review mainly emphasizes on how Deep Eutectic Solvents overcomes the drawbacks in solvent extraction method by any other solvent system that are high toxicity, costly starting materials, non-biodegradability, complex synthesis and purification requirement. Other than this Deep Eutectic Solvent possesses high conductivity, commonly non moisture sensitive, viscosity can be maintained and a convenient storage. The selection of an immiscible liquid along with the aqueous solvent or other solute containing solvent becomes easy with Deep Eutectic Solvent. This review shows the advantages of selection of Deep Eutectic Solvents over others that can set a new height of standards to the solvent extraction method. As for more convenience modern studies have found that eutectics can also be formed by simple amide or alcohol with a hydrate (metal salt) which makes these Deep Eutectic Solvents far more convenient those other solvent systems.

Keywords: Eutectic; Transition; Hydrogen Bond Donors; Extraction; Biodegradability; Purification; Hydrates.
GREEN TEA: THE POWER OF ANTIOXIDANT
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Abstract:
Green tea is one of the healthiest beverages. It is worldwide accepted that green tea has supernatural property to fight against chronic diseases. Now people from 160 countries in the world are habituated to tea drinking although the amount of green tea consumption in worldwide is less than other tea and coffee. Many studies suggest that green tea has many beneficial effects. Green tea is made from unfermented leaves and reportedly contains the highest concentration of powerful antioxidants called polyphenols obtained from the camellia tea plant. The presence of polyphenols in green tea is having such property to protect against severe disease and have antioxidant potential and are substance that fight free radicals- damaging compounds in the body that change cells, damage DNA, and even cause cell death. Many studies are over that free radicals contribute to process development of a number of health problems including cancer and heart disease and aging. Green tea is about 30 percent polyphenols by weight, including large amounts of a catechin called EGCG. Catechins are natural antioxidants that help prevent cell damage and provide other benefits. These substances can reduce the formation of free radicals in the body, protecting cells and molecules from damage. It is considered to be health benefits about antioxidants and nutrients that are great for body and mind. A daily cup of green tea helps to remove free radicals and slightly decreases the chance of getting diseases such as cancer, stroke, rheumatoid arthritis, atherosclerosis and diabetes.

Keywords: Green tea; Catechin; EGCG; Antioxidants.
A REVIEW ON ANTIEPILEPTIC DRUG: PHENYTOIN
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Abstract:
Anti-convulsants are a diverse group of pharmacological agents used in the treatment of epileptic seizures. Anticonvulsants are also increasingly being used in the treatment of bipolar disorder and borderlin. Anticonvulsants suppress the excessive rapid firing of neurons during seizures. Anticonvulsants also prevent the spread of the seizure within the brain. Focal seizures - this start in a particular part of your brain, and their names are based on the part where they happen. They can cause both physical and emotional effects and make you feel, see, or hear things that aren’t there. Generalized seizures happen when nerve cells on both sides of your brain misfire. They can make you have muscle spasms, black out, or fall. Seizures aren’t always an either-or thing. Phenytoin, sold under the brand name Dilantin among others, is an anti-seizure medication. It is useful for the prevention of tonic-clonic seizures and focal seizures. The intravenous form is used for status epilepticus that does not improve with benzodiazepines. Phenytoin binds preferentially to the inactive form of the sodium channel. Because it takes time for the bound drug to dissociate from the inactive channel, there is a time dependent block of the channel. Since the fraction of inactive channels is increased by membrane depolarization as well as by repetitive firing, the binding to the inactive state by phenytoin sodium can produce voltage-dependent, use-dependent and time-dependent block of sodium-dependent action potential. Common side effects include nausea, stomach pain, and loss of appetite, poor coordination, increased hair growth, and enlargement. Drug interaction: Phenytoin is an inducer of CYP3A4 CYP2C9 families of the P450 enzyme responsible for the liver's degradation of various drugs, Antacids administered concomitantly with phenytoin "altered not only the extent of absorption but also appeared to alter the rate of absorption. Warfarin and trimethoprine increase serum phenytoin levels and prolong the serum half-life of phenytoin by inhibiting its metabolism. Phenytoin is used to prevent and control seizures; it reduces the spread of seizures, parenteral phenytoin used for treating generalized clonic tonic status.

Keywords: Phenytoin; Seizures; Clonic-Tonic Status; Focal Seizures; Epilepticus.
A COMPLETE REVIEW ON DIGITALIS MEDICINAL PLANT
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Abstract:
Herbal medicine is the oldest form of healthcare known to mankind. Herbs had been used by all cultures throughout history. It was an integral part of the development of modern civilization. Primitive man observed and appreciated the great diversity of plants available to him. The plants provided food digitalis is a drug that has been used for century’s to treat heart disease. The active ingredient in the drug is glycoside, a chemical compound that contains a sugar molecule linked to another molecule. The glycoside compound can be broken down into a sugar and nonsugar compound. Clothing, shelter, and medicine digitalis is a derivative of the plant digitalis purpurea, or purple foxglove. The plant's name, digitalis (from the latin digit, finger) describes the finger-shaped purple flowers it bears. The effects of the plant extract on the heart were first observed in the late eighteenth century by William withering, who experimented with the extract in fowls and humans. Digitalis is a biennial or perennial herb that grows up to about 1.2 meters height. The lower basal leaves of the plant are long stalked, hairy and egg shaped and the upper leaves are almost without stalks, becoming smaller in size as they go upwards. It has white or purple flowers and egg shaped fruits. Digitalis is used to treat congestive heart failure. It can increase blood flow throughout your body and reduce swelling in your hands and ankle.

Keywords: Digitalis; Congestive Heart Failure; Therapy
A REVIEW ON PSORIASIS: A MAJOR SKIN PROBLEM
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Abstracts:
Psoriasis is a noncontagious, chronic skin disease that produces plaques of thickened, scaly skin. The dry flakes of silvery-white skin scales result from the excessively rapid proliferation of skin cells. Psoriasis is fundamentally a defective inflammatory response. The proliferation of skin cells is triggered by inflammatory chemicals produced by specialized white blood cells called T-cells. Psoriasis commonly affects the skin of the elbows, knees, and scalp. Psoriasis affects all races and both sexes. Although psoriasis can be seen in people of any age, from babies to seniors, most commonly patients are first diagnosed in their early adult years. It has become clear that people with psoriasis are more likely to have diabetes, high blood lipids, cardiovascular disease, and a variety of other inflammatory diseases. The exact cause remains unknown. A combination of elements, including genetic predisposition and environmental factors, are involved. It is common for psoriasis to be found in members of the same family. Defects in the immune system and the control of inflammation are thought to play major roles. Certain medications like beta-blockers have been linked to psoriasis. There are several different forms of psoriasis, including plaque psoriasis or psoriasis vulgaris, guttate psoriasis, inverse psoriasis, and pustular psoriasis. Plaque psoriasis signs and symptoms appear as red or pink small scaly bumps that merge into plaques of raised skin. It is seen worldwide in about 125 million people. For mild disease that involves only small areas of the body, topical treatments, such as creams, lotions, and sprays, may be very effective and safe to use. A small local injection of steroids directly into a tough or resistant isolated psoriatic plaque may be helpful. Oral medications include methotrexate, acitretin, cyclosporine, and others.

Keywords: T-cells, Inflammation, Non-contagious, Plaques, Diabetes
REVIEW ON POLYCYSTIC OVARIAN SYNDROME: A MAJOR PROBLEM IN WOMEN
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Abstract:
A hormonal disorder causing enlarged ovaries with small cysts on the outer edges. The cause of polycystic ovary syndrome is not well understood, but may involve a combination of genetic and environmental factors. It includes birth control pills to regularise periods, medication to prevent diabetes, satins to control high cholesterol, hormones to increase fertility and procedures to remove excess hair. The exact cause of PCOS is unknown. Early diagnosis and treatment along with weight loss may reduce the risk of long term complications such as type2 diabetes and heart disease. Signs and symptoms of PCOS often develop around the time of the first menstrual period during puberty sometimes PCOS develops later, for example, in response to substantial weight gain. Diagnosis of PCOS is made when you experience at least two of these signs: (1) irregular periods (2) excess androgen (3) polycystic ovaries (3) excess insulin (4) low-grade inflammation (5) heredity (6) excess androgen can be a major cause for which genetic analysis may have some significant role in depicting the exact mechanism. This Meta review focuses on unravelling mechanism through genetic genomic strategies in which whole genome sequencing with targeted gene panels approaches may have a significant conclusion and strategies to decipher the genes responsible for PCOS. Complication of PCOS include infertility, gestational diabetes or pregnancy include high blood pressure, miscarriage or premature birth.

Keywords: PCOS; Genetics; Cists; Genomic; Miscarriage; Premature Birth
A REVIEW ON ANTIDIABETIC DRUG: METFORMIN
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Abstract:
Diabetes a group of diseases that result in too much sugar in the blood (high blood glucose)
Most Common Types: Type 1 Diabetes- A chronic condition in which the pancreas produces
little or no insulin. Type 2 Diabetes- A chronic condition that affects the way the body processes
blood sugar. Metformin is used with a proper diet and exercise program and possibly with other
medications to control high blood sugar. It is used in patients with type 2 diabetes. Metformin
works by helping to restore body’s proper response to the insulin body naturally produce. It also
decreases the amount of sugar that our liver makes and our stomach/intestines absorb. Nausea,
Vomiting, Stomach Upset, Weakness, Metallic taste in mouth may occur due to its side effects.
Drug Interactions may change how our medications work or increase our risk for serious side
effects. Beta blocker medications (such as metoprolol, propranolol, glaucoma eye drops) may
prevent fast heartbeat one would usually feel when blood sugar falls too low (hypoglycaemia). Other symptoms of low blood sugar such as dizziness, hunger, sweating are
unaffected by these drugs. Usually this medication is taken by mouth as directed by the doctor,
usually 1-3 times a day with meals. Drink pleanty of fluids while taking this medication unless
otherwise directed by the doctor.

Keywords: Medications; Insuline; Nausea; Hypoglycaemia; Dizziness; Lactic Acidosis
Abstract:
Malaria still remains one of the most dangerous widespread parasitic diseases of developing world. It is caused by plasmodium parasite and kills approximately 1-3 million people annually. The malarial parasite is of plasmodium species and differentiating into four different species P. falciparum, p.vivex, p.malarae, and P.ovale. P.falciparum has developed resistance to all of our available drugs; therefore it is an overwhelming cause of serious disease and death. This leads to study of artemisinin for anti malarial action. Artemisinin were discovered to be highly effective antimalarial drugs shortly after the isolation of parent artemisinin in 1971 in china. Artemisinin is obtained from Artemisia annua in a maximum yield of 0.1%. This plant is peculiar in its behavior. Carefully produced plant may give quality product and yield; special agricultural conditions are provided. Today these are used for its potent antimalarial activity and also in treatment of cancer. Artemisinin Are Pro-drug of Biologically Active Metabolites Dihydromisbin, Artemisinin exert their anti-malarial action by radical formation that depends on endo-peroxide bridge. Parasite infects red blood cells; it consumes haemoglobin within its digestive vacuole, a process that generates oxidative stress. Haemozoin is a parasite pigment deposited within food vacuole after digestion of haemoglobin. The iron of haeme directly generates a highly valent iron o xo-species. It results in a cascade of reactions that produce reactive oxygen radicals -damages parasite and leads to its death.

Keywords: Plasmodium parasite; dihydromisinin; endoperoxide; digestive vacuole; haemozoin; oxygen radicals.
Abstract:
A disease in which abnormal cells divide uncontrollably and destroy body issue. Tobacco use is the cause of about 22% of cancer deaths. Another 10% are due to obesity, poor diet, lack of physical activity or excessive drinking of alcohol. A cancer that forms in the cells of the breasts is called as breast cancer. A cancer in a man's prostate, a small walnut-sized gland that produces seminal fluid., Basal cell cancer: A type of skin cancer that begins in the basal cells., Skin cancer (non-melanoma): The most serious type of skin cancer., Colon cancer: A cancer of the colon or rectum, located at the digestive tracts lower end., Lung cancer: A cancer that begins in the lungs and most often occurs in people who smoke. A cancer of blood-forming tissues, hindering the body's ability to fight infection. A cancer of the lymphatic system. Local symptoms may occur due to the mass of the tumour or its ulceration For example, mass effects from lung cancer can block the bronchus resulting in cough or pneumonia. Systemic symptoms General symptoms occur due to effects that are not related to direct or metastatic spread. These may include: unintentional weight loss, fever, excessive fatigue and changes to the skin. Cancer can spread from its original site by local spread, lymphatic spread to regional lymph nodes or by hematogenous spread via the blood to distant sites, known as metastasis.

Keywords: Busulfan; Chlorambucil; Methotrexate; hematogenous; lymphatic
A SHORT REVIEW ON ZIKA VIRUS PAST, PRESENT STRATEGIES AND FUTURE PROSPECTIVES
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Abstract:
The Zika Virus is a mosquito-borne and spread by the Aedes Mosquito. The virus is Flavivirus, the same species that transmits Dengue, Chikungunya and Yellow Fever. Zika Virus was first isolated in 1947 in the Uganda, from a Febrile Rhesus Macaque Monkey. Few human cases were reported until 2007, when a Zika Virus outbreak occurred in Micronesia (Yap). Zika Virus causes acute, serious illness which is often fatal if not treated, or not an effective treatment nor a vaccine available for Zika virus. Most Zika Virus are characterised by influenza like illness, severe, includes Guillain Barre Syndrome in adults and Microcephaly in babies.

Keywords: Zika Virus epidemic; Dengue; Chikungunya and Yellow Fever.
ANTI-ALZHEIMER ACTIVITY OF HELIANTHUS ANNUS IN STREPTOZOTOCIN INDUCED AMNESIC RATS
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Abstract:
The present study was to evaluate the Anti-Alzheimer activity of Helianthus annus seeds extract with special emphasis on biochemical markers of brain in streptozotocin (STZ) induced amnesia. STZ (originally identified as an antibiotic) is a compound of glucosamine-nitrosourea. STZ is toxic to the pancreatic beta cells and is generally transported through the glucose transporter 2 (GLUT2) and is commonly used to induce experimental diabetes in animals. The administration of STZ through a route such as intracerebroventricular or intraperitoneal (i.p) injection produces a reduction in cognition and an increase in the aggregated fragments of the brain of Aβ, total deposits of protein tau and Aβ. These changes were accompanied by a decrease in the alpha / beta ratio of glycogen synthase kinase (GSK-3) (phosphorylated / total) in the brain. The extract of Helianthus annus seed 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 Helianthus annus seeds 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 Helianthus annus seeds extract 100 mg/kg and 200mg/kg respectively. Orally supplementation of Helianthus annus seed extract also showed significant inhibited AChE activity 4.907±0.31** and 4.967±0.31** respectively

Keywords: Helianthus annus seed extract; Superoxide dismutase (SOD); catalase (CAT); contents of thiobarbituric acid reactive substances (TBARS) and reduced glutathione (GSH)
A REVIEW ON ANTI-ARRHYTHMIC DRUGS: AMIODARONE
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Abstract:
Arrhythmia is a group of conditions in which the heart beat is irregular, to fast or to slow. A heart rate is too fast above 100 beats per minute in adults is called tachycardia and a heart rate that is too slow below 60 beats per minute is called bradycardia. Most Common Type: 1- Extra Systoles: Premature ectopic beats due to abnormal automaticity or after depolarisation from an ectopic focus in the atrium. 2- Atrial Flutter: Atria beat at a rate of 200-350 beat/min this is 2:1 or 4:1 or higher a.v block. 3- Atrial Fibrillation: An Irregular, often rapid heart rate that commonly cause poor blood flow. 4- Ventricular Tachycardia: A condition in which the lower chamber of the heart beat very quickly. Amiodarone is an anti-arrythmic medication used to treat and prevent a number of types of irregular heartbeats. It includes ventricular tachycardia,ventricular fibrillation and wide complex tachycardia as well as atrial fibrillation. This unusual iodine containing highly lipophilic long acting anti-arrythmic drug exerts multiple (class I,II,III,IV) Prolong APD and Q-T intervals attributable to block of myocardial delayed rectifier k+ channels, reduces non-uniformity of refractoriness. Preferentially block inactivated Na+ channels with relatively rapid rate of channel recovery: more effective in depressing conduction in cells that are partially depolarized. Partially inhibits myocardial Ca2+ channels. Amiodarone can increases digoxin and warfarin levels by reducing their renal clearance. Additive A-v block can occur in patient receive beta blocker Inducer and inhibitors of CYP3A4 respectively decrease and increase amiodarone level. Nausea, GIT upset may occur due to oral medication. Photosensitization and sun burn like skin ogimentation occur in about 10% patients. The long duration of action makes amiodarone suitable for chronic prophylactic therapy. It is only anti-arrythmic drug which is in long term has been used to reduce sudden cardiac death

Keywords: Amiodarone; Refractoriness; Oigmentation; Prophylactic.
FORMULATION OF ANTI-WRINKLE CREAM USING PEARL MILLET AND AVACADO EXTRACT

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Abstract:
The present study was performed to evaluate anti-wrinkle cream using pennisetum glaucum and persea Americana. Pearl millet contain phenolic content which have ability to reduce wrinkles and Two Formulation were formulated at different concentration (O/W),(W/O) Cream. Wrinkles typically appear as a result of ageing processes such as glycation, habitual, sleeping positions and wrinkles are also known as rhytide, crease, fold, ridge on skin. Avocados have antioxidant activity so it is good to use as antiwrinkle cream. Pearl millet was studied for its antiaging benefits as the seed oil is rich in antioxidants that might prevent the oxidative damage of the skin. By using the Pearl millet seed in various ratios, cream and nano emulsion were prepared and they are characterised for its physical properties. Following parameters are evaluated: Spreadability, pH, stability, reactivity,

Keywords: Wrinkle; Pearl millet; Polyherbal cream.
CONTROLLED 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 to ineffectiveness and toxicity to drugs when administered by oral conventional methods in the form of capsules and tablets. Appropriately designed controlled release drug delivery systems (CDDS) can be a major advance towards solving problems concerning the targeting of a drug to a specific organ or tissue & controls the rate of drug delivery to the target site. Controlled release (CR)/ Oral Sustained release (SR) products provide an advantage over conventional dosage forms by optimizing pharmacokinetic, pharmacodynamics and bio-pharmaceutics, properties of drugs in such a way that it reduces dosing frequency to an extent that once daily dose is sufficient for therapeutic management through uniform plasma concentration providing maximum utility of drug with reduction in systemic and local side effects and control or cure condition in shortest possible time by smallest 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.
INTERVENTION OF ANGIOTENSIN (1-7)/ MAS RECEPTOR IN EXPERIMENTAL DIABETIC NEPHROPATHY IN RATS

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Abstract:
Diabetes mellitus is commonly related to altered fatty acids composition. This study was designed to analyze the role of vasoconstrictor (Ang) (1-7)/Mas receptor in up fatty acids composition in streptozotocin (STZ)-induced diabetic uropathy (DN) in rats. Carboxylic acid composition was calculable in urinary organ plant tissue tissue by gas activity. Treatment with ANG (1-7), A-779, and ANG (1-7) and A-779 was given from week four to week eight. Diabetic rats exhibited a big increase in levels of saturated fatty acids and a big decrease in levels of unsaturated fatty acids (PUFAs). Treatment with ANG (1-7) considerably attenuated these diabetes-induced changes. In diabetic rats, previous administration of A-779 considerably attenuated the rise in PUFAs created by ANG (1-7); but, for saturated fatty acids, A-779 considerably blocked the decrease in saturated. Our study, for the primary time, documented that endogenous ANG (1-7) modulates carboxylic acid composition in rats. Further, treatment with ANG (1-7) considerably attenuated diabetes-induced changes in fatty acids composition. This might be a further mechanism implying the renoprotective role of ANG (1-7) in diabetic rats.

Keywords: Diabetic nephropathy; fatty acids; Mas receptor.
MEMORY ENHANCING ACTIVITY OF LUFFA AEGYPTIACAFRUIT BY SCOPOLAMINE INDUCED AMNESIA IN RATS
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Abstract:
Memory enhancer can easily improve memory and alertness in humans with Alzheimer’s disease (AD) that affect the mind. Indigenous drugs are being constantly explored for this purpose. The extract of Luffa aegyptiaca was administered orally at two doses (100 and 200 mg/kg) for 7 and 14 consecutive days to the respective groups of rats. Piracetam was the standard drug used. Hydroalcholic extract of Luffa aegyptiaca fruits (HELAF) was administered to albino rats to evaluate transfer Latency (TL) on an elevated plus maze (EPM). TL was a measure of acquisition learning and retrieval. To evaluate the latency to find the food Radial arm maze (RAM) was used. Biochemical analysis was done for acetyl cholinesterase enzyme level. (HELAF) at a dose of 100 and 200 mg/kg produced a significant decrease in TL measured using EPM in comparison with the control. In RAM the activities of (HELAF) (100,200 mg/kg) showed significant memory enhancement.

Keywords: HELAF; Piracetam; EPM; RAM; Scopolamine
WOUND HEALING ACTIVITY OF THE HYDRO-ALCOHOLIC EXTRACT OF LEAVES OF CALENDULA OFFICINALIS, SOLANUM LYCOPERSICUM & CURCUMA LONGA (POWDER) IN WISTAR ALBINO RATS

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Abstract:
Calendula Officinalis has been known for many potential uses. Leaves of Calendula officinalis are used in herbal medicine especially in case of Ayurveda for asthma and bonesetting. Roasted leaves is applied over the area of relieve pain. It is also used to treat sore throat and mouth, cancer and duodenal ulcer. Curcuma longa is used as anticancer, antimicrobial, antiinflammator. Solanum Lycopersicum is used in the treatment of toothache, rheumatis Calendula officinalis, curcuma longa, Solanum lycopersicum leaves were dried, crushed in coarse powder hydro-alcoholic extract was obtained and turned to 10% ointment form. In the course of this study, 18 male wistar albino rats weighing approximately 150-180g 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 10% formulation ointment. Wound healing was monitored on days 4, 8, 12, 16 and histopathological evaluation was carried out on the samples. Leaf extract of Calendula Officinalis, Curcuma longa, Solanum lycopersicum promotes wound healing via bactericidal activity.

Keywords: Wound healing; Calendula Officinalis; (leaves) Curcuma longa; (powder) Solanum lycopersicum; (leaves) hydro-alcoholic extract; ointment; bactericidal activity.
FORMULATION AND EVALUATION OF HERBAL FORMULATION FOR THE TREATMENT OF ACNE

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Abstract:
Acne vulgaris is a most common skin disorder of pilosebaceous unit that affect areas containing the largest oil glands, including the face, back, and trunk. It is generally characterized by formation of seborrhea, comedone, inflammatory lesions. Propionibacterium acnes and Staphylococcus epidermidis have been recognized as pus-forming bacteria triggering an inflammation in acne. Staphylococcus aureus support to cause inflammation in acne. The present research work deals with formulation and evaluation of herbal gels against this etiologic agent of acne vulgaris. The ethanolic extract of Neem (leaves), Nutmeg (fruit), and Black pepper (fruit) were prepared and formulated into a topical gel. In vitro antibacterial activity was performed against P. acnes, S. epidermidis and S. aureus, using agar well diffusion method. The measured zones of inhibitions of the prepared formulations were compared with standard antibiotic (Clindamycin) and standard marketed topical herbal formulation. The prepared gels were evaluated for pH, viscosity, spreadability, stability, drug content, acute skin irritancy activity and in vitro diffusion. The results from the agar well diffusion showed that Neem, Nutmeg and Black pepper would inhibit the growth of P. acnes, S. epidermidis and S. aureus and the prepared polyherbal gels showed comparable antimicrobial activity against these bacterias with the marketed preparation. However, the standard Clindamycin was more active than that of prepared polyherbal gels, marketed herbal anti-acne preparation and extracts of Neem, Black pepper and Nutmeg. Taken together, our data indicated that Neem, Black pepper and Nutmeg had inhibitory and synergistic effect against P. acnes, S. epidermidis and S. aureus.

Keywords: Acne; Neem; Nutmeg; Black pepper.
EVALUATION OF ACUTE TOXICITY STUDY OF AGNPS COUPLED WITH ANDROGRAPHIS PANICULATA IN EXPERIMENTAL MURINE MODEL

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Abstract:
Combination of nanotechnology and medicine is called as nanotechnology. It provides new direction in monitoring, medical diagnosis and treatment at the level of single molecules or molecular assemblies at the “nano” scale. Nanomedicine is widely explored nowadays for treatment of life threatening diseases, yet comes with various challenges and questions. The present study encapsulates the acute toxicological aspects of the Andrographis paniculata coupled with silver nanoparticles (AP-Ag NP). For acute toxicity studies according to OCED (Organization for Economic Cooperation and Development) guidelines Swiss Albino male mice (6-7 weeks) were used and were given single intraperitoneal dose of 2000 and 5000 mg/kg body weight of the AP-Ag nanoparticle and were observed for mortality and other side effects for 14 days. The individual components of the formulation, viz. silver oxide in surface modified nano form and at low dose, and Andrographis paniculata are both biocompatible materials. No changes were found for general appearance, behavior and body weight, thus concluding that the nanocomposite formulation does not have a single dose toxicity.

Keywords: Acute Toxicity; Nanomedicine; Silver Nanoparticles; Andrographis paniculata; Mice Model.
DESIGN & DEVELOPMENT of GASTRORETENTIVE SUPERPOROUS HYDROGEL TABLETS of ESOMEPRAZOLE
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Abstract:
Super porous hydrogel were designed to retain drug in gastric medium. These systems swell very rapidly in stomach & maintain their integrity for longer period even in acidic environment of stomach while releasing pharmaceutical ingredient. The present work focused on the concept to formulate super porous hydrogel tablets of esomeprazole using effervescent approach for gastro retentive drug delivery system to improve its bioavailability. The rate retarding polymers like chitosan, xanthum gum & tamarind gum along with other suitable excipients were used by direct compression method. The prepared tablets were evaluated for apparent density porosity, swelling studies, scanning electron microscopy, in vitro drug release, FTIR studies & stability studies. The results revealed that the selected formulation (F6 containing xanthum gum) successfully showed expected criteria for gastro retentive drug delivery system based on super porous hydrogel is promising for stomach specific delivery of esomeprazole.

Keywords: Gastro retentive; Super porous hydrogel; Swelling studies & Stability studies.
STRATEGIES FOR REDUCING MEDICATION ERRORS IN THE EMERGENCY DEPARTMENT

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Abstract
The most important and main concept of health care systems, as a global problem, is patient safety. More standardization has been introduced to decrease the errors. Medication errors are common in emergency departments across the world. A medication and human error in emergency departments ends with promoting the culture of reporting medication errors and adopting a systematic approach to eliminate such errors. In some health systems, such errors are not recorded properly, so the statistics are not accurate, and this is the reason for continuation of errors. Overcrowded emergency departments, frequent work shifts, heavy workload, absence of competent medical personnel in the shifts, and failure of programmed medical staffs are the other factors that may cause errors. Due to the nature of the services provided in the emergency departments and the large number of patients, heavy workload may cause human errors. Knowledge of medication use is highly important to decrease these errors in emergency departments and overcoming these challenges requires adequate knowledge of the medical staff and choosing appropriate strategies in all aspects. Medication error analysis provides order entry systems, barcoding system, medication reconciliation, and standardizing medication use process, thus, special consideration should be given to the develop strategies for the extreme age groups: the old and the pediatric population groups, as they are always at risk. The risk of errors can be reduced by increasing the number of nurses, physicians, skilled technicians, and there should be a professional pharmacist in emergency departments to avoid prescription errors to improve the quality of emergency department services.

Keywords: Emergency Medicine; Pharmacy; Medication Errors; Pharmacists; Barcoding system.
BASICS 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, The most common reasons for using traditional medicine are that it is more affordable, more closely corresponds to the patient’s ideology, allays concerns about the adverse effects of chemical (synthetic) medicines, satisfies a desire for more personalized health care, and allows greater public access to health information. Furthermore, traditional medicines are widely perceived as natural and safe, that is, not toxic. 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.
FORMULATION & EVALUATION OF METOCLOPRAMIDE ORALLY DISINTEGRATING TABLET
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Abstract:
Metoclopramide hydrochloride is an anti-emetic drug used for the treatment of nausea and vomiting induced due to surgery or chemotherapy. After oral dosing, the drug undergoes extensive first pass effect which results in low bioavailability. Hence in the present research work, orally disintegrating tablets of Metoclopramide hydrochloride were formulated for rapid and complete absorption in the body and to achieve maximum therapeutic effect. Two different super disintegrating agents Sodium starch glycolate and Crospovidone were selected in different ratios and tablets were formulated. Various parameters were evaluated on tablets i.e. disintegration time, dissolution time, friability, hardness, thickness by standard procedures. Results confirmed that tablets formed had sufficient hardness to withstand handling, shipping and transportation. Tablets also exhibited satisfactory results for other evaluated parameters. The formulations were shown to have a rapid disintegration time of less than one minute. On stability study, results indicated that the orally disintegrating tablets were stable under different environmental storage conditions. From the study, it was concluded that formulation of orally disintegrating tablets can contribute in this area to enhance the bioavailability of Metoclopramide hydrochloride.

Keywords: Metoclopramide hydrochloride; Anti-emetic drug; Bioavailability; Sodium Starch Glycolate; Crospovidone.
DEVELOPMENT, OPTIMIZATION & EVALUATION OF ACY Clovir TOPICAL GEL FOR ANTIVIRAL EFFECT

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Abstract:
Acyclovir is an antiviral agent used for the treatment of viral disease such as herpes simplex virus infections, chickenpox, and shingles. The main drawback with acyclovir is poor bioavailability due to low solubility. So in the present study, acyclovir topical gel was developed to enhance the bioavailability. The gel was formulated using various polymers such as Carbopol 934, Carbopol 940, Hydroxy Propyl Methyl Cellulose and Sodium Carboxy Methyl Cellulose in different concentrations and Dimethyl Sulfoxide(DMSO) was added as permeation enhancer. Results concluded that gel prepared with 1% carbopol- 934(A2) showed maximum drug content (101.72%) in comparison to other formulations. Spreadability results also showed maximum result with formulation containing 1.0% carbopol-934. 1.0 % carbopol-934 showed maximum release (74.59%) while the gel formulated with HPMC and Sodium CMC, release was much lesser than carbopol gels. The best formulation was subjected to stability study as per the procedure and the gel was both physically and chemically stable at 4-50 C, room temperature and 37±50 C. From the research work, it was inferred that formulation A2 with 1% Carbopol-934 was found to be the best formulation having good in vitro release profile, stability and bioavailability.

Keywords: Acyclovir; Antiviral Agent; Topical gel; Bioavailability; Carbopol.
FORMULATION DEVELOPMENT AND EVALUATION OF FLOATING-PULSATILE DRUG DELIVERY OF BISOPROLOL

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Abstract:
The objective of the present study was to formulate and evaluate press coated pulsatile floating drug delivery system of bisoprolol. The pulsatile floating concept was applied to enhance the gastric residence time of the dosage form with a (lag) delay phase followed by the burst release. The developed system consisted of two parts i.e., a core tablet consist of active ingredient and an erodible outer shell having gas generating agent. The rapid release core tablet (RRCT) was prepared using active ingredient with superdisintegrants. Compression coating of optimized RRCT was done by using polymer. A complete 32 factorial design was applied for the optimization. The quantity of Polyox (WSR205) and Polyox (WSR N12K) was selected as an independent variable. Drug Release, Swelling Index and Lag Period were selected as dependent variables. Floating pulsatile release formulation (FPRT) F13 at level 0 (55 mg) for Polyox (WSR205) and level+1 (65 mg) for Polyox (WSR N12K) showed lag time of 4 hrs with drug release >90%. The data was analyzed using ANOVA and was statistically significant. The optimized formulation release kinetics is better suited to the zero order models.

Keywords: Floating, press coated, Polyox WSR205 and Polyox WSR N12K, Pulsatile Drug Delivery, Bisoprolol.
OBESITY IS A COMPLEX HEALTH ISSUE: AN OVERVIEW
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Abstract:
Obesity is a complex health issue to address; it is a serious and chronic disease that can have a negative effect on many systems in your body. Overweight and obesity may increase the risk of many health problems, including diabetes, heart disease, osteoarthritis and certain cancers. Obesity is increasing at an alarming rate throughout the world. Today it is estimated that there are more than 300 million obese people world-wide. Obesity is regarded as a disorder of lipid metabolism and the enzymes involved in this process could be targeted selectively for the development of antiobesity drugs. However, most of the anti-obesity drugs that were approved and marketed have now been withdrawn due to serious adverse effects. The naturopathic treatment for obesity has been explored extensively since ancient times and gaining momentum in the present scenario. Traditional medicinal plants and their active phytoconstituents have been used for the treatment of obesity and their associated secondary complications. Some active medicinal plants and their respective bioactive compounds were also tested by clinical trials and are effective in treatment of obesity. This review focus on natural phytoextracts with their mechanism of action and their preclinical experimental model for further scientific research in company.

Keywords: Obesity; antiobesity drugs; present scenario; active phytoconstituents.
Abstract:
The aim of this research was to investigate and analyze the organizational structure based on 7 S of McKinsey. The research population included managers and experts of Qeshm free zone. Simple random sampling was used to select research population, and the number of population was decided according to Cohcaran formula, which was 84. The research was conducted in the form of questionnaires. This model is one that can be applied to almost any organizational or team effectiveness issue. Inconsistency between some of the elements can be identified by this model. The results of the research is indicating toward better advantage of 7s model.

Keywords: McKinsey; Cohcaran formula: investigate and analyze.
GREEN TEA AS AN ANTIOXIDANT
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Abstract:
Free radicals are oxygen-containing molecules with an uneven number of electrons allowing them to react with other molecules leading to “Oxidation”. Antioxidants are compounds that inhibit oxidation. When an imbalance occurs between free radicals and antioxidants in our body it leads to Oxidative Stress which is the root cause of aging and various diseases. Antioxidants are naturally occurring molecules that combat oxidative damage in biological entities by free-radical scavenging. Green tea is widely considered as a health-promoting beverage. Green tea is made from the leaves of the Camellia Sinensis plant, member of the Theaceae family and contains the highest concentration of powerful antioxidants called Polyphenols. Polyphenols in green tea can neutralize free radicals and may reduce or even help to prevent the damage they cause. The major polyphenols in green tea are catechins, epicatechin (EC), epigallocatechin (EGC), epicatechin gallate (ECG) and epigallocatechin gallate (EGCG). The production of green tea is characterized by heating process which kills the enzyme polyphenol oxidase. The other process is rolling in which the leaves are cut and twisted. Green tea has been considered a medicine and a healthy beverage since ancient times. It has been recommended for headaches, body aches and pains, digestion, depression, detoxification, as an energizer and, in general, to prolong life. Some important effects of green tea are Antioxidant effect, Antimutagenic and Anticarcinogenic Potential, Anti-obesity effect and Anti-diabetic effect. Green tea has been consumed since ancient times in order to maintain and improve health. Taking all this into account, it would be advisable to consider the regular consumption of green tea in our daily diet.

Keywords: Free radicals; catechins, epicatechin (EC); epigallocatechin (EGC); epicatechin gallate (ECG) and epigallocatechin gallate (EGCG).
Abstract:
With Continuous Improvement in Living Condition, The Anti Diabetic Drug Metformin has generated a tremendous interest in treatment of type 2 diabetes. The mechanism action of metformin is antihyperglycemic agent. It works by decreasing the glucose production and increasing the insulin sensitivity of body tissue. Metformin is most common and widely prescribed medicine for hypoglycemic medication for type 2 diabetes. This drug actually has an insulin sensitivity effect in peripheral tissue. The dose of Metformin is immediate release drug tablet which usually taken orally. The dose is 500mg/week. The diabetes drug metformin may make vaccine work better. Metformin also used as anti aging agent. “These finding were unanticipated, but potentially extremely important and could revolutionize current strategies for both therapeutic and preventive vaccine.” In the present study, shows that B cells function and vaccine Responses, hampered by obesity and type 2 diabetes are recovered by Metformin. Moreover Metformin used in vitro to stimulate B cells from recently diagnosed type 2 diabetes patient is also able to reduce B cells intrinsic inflammation and increase antibody responses, one of the metformin’s effect to help cells burn fat. The findings do not mean that if you take metformin orally the problem of diabetes has been resolved. “But Metformin widely used drug might enhances vaccination programs. If we combine our finding with those strategies, we may be able to make vaccine. If there is a symptom of diabetes in children at early stage we can administer this vaccine as a onetime permanent treatment.

Keywords: Metformin Vaccine; Diabetes; Permanent treatment
A VALIDATED RP-HPLC METHOD FOR SIMULTANEOUS DETERMINATION OF AMLODIPINE AND FIMASARTAN IN PHARMACEUTICAL FORMULATION

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Abstract:
A selective and sensitive reverse phase high performance liquid chromatographic (RP-HPLC) method has been developed for the separation and quantification of Amlodipine (AMLO) and Fimasartan (FIMA) in tablet dosage form. The determination was carried out using HPLC (CHEMSTATION software) system with Kinetics C18 (Agilent), 150 × 4.6mm, 5µm column as a stationary phase and mobile phase comprised of methanol: water (0.1% OPA) (75:25). The pH of phosphate buffer is adjusted to 6.0 by using orthophosphoric acid. The flow rate was maintained at 0.7 ml/min and the eluent was monitored at 237 nm. The retention time of AMLO and FIMA were 3.77 min and 5.062 min respectively. The method was validated in terms of linearity, precision, accuracy, ruggedness, specificity and robustness. The method was linear over the range 50-150 µg/ml for both AMLO (r = 0.999) and FIMA (0.997). For precision studies; RSD for AMLO and FIMA were 0.24 and 0.14 respectively. The percentage recoveries for both drugs from their tablets were 98 and 102% respectively. Inter-day; intra-day RSD for both drugs were found be 0.24 and 0.35, 0.89 and 0.89 respectively.

Keywords: Amlodipine; Fimasartan; RP-HPLC; Tablets
HERBAL VACCINE FOR DIABETES: A NEW APPROACH

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Abstract:
Traditional medicine derived from Medicinal plants is used by about 60% of world population. This review focuses on Vaccines made by herbal drugs and plants used in treatment of diabetes, especially in India. Diabetes is an important disease affecting all parts of the body. In India diabetes is a major problem in urban areas. There are lists of plants which can be used as vaccines in treatment of Diabetes. Vaccines formulation from Herbal drugs available at low cost. A list of medicinal plants with proven Anti diabetic drug which can be used as vaccines. This includes Allium Sativam (Garlic), Eugenia Jambolana (Jamum), Ocimum scantum (Tulsi), Withania Somnifera (Ashwagandha), Aloe (aloe vera), Momordica Charantia (Bitter melon), Cinnamomum Vernum (Cinnamon), zingiber officinale (Ginger). The vaccines of following medicinal plants help the patients in treatment of Diabetes. We can administer these herbal vaccines at one time for permanent treatment. Herbal drugs for Diabetes are more useful than others because herbal drugs can be administered easily with vegetables and fruits or food material. Medicinal plants shows another effect in human body medicinal plants act as Antioxidant so the chances of cardiac disease and obesity for Diabetes or non diabetes patients are also resolved by this Herbal Vaccines.

Keywords: Herbal vaccines; medicinal plants; Diabetes; permanent treatment.
PHYTOCHEMICAL INVESTIGATION, CHARACTERIZATION AND ISOLATION OF MEDICINAL PLANT: SAUSSUREA OBVALLATA
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Abstract:
Saussurea is a genus of about 300 species of flowering plants in the Asteraceae family, with the highest diversity in the alpine regions of the Himalayas. Saussurea obvallata, also known as Brahmakamal in Sanskrit, is named after Brahma, the Hindu God of creation. The species is the state flower of Uttarakhand. The objective of the study was to isolate phytoc constituent from S. Obvallata flower ethanol extract by column chromatography and characterization by various spectroscopic techniques such as ultraviolet-visible, infrared, nuclear magnetic resonance and mass. The S. Obvallata flower ethanol extract was prepared by successive solvent extraction using Soxhlet apparatus. The ethanol extract was found rich in phytoc constituents with the help of chemical tests, and also it was found effective against pain, inflammation, and pyrexia in experimental animal studies. Hence, ethanol extract was selected for isolation of important plant constituents by column chromatography. The column was carried out with the different solvent system used in particular ratio. Extraction and Purification of isolated compounds has been done and characterization of isolated compounds has been done through spectral techniques like IR, NMR, Mass spectrum. This chapter deals with description, review of literature and finding of phytochemicals and pharmacological studies of Saussurea obvallata. Physical parameters were-Loss on drying 12%(w/w), Total ash value 5.5%(w/w), acid in soluble ash value 2.64%(w/w), alcoholic extractive value 4.87%(w/w) and water extractive value 7.67 %(w/w) and quantitative estimation value is obtained By method alkaloid (9.31%), phenols (4.32%), flavonoids (7.58%), tannins (3.62%). On the behalf of characterization of isolated compounds I concluded that the alkaloids and steroids moiety were present in ethanolic and hexane fraction respectively. It was concluded that S. Obvallata flower ethanol extract was rich in plant constituents and also has a number of therapeutic active constituents which suggest the plant used for other activities.

Keywords: S. Obvallata; Saussurea; IR; NMR; Mass spectrum.
MOLECULAR DOCKING STUDY OF CARBAZOLE DERIVATIVES CONTAINING CHALCONE ANALOGUES AS NON-INTERCALATIVE TOPOISOMERASE II CATALYTIC INHIBITORS
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Abstract:
In the present study, docking was performed on Carbazole derivatives containing Chalcone analogues as non intercalative topoisomerase II catalytic inhibitors using software Molegro 6.0. The results obtained by the study can be used to make more potent and selective inhibitors of Topoisomeras II. The docking was performed using the PDB 4R1F where the highest MolDock score was found to be -171.176 and re rank score was found to be 111.075 and drug binds to the active site of protein with amino acid Ser 320, Lys 306 and Gln 309. These compounds can be used for in vitro and in vivo studies.

Keywords: Carbazole derivatives containing Chalcone; docking; topoisomerase II.
DOCKING, SYNTHESIS AND EVALUATION OF TRIAZOLE DERIVATIVES AS ANTIMALARIAL AGENTS
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Abstract:
Molecular docking study of the designed compounds was performed to study the binding pattern of the structure with the enzyme. This work is aimed at identifying and optimizing leads for Triazole derivatives as Pf dihydrofolatereductase and farnesyltransferase inhibitor. A series of 40 Triazole derivatives have been designed and 15 compounds have been synthesized on the basis of glide score. Glide score was obtained using GLIDE module. Docking studies yielded crucial information concerning the orientation of the inhibitors in the binding pocket of the enzyme and the interaction between the target and ligands at the molecular level. The detail of their binding pattern at the active site of receptor was successfully visualized with the help of software. The binding pattern of the designed structures was studied. Docked conformation of ligand S6 and S10 with best glide score All the synthesized compounds were evaluated for invitro antimalarial evaluation against P. falciparum and characterized by TLC, melting point, IR, 1HNM R, mass spectral data.

Keywords: Triazole; Antimalarial evaluation; Docking.
FORMULATION AND EVALUATION OF *Butoconazole* DERIVATIVE MUCOADHESIVE NANOEMULSION BASED GEL FOR TREATMENT OF FUNGAL VAGINAL INFECTION

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Abstract:
The aim of the present study was to formulate and evaluate nanoemulsion-based gel of *Butoconazole* for the treatment of vaginal infection. The solubility of *Butoconazole* in various oils, surfactant and co-surfactant, were done to identify the components of the nanoemulsion. Based on the solubility studies, isopropyl myristate (IPM) as oil, Cremophore EL as surfactant and ethanol as co-surfactant were selected for preparing nanoemulsion. Various nanoemulsions were prepared by using the spontaneous emulsification technique. The nanoemulsion area was determined by constructing of pseudo ternary phase diagrams. The formulated nanoemulsions were subjected to accelerated stability test. The nanoemulsion formulae that passed the stability test were characterized for its morphology, droplet size, conductivity and zeta potential. These optimized formulae were incorporated into the polymeric gel of carbopol 934 (CRB), hydroxypropyl methylcellulose (HPMC), sodium carboxymethylcellulose (NaCMC) and xanthum gum (XGUM), then evaluated for pH, viscosity, bio-adhesion properties, spreadability and drug content. The optimal nanoemulsion formulae which composed of oil, surfactant: cosurfactant mixture (1:1 or 2:1), and water in ratio 5:45:50 showed the highest stability of nanoemulsion. All the nanoemulsion gel formulae showed higher release and antifungal activity than the marketed cream. The *Butoconazole* nanoemulsion-based gel could be successfully promising formulation for the topical treatment of fungal vaginal candidiasis.

**Keywords:** Nanoemulsion; Butoconazole; Nanoemulsion-based gel; Vaginal candidacies; Mucoadhesion.
CHRONOPHARMACOLOGY: A REVIEW
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Abstract:
Chronopharmacology is the study of the manner & extent to which the kinetics & dynamics of medication directly affected by endogenous biological rhythm & also how the dosing time of medications affects biological timekeeping & features (period, level, amplitude & phase) of biological rhythms. Chronopharmacology includes chronopharmacotherapy, chronopharmacokinetics & Chronotoxicity. Chronopharmacotherapy is the investigative science that elucidates the biological rhythm dependencies of medication. It is useful to solve problems of drug optimization i.e. to enhance the desired efficiency or to reduce its undesired effects. So Chronopharmacologic approaches involve a lesser risk of errors and or false information than the conventional homeostatic approach. The effectiveness & toxicity of many drugs vary depending on dosing time associated with 24 hours rhythm of biochemical, physiological & behavioural process under the control of circadian clock such chronopharmacological phenomenon are influenced by not only the pharmacokinetics but also pharmacodynamics of medication. Interestingly, some aspects of physiology and behavior are controlled directly via a “master clock” in the suprachiasmatic nuclei of the hypothalamus, while others are controlled by “slave” oscillators in separate brain regions or body tissues. Recent research shows that these clocks can respond to different cues, and thereby show different phase relationships. Therefore, full prediction of chronopharmacology in pathological contexts will likely require a systems biology approach considering “chrono-interactions” among different clock-regulated systems.

Keywords: circadian rhythms; drug metabolism; chronotherapy; cancer; peripheral oscillators; systems biology.
NATURAPOLYCEUTICS: THE SCIENCE OF UTILIZING NATURAL MATERIALS FOR DRUG DELIVERY SYSTEM

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Abstract:
Naturapolyceutics defines the emerging science and technology platform that blends natural polymers and pharmaceutics for the design and development of drug delivery systems. Polymers form the core of drug delivery systems. Polymers are utilized in drug delivery to provide weight, consistency and volume for the correct administration of the drug and in addition, they are multifunctional providing stability, drug release, targeting, enhanced bioavailability and patient acceptability. Natural polymers such as polysaccharides are hydrophilic, enzymatically degradable, and are able to retain the stability of protein drugs incorporated in them as well as increase their (proteins) therapeutic effects. Polysaccharides exhibit good haemocompatibility and interaction with living cells making them compatible and suitable biomaterials for long systemic circulation and targeting. Natural polymers have been used for diverse applications in drug delivery such as emulsification, suspension, controlled release, film coating, disintegration, solubilization, bioadhesion, gelling, thickening, viscosity modulation, bulking agent, drug devices, drug modification, encapsulation and mechanical strengthening. Natural polysaccharides are increasingly being used for drug targeting for chronic and site-specific diseases. Natural polymers are continually being explored in innovative approaches to drug delivery and personalized medicines.

Keywords: Drug Delivery; Drug Delivery Systems; Natural polymer; Polysaccharide
EVALUATION OF HEPATOPROTECTIVE POTENTIAL OF BUTEA MONOSPERMA IN CISPLATIN INDUCED OXIDATIVE STRESS

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Abstract:
The methanolic extract of Butea monosperma was investigated for antioxidant and hepatoprotective potential for cisplatin induced hepatotoxicity and oxidative stress condition. The stable 1, 1-diphenyl-2-picryl hydrazyl radical (DPPH) and reducing power assay was used for determination of free radical scavenging activity and the effect on enzymes involved in oxidative stress were analyzed by SOD, GSH, LPO and Catalase. The experiment was performed on toxicity induced liver. The liver was homogenized into ice cold acid buffer and the supernatant was used for evaluation. It was observed that extract showed good line of fit for % inhibition in concentration range of 10-50 mcg/ml with R²=0.99. The level of SOD, GSH and CAT was significantly less (P<0.05) as compared to vehicle treated group which was sign of oxidative stress in liver due to drug induced toxic metabolites. The LPO level was also found to significantly high (P<0.05) as compared to vehicle treated group. The results of present study showed that the Butea monosperma methanolic extract possess significant hepatoprotective activity.

Keywords: Butea monosperma; 1, 1-diphenyl-2-picryl hydrazyl radical; SOD, GSH, LPO and Catalase.
OVERVIEW ON VIROSOMES AS A NOVEL CARRIER FOR DRUG DELIVERY
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Abstract:
After development of first vaccine in 1796, world has seen big number of vaccination coming through the industry, vaccine is a biological preparation that provides active acquired immunity to a particular disease. Virsomes are this new age drug delivery system, which could be composed dead or weakened virus or biogenetic components which can release the drug in particular site and this could be biodegradable and easily flush out through the body, and could be new leap into vaccination against viruses and with help of nanotechnology and artificial intelligence. This review focuses on characteristics, structure, advantages and disadvantages of virsomes.

Keywords: Virsomes; nanotechnology; vaccine; drug delivery system.
HERBS USED IN THE TREATMENT OF POLYCYSTIC OVARY SYNDROME (PCOS)- A REVIEW

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Abstract:
Polycystic ovary syndrome (PCOS) is one of the most important gynecological disorders among reproductive-age women. In patients with PCOS, the secretion rate and metabolism of androgens and estrogens are disrupted. With regards to the increasing prevalence of PCOS and associated physical and mental problems as well as the effects of changes in sex hormones in development of this disease, our aim is to investigate the effects of different herbal extracts on changes in the serum levels of sex hormones and ovarian tissue. According to the evidence, herbal extracts containing phytoestrogens cause decrease in hyperandrogenism, insulin resistance, and ovary weight as well as increase in ovulation. Therefore, these plants can be partly effective in this syndrome via affecting the serum levels of different hormones and ovarian weight and morphology, representing an opportunity to investigate and discovery new bioactive products. Lifestyle intervention and oral contraceptives are the first-line treatments for PCOS. Recent studies have suggested that complementary and alternative medicine (CAM) therapies including acupuncture, herbal medicine, and mind–body therapy have the potential to alleviate the symptoms and/or pathology of PCOS and to improve the quality of life of women with PCOS. This meta-analysis aimed to quantitatively summarize the efficacy and safety of moxibustion combined with oriental herbal medicine (OHM), common CAM therapies, for treating PCOS.

Keywords: Gynecological disorder; Hyperandrogenism; Insulin; Herbal medicine; Acupuncture.
MOLECULAR MODELING STUDY OF SOME AURORA KINASE INHIBITOR AS ANTICANCER AGENTS
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Abstract:
Aurora Kinase has been identified as one of the most attractive targets for cancer therapy and a considerable number of Aurora inhibitors have been reported recently. This study was performed to find the selective chemical features for Aurora kinase inhibitors using the potent methods like Hip-Hop, virtual screening, homology modeling and molecular dynamics and docking. The best hypothesis Hypol was used as a 3D query to screen the chemical databases. The screened molecules from the databases were sorted based on ADME and drug like properties. The selective hit compounds were docked and the hydrogen bond interactions with the critical amino acids present in Aurora kinase were compared with the chemical features present in the Hypol.
In these researches 39 compounds were selected from literature for in vitro assay against several human tumour cell lines including A549, MCF7, HepG2 and PC3 in which Aurora is overexpressed. The hit compounds were subsequently subjected to filtering by Lipinski’s rules and docking study to refine the retrieved hits and as a result to reduce the rate of false positive. Two compounds show very low micromolar inhibition potency against some of these tumour cells. And they have been selected for synthesis.

Keywords: Anticancer; HepG2; Docking
FORMULATION AND EVALUATION OF HERBAL TRANSDERMAL PATCH OF TURPENTINE
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Abstract:
The aim of the present study was to formulate and evaluate the Transdermal Drug Delivery System of a pain removal herbal drug. And to increase the efficacy and to improve the patience compliance of the herbal medicine which can be achieved by developing alternative drug delivery system. The polymers that were used for selected sustained release of drug are HPMC Ec and polyethylene glycol used as a plasticizer. Transdermal patches of herbal of turpentine extracts were prepared by solvent casting method. The patches were optimized on the basis of physicochemical evaluation such as thickness, folding endurance, physical appearance, uniformity of weight, moisture content and moisture uptake studies. The optimized formulations were further evaluated for the drug content, in vitro drug release, FESEM studies. The results of the study revealed that the herbal transdermal patch using the HPMC polymer showed the better physiochemical parameters such as thickness, folding endurance, physical appearance, uniformity of weight, moisture content and moisture uptake studies. The prepared formulations were found to be uniform with respect to thickness and folding endurance and showed the least moisture content and moisture uptake. The patches prepared using the 30 % w/v of plasticizer showed the higher drug release from the herbal transdermal patch than the 20 and 25 % w/v during the in vitro studies in 24 hrs.

Keywords: Transdermal patches; thickness; folding endurance; physical appearance; uniformity of weight; moisture content.
FORMULATION AND EVALUATION OF TRANSDERMAL PATCH OF PARACETAMOL

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Abstract:
Paracetamol is a safe and effective analgesic and antipyretic agent, and is one of the most widely used medications for infants and children. The formulations currently available have been designed for oral and rectal administration. However, they are not practical in young patients with vomiting and diarrhoea, or in those who refuse to take the full dose. An alternative route of administration would be a significant contribution to the paediatric pharmacopoeia. The aim of this study was to develop a new transdermal system for optional therapeutic administration of paracetamol in infants and children. In-vivo studies were carried out in animals using a transdermal system of high-loaded, soluble paracetamol in a hydrogel patch, which was also tested in-vitro for 8 h. Although the beneficial contribution of glyceryl oleate to the transdermal penetration of paracetamol seemed to be significant in-vitro, it was shown to be insufficient in-vivo. To improve the penetration of the drugs, eugenol and 10% ethanol were incorporated as absorption enhancers into the dermal patches. A few hours after application of the improved patches to rats, plasma drug concentrations were elevated to levels comparable with those obtained after oral and subcutaneous administration of a high dose of paracetamol. Since plasma drug concentrations did not reach a constant steady state (as a peak or plateau) during the short-term animal experiments, longer pharmacokinetic studies in conscious are necessary.

Keyword: Paracetamol; Transdermal system; pharmacokinetic studies.
Abstract:
Herbal Cosmetics are in rising demand in the world market as these are the priceless gift of nature with enhanced activity and lesser or no side effects. The concept of beauty and use of natural cosmetics is as primordial as mankind and civilization. Herbal cosmetics as the name suggests are natural and free from all the destructive artificial chemicals. The present work was aimed to formulate herbal lipstick by using various natural ingredients like concentrated juice of pomegranate juice, dried powder, lemon juice, coconut oil, bees wax, paraffin wax, strawberry essence, and vanilla essence and so on. The formulated herbal lipstick was evaluated and various parameters such as color, melting point, breaking point, force of application, surface anomalies, pH, skin irritation test and aging stability were determined and reported herewith.

Keyword: Herbal Lipstick, Pomegranate Juice; dried powder; lemon juice.
FORMULATION AND EVALUATION OF MEMORY BOOSTER SYRUP
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Abstract:
Cognitive deficits that present with many of neuropsychiatric conditions and/or alone as developmental deficit demand use of nootropics to boost cognitive abilities. Syrup is very popular dosage form memory boosters, ease of patient compliance. The objective of this study is to develop polyherbal memory booster syrup and evaluate the physicochemical parameter along with turbidity/ homogeneity was compared with the changes in accelerated stability testing. Quality of final herbal syrup was evaluated with the parameters: pH, density, total solid content. Three batches were formulated with simple syrup 40%, 50%, 60% w/v as sugar base. All the batches were evaluated for physicochemical parameters, colour, odour, taste, spec. gravity, pH, total solid content. i.e. Specific gravity). The formulated batches under gone stability studies and microbial test, no turbidity were observed for three months studies and no microbial growth were seen. All the batches assure the reproducibility and each parameter was complying with specifications.

Keyword: Shankhapushpi (Convolvulus pluricaulis Choisy, CP); Syrup; Specific gravity.
PREPARATION AND EVALUATION OF MICROSPHERES OF PARACETAMOL

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Abstract:
Microsphere drug delivery systems have used to improve patient compliance, decreases toxicity, and increase efficacy. Also, the use of microspheres to deliver drugs has many other merits, like control-release of the drug, increase bioavailability and target delivery of the drug to the desired site. In this research shows the utility of encapsulating hydroxypropyl methyl cellulos in biodegradable microsphere delivery system, to be delivered orally via a capsule, to gives desired therapeutic action. Microsphere formulations have advantage over conventional tablet or capsule formulations, since it increases the surface area exposed to the absorption site and thus increasing the absorption of the drug and decreasing the dosing frequency of the drug. Paracetamol is a non-steroidal anti-inflammatory agent which is used widely in various colon diseases ulcer and inflammation, pain and fever. Paracetamol shows maximum absorption in the lower gastrointestinal tract regions, and shows half life 4 - 5 h, it shows low bioavailability orally. The microsphere formulations were evaluated for its production yields, actual drug content, encapsulation efficiency, % Swelling Index release study is done by in vitro release analysis.

Keyword: Microsphere; Paracetamol; encapsulation efficiency; % Swelling Index release.
FORMULATION AND EVALUATION TRANSDERMAL PATCH FOR LIPOMA TREATMENT

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Abstract:
The purpose of this research was to develop a matrix-type transdermal therapeutic system containing drug neem oil and flex seed oil with different ratios of hydrophilic (hydroxyl propylcellulose) and hydrophobic (ethyl cellulose) polymeric systems by the solvent evaporation technique by using 15 % w/w of dibutyl phthalate to the polymer weight, incorporated as plasticizer. A lipoma is a slow-growing, fatty lump of harmless mass that is not cancer and most often situated between your skin and the underlying muscle layer. Usually, detected in middle age, lipomas can feel doughy and usually isn't tender, moves easily with slight finger pressure. The physicochemical compatibility of the drug and the polymers studied by differential. Formulated transdermal films were physically evaluated with regard to thickness, weight variation, drug content, flatness, tensile strength, folding endurance, percentage of moisture content and water vapour transmission rate. All prepared formulations indicated good physical stability. In-vitro permeation studies of formulations were performed by using Franz diffusion cells. Formulation prepared with hydrophilic polymer containing permeation enhancer showed best in-vitro skin permeation through rat skin (Wistar albino rat) as compared to all other formulations.

Keyword: TDDS; Lipoma; HPMV.
TUNEABLE DRUG RELEASE KINETICS OF Gefitinib USING SPRAY-DRIED PLGA BASED CO-POLYMER MICROPARTICLES
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Abstract:
Gefitinib (GEF), the anticancer drug being poorly soluble needs to be administered in high doses by the oral route. Hence there is a need to have alternate route for administration for GEF so that better bioavailability and therapeutic efficacy can be achieved. In this context and looking into the necessity of the technology for improvement in the chemotherapy regimens, a technology driven novel drug delivery of gefitinib was sought. Hence, the present study was undertaken to exhibit the pathway for understanding the drug release mechanism and drug release kinetics by 5 different types of PLGA based polymers. The polymers tested were PLA, PLGA, PLGA-mPEG, PLGA-PCL and PLGA-poloxamer copolymer. The execution of procedure was done by applying QbD based approach. The microparticles were prepared by spray drying technology. PLGA based microparticles showed the best-controlled release of GEF average release of 125 mg per day for 14 days. Findings indicated that increasing the PLGA fraction there was in decrease in GEF release from the microparticles, indicating better ability of the co-polymer to hold the drug in the MPs. The release data of all the microparticles were treated with Ritger-Peppas, Higuchi, Peppas-Sahlin, zero-order, and first-order kinetic models. Fickian contribution was 20 times that of relaxation. We can thus approximate all the copolymers based on PLGA MPs to follow Ficks law of diffusion. The best fit was observed with Peppas-Sahlin model for PCL based coplymer, indicating the drug transport mechanism was controlled by both Fickian diffusion and case II relaxations. In conclusion the mathematical modelling of drug release kinetics provided drug release mechanisms involved in the control of drug release.

Keywords: Gefitinib; PLGA-PCL and PLGA-poloxamer copolymer.
DIABETES COMPLICATION: THE POTENTIAL TARGET (ALDOSE REDUCTASE)

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Abstract:
Globally, Diabetes mellitus is a metabolic disorder and its complications are leading causes of death. According to diabetes prevalence around 47.3% of India’s 70 million diabetics people suffer from diabetes and that are not diagnosed and do not know they have high blood glucose levels that, if left untreated, lead to complications such as blindness, kidney failure, heart disease, stroke and foot amputation. Diabetes mellitus (DM) is a chronic metabolic disease affects wide range of population across the world and leads to the development of severe long term complications. Aldose reductase (AR, EC 1.1.1.21) plays a key role in the development of diabetic complications it is a rate-controlling enzyme in the polyol pathway and it produces elevated accumulation of cellular sorbitol leading to osmotic stresses on cells, and is then implicated mainly in microvascular damage to retina, kidney, and nerve systems. In the recent few years, the aromatic heterocyclic analogs derivatives have been found to be excellent scaffold for the ARI drug design, which led to a number of novel and potent inhibitors as promising drug candidates for the treatment of diabetic complications. The potential aldose reductase inhibitors (ARIs) are Tolrestat, Zopolrestat, Zenarestat and Ponarestat, Sorbinil etc. Furthermore, recent study has been showed that AR inhibitors may be able to prevent diabetic complications which show dual aldose reductase inhibitory and antidiabetic action as a significant effect and these have potential uses as therapeutic strategy in prevention of diabetes complications.

Keyword: Diabetes mellitus (DM); aldose reductase (AR); aldose reductase inhibitors (ARIs); diabetes complications and polyol pathway.
STEM CELLS IN CANCER THERAPY: OPPORTUNITIES AND CHALLENGES
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Abstract:
Metastatic cancer cells generally cannot be eradicated using traditional chemoradiotherapeutic or surgical strategies, and disease recurrence is extremely common following treatment. On the other hand, therapies employing stem cells are showing reducing risk in the treatment of cancer. Stem cells can function as novel delivery platforms by transplanting hematopoietic cells and targeting both primary and metastatic tumor foci. Stem cells extend survival in preclinical animal models. They have also been employed as nanoparticle and virus carriers to enhance primary therapeutic efficacies and relieve treatment side effects. Additionally, stem cells can be applied in regenerative medicine, and anticancer drug screening applications. However, while using stem cells to treat human cancers appears technically feasible, challenges such as tumorigenesis and treatment durability necessitate further study to improve therapeutic performance and applicability. This review focuses on recent progress toward stem cell-based cancer treatments, and concludes treatment opportunities, advantages, and shortcomings, potentially helping to refine future trials and facilitate the translation from experimental to clinical studies.

Keywords: Stem cell; targeted cancer therapy; tumor-tropic property; cell carrier
ANALGESIC ACTIVITY OF HYDROALCOHOLIC EXTRACT OF TAMARINDUS INDICA SEED COAT

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Abstract:
The aim of the present investigation is to evaluate the analgesic activity of ethanolic extract of Tamarindus indica seed coat on Wister albino rat. Analgesic activity of the ethanolic extract of Tamarindus indica (HAETI) seed coat at a dose of 350mg/kg & 500mg/kg was evaluated against the standard drug Pentazocine at a dose of 10mg/kg. Adult Wister albino rat of either sex was divided into 4 groups comprising six numbers in each group was undertaken for study and evaluated by tail flick method & hot plate method. The two doses of T. indica seed coat ethanolic extract was found to produce significant (p < 0.05 and p<0.01) analgesic activity. In tail flick method, the crude extract produced elongation of time 30 minutes after oral dose of 350 and 500 mg/kg body weight respectively. Test drug at a dose of 500mg showed better analgesic activity in comparison to 350mg dose by both the methods. So, it can be recommended for further studies.

Keywords: Analgesic; Tamarindus indica; Pentazocine; Ethanolic extract.
TRANSDERMAL DRUG DELIVERY SYSTEM: AN OVERVIEW
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Abstract:
Today 74% of drugs are taken orally and are found not to be as effective as desired. To improve such characters transdermal drug delivery system (TDDS) was emerged. Drug delivery through the skin to achieve a systemic effect of a drug is commonly known as transdermal drug delivery and differs from topical drug delivery. TDDS are dosage forms involve drug transport to viable dermal and epidermal tissues of the skin for local therapeutic effect while a very major fraction of drug is transported into the systemic blood circulation. The adhesive of the transdermal drug delivery system is critical to the safety, quality and efficacy of the product. Topical administration of therapeutic agents offers many advantages over invasive methods of drug delivery, conventional, and oral. Several important advantages of TDDS are limitation of hepatic first pass metabolism, maintenance of steady plasma level of the drug and enhancement of therapeutic efficiency. This article provides an overview of Transdermal patches, types of Transdermal patches, methods of preparation and its physicochemical methods of evaluation.

Keywords: TDDS; Topical drug delivery; Systemic blood circulation.
DIURETIC ACTIVITY OF HYDROALCOHOLIC EXTRACT PYRUS COMMUNIS FRUIT IN WISTAR ALBINO RATS

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Abstract:
Pyrus communis fruit belonging to family rosaceae. Pyrus communis mainly contains steroids, saponins, alkaloids, glycosides and phenolic compounds including terpenoids, flavonoids, anthocyanins and tannins were present. The present study was aimed to evaluate the diuretic activity of hydroalcoholic extract of leaves of Pyrus communis fruit in wistar rats. Diuretic activity of hydroalcoholic (70:30) extract of Pyrus communis (200 mg/kg and 300 mg/kg body weight orally) was studied in wistar albino rats (n=6). Furosemide (10 mg/kg) orally was used as the standard. Total 24 hours urine volume was measured using metabolic cages. The concentration of Na +, K + in the urine at the end of 24 hours was estimated. Data was analyzed by One-way ANOVA followed by Dunnet t test. Hydroalcoholic extract of Pyrus communis fruit showed a significant (P < 0.05) dose dependent increase in urine volume (8.1 ± 0.97ml/100g/24hr and 9.7±0.75 ml/100gm/24hr). At 300 mg/kg Hydroalcoholic extract of Pyrus communis fruits increased the excretion of sodium but decreased the excretion of potassium significantly compared to control. This preclinical study showed a potential diuretic activity but further studies regarding the mechanism of action is required to validate this finding.

Keywords: Pyrus communis; diuretic; furosemide; potassium sparing effect
MODERN LIFESTYLE AND EATING HABITS: PRO'S AND CON'S OF BOTH IN PREGNANT WOMEN

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Abstract
Today’s lifestyle is modernizing day by day including eating habits that have some advantages and some disadvantages too on an individual. Modern lifestyle is converting towards technical use for time saving an many more reasons, such as use of microwaves, mobile phones, etc. and eating habits going towards junk food consumption more and more. These modernizations in lifestyle do save time, make work easy but also do have many disadvantages including exposure to radiations, lack of physical workout leading to various diseases and obesity. Eating habits including junk foods and unhealthy food is just of taste and easily available but have a number of problems with it such as indigestion, lack of nutrients, intake of harmful chemical agents within the junk food leading to several diseases including infertility in both male and female, etc. As these things have a number of side effects on an individual, these do also affect a lot in pregnant women. There is a need to think over it to nourish the new life within a mother, not with todays eating habits but with proper nutrients and diets with no or minimal side effects. This review focuses on the changes in lifestyle and eating habits for pregnant women and need to assess the knowledge of pregnant women regarding nutritional aspects and provide them with information on maternal nutrition. Dietary intake of pregnant women does not appear to meet the dietary recommendations. Nutrition knowledge and practices of pregnant women and their antenatal care clinicians are factors that may be influential on dietary intakes of pregnant women. Nutrition is fundamental pillars of life and its requirement varies with respect to age, gender, and during physiological changes during pregnancy. Nutritional requirement increases during pregnancy can influence the growth, development and health of the mother and his newborn child. Nutritional knowledge is essential for developing effective strategies to curb malnutrition and encouraging healthier dietary behaviour. The nutrition and dietary recommends the following key components of healthy lifestyles during pregnancy: weight gain, eating a balanced diet, regular exercise and intake of nutritional supplements accordingly.

Keywords: Lifestyle; eating habits; inappropriate intake; nutritional requirements.
PHARMACY IN 21ST CENTURY: ENHANCING THE IMPACT ON URBAN HEALTH CARE

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Abstract
Pharmacy is a self-regulated health care profession. Each jurisdiction has an organization in place that is responsible for serving and protecting the public and to hold pharmacists and pharmacy technicians accountable to the established legislation, standards of practice, code of ethics and policies and guidelines relevant to pharmacy practice. While pharmacy is practised in diverse public and private settings, the for-profit community pharmacy sector employs a large proportion of pharmacists and technicians. In this rapid phase of urbanization urban Heath has emerge as one of the most significant health theme of decade in India. The increased proportion of urban and vulnerable population with specific focus on poor population living in listed and unlisted slum and other vulnerable such as homeless, ragpickers, street children face various social and financial barrier to accessing health. Various factors (social and financial) can affect the health of urban population and various disease which were caused by the barriers including both communicable and non communicable diseases. While urban health has been emphasized by various committees, there has been some effort made on national and state level by providing better health to urban population i.e. National Urban Health Mission (NUMS) in 2013 , AYUSH these were also developed to provide economic medicine to the population and to save history of old system of medicine. Some efforts were made to make people aware of social and schemes which were given to them. This article also include the urban poor from available urban facilities of pharmacy, multiple burden of disease, policies of urban health, factor of causes of diseases and precautions measures in urban area. Transformational change is needed by the profession of pharmacy in all practice settings to tackle the medication management needs of Urban population for the purpose of improving health outcomes. This is a tall order. If the profession of pharmacy does not make these changes, we risk becoming irrelevant. Substantial cultural, professional, technological, health care system and business shifts are required. Alignment of multiple stakeholders to focus on patient and population health outcomes is needed to stimulate transformation. Determining how patients can benefit from the expertise and services provided by pharmacists as care providers within an integrated care system presents an important and exciting opportunity for the pharmacy profession.

Keywords: Urban Health Care; Pharmacy; Pharmacist.
Abstract:
This review describes about the Recent Advancement in Tablets. In this we have studied about the different types of equipments and different forms of tablets with their history. In context to the history of tablets it is important to study about the process of manufacturing of tablets and its further development including the changes taken place in the advancement of tablets. As now a days tablets are preferred more as compared to other oral administration methods because they are easy to manufacture and easy to handle & they have more advantages than other oral administrative medicaments and also the formulation can easily be accepted by patients .The aim of the review study is to focus on the different method of preparation of tablets , advantages , disadvantages , different forms of tablets , evolution of tablets ( its history & development) and the reason behind being more significant than other oral administrative drugs .To satisfy the growing needs in market tablet dosage form have incorporated automation in manufacture and some advancement in tablet type. Modified release tablet formulation including layered tablets such as ; In lay tablets , bilayered tablets , medicated chewing gum , pellets , lollipop , tablet inserts , clinicaps , caplets , childs estasy tablets , tablet in tablet are some new entries in pharmaceutical markets. Versatile immediate release tablet system including fast dissolving drug delivery system , orally disintegrating tablets / orally dispersible tablets , orally dispersible mini tablets , mouth dissolving fast dissolving tablets , novel fixed dose combination tablets ACCU-BREAK technology inactive layer between two different drug layers ) , conventional effervescent , uncoated and film-coated tablets etc.Modified release tablet formulation including ring cap coated tablet ALZA , layered tablets , novel chewable sustained release tablet and direct medicated chewing gum. Compared to single unit dosage forms, tablets or mini tablets are good alternatives to granules and pellets. However, production parameters must be carefully assessed to sure a good flow, correct and complete filling of the die and damage to the equipment. They can be made into tablets or they can be filled with capsules or used as a sachet, which is advantageous both in terms of ease of production and cost. They increase patient compliance drugs with different release kinetics. They are suitable for most of drug molecule. Especially in geriatric and pediatric patient groups, there is a very high potentional for achieving success in treatment. Studies have shown that tablets adapt to a multitude of modified release patterns such as extended, delayed, pulsatile, bimodal release and colon targeting.

Keywords: Oral route; tablets; equipment; historical importance; tablet in tablet; caplets; geriatric and pediatric.
MOLECULAR MODELLING OF NOVEL PYRAZOLE DERIVATIVES AS POTENTIAL ANALGESIC AND ANTI-INFLAMMATORY AGENTS

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Abstract:
The study presents the effect of lengthening of carbon chain in different pyrazole derivatives bearing various amine moieties. Combination of pyrazoline ring with either pyrazole or quinoline rings (Floctafenine derivatives) through synthesis of chalcones and their cyclization into pyrazolines was involved. All the newly compounds were investigated for their anti-inflammatory and analgesic activities compared to Indomethacin as a reference drug. Docking and molecular modeling study was initiated to validate the attained pharmacological data and provide understandable evidence for the observed anti-inflammatory behavior of the most potent compounds through their various interactions with the active site of COX-2 isoenzyme. In this work, a total of 23 pyrazole derivatives were selected for molecular screening. Molecular docking analysis was carried out, using Molegro Virtual Docker 6.0. These molecules were selected based on the literature research on compounds with inhibitory activity against COX enzymes.

Keywords: Pyrazole; Chalcones; Analgesic; Anti-inflammatory; Docking
RECENT ADVANCES IN STEM CELL THERAPY
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Abstract:
Stem cells can be specialized in any type of body cell as it have high proliferative capacity and low immunogenic reactivity and their capacity to specialize in any type of body cell i.e. differentiated cells. Stem cells those can be used for tissue regeneration include mesenchymal stem cells, embryonic stem cells, and induced pluripotent stem cells. Stem cells now a days are used in treatment of diseases like Parkinson’s disease, Alzheimer’s disease, Cancer, Spinal cord injury, Multiple sclerosis, Chronic wounds, Diabetes, Sepsis, Graft versus host disease, and in genetic diseases also. In this poster we will focus on stem cell mediated suicide gene therapy and stem cells as delivery vehicles for oncolytic viruses.

Keywords: Stem cells; suicide gene therapy; delivery vehicles.
MOISTURE ACTIVATED DRY GRANULATION PROCESS (MADG)
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Abstract:
In this review we are going to study about the recent advancement in the “Moisture Activated Dry Granulation process“. As granulation is most important step in the formation of tablets. In this technology moisture content is used to minimize the amount of water used. The current article deals with in depth basic information about advance granulation method MADG. During granulation along with the in process variables that are influencing the granulation process and their respective determination. It was developed to overcome the difficulties faced in the wet granulations, in terms of end point, drying and mailing. It also overcome the bimodal problem i.e. too fine many or too many coarse particles (or both) in granulation process. Highlights the advantages and wide applicability of MADG process in solid dosage form.

Keywords: Moisture content, Dry Granulation, course particles, solid dosage form.
Abstract:
Regulatory agencies and organizations play a vital role to meet the requirements of legal procedures related to drug development process in a country. The major challenges of these regulatory agencies and organizations around the world are to ensure the safety, quality and efficacy of medicines and medical devices, harmonization of legal procedures related to drug development, monitoring and ensuring compliance with statutory obligations. They also play a vital role to ensure and increase regulatory implementation in non-regulated parts of the world for safety of people residing there. The present study describes a brief review of various regulatory bodies of major developed and developing countries and the scope and challenges of such regulatory organizations in drug development and delivery of safe and effective healthcare products to individuals around the world.

Keywords: Regulatory agencies; Harmonization.
HERBAL COSMETICS
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Abstract:
India is a focusing for the development of Ayurveda, Unani, Siddha, Homoeopathy and other natural herb based health science. Ayurvedic science have great possible and contingency for herbal cosmetic and cosmetics help in presenting and increaning the beauty and personality aspects of human beings and nature has offered the way to keep up this parity by the means of herbs. An herb is a plant or plant extract, including leaves, bark, berries, roots, gums, seeds, stems and flowers which are favour with nourishing and healing elements. So the use of herbs in cosmetic industries have efficacy and intrinsic acceptability due to routine use in daily life and avoid the adverse effects which are commonly seen in synthetic products. Recently the uses of botanicals in cosmetics have increased mainly due to the mild action and non-toxic nature. Cosmeceuticals have medicinal benefits which affect the biological functioning of skin depending upon type of functional ingredients they contain. These are cosmetic products that are not just used for beautification but for different skin ailments. These products improve the functioning/texture of the skin by boosting collagen growth by eradicating harmful effects of free radicals, maintains keratin structure in good condition and making the skin healthier. There are numerous herbs available naturally having different uses in cosmetic preparations for skincare, hair care and as antioxidants. The current review highlights importance of herbal cosmetics, the herbs used in them and their advantages over the synthetic counterparts.

Keywords: Ayurveda; Unani; Siddha; Homoeopathy and Natural Herb
ANTI HIV DRUGS
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Abstract:
Major advances have been made in our understanding of the pathogenesis of infection and the possible inhibition of the HIV virus. Various drugs targeted to the different steps of viral replication have been selected, but drugs such as soluble CD$_4$ or dextran derivatives aimed to inhibit or interfere with the GP$_{120}$-CD$_4$ attachment step have shown little or no clinical benefit. Protease inhibitors or interferons acting at the post-transcriptional level are currently under phase I to II investigation. The only group of compounds clinically active belong to the nucleosides analogues that act as DNA chain terminators and by inhibiting viral reverse transcriptase. Being the first nucleoside analogue discovered and used since early 1985, zidovudine remains the gold standard of anti-HIV therapy. Zidovudine is indicated at a dosage varying between 500 and 1000 mg in patients with AIDS, in asymptomatic patients with CD$_4$ < 200/mm$^3$ and in asymptomatic patients with CD$_4$ between 200 and 500 cells/mm$^3$ with a rapid decrease of CD$_4$ cell count. There is as yet no consensus concerning patients with more than 500 cell/mm$^3$. The best combination therapy should involve drugs acting at different sites of viral replication such as nucleosides analogues and protease inhibitors. The group of specific HIV$_1$ reverse transcriptase inhibitors has been disappointing. Poor bioavailability or very rapid emergence (after three weeks) of resistance have precluded the clinical use of TIBO-like or TIBO derivatives which were highly active in vitro.

Keyword: Anti HIV Drugs, CD4, TIBO
Abstract
In this research work a series of forty two phenothiazine derivatives was selected and hologram quantitative structure-activity relationship (HQSAR), comparative molecular field analysis (CoMFA) and comparative molecular similarity indices analysis (CoMSIA) methods were performed for their anti-malarial activity. The LOO cross-validated $q^2$ values of HQSAR, CoMFA and CoMSIA models were found to be 0.789, 0.785 and 0.716, respectively. The predictive ability of the developed models was confirmed further by a test set of fourteen compounds. The predicted pIC$_{50}$ values were in good conformity with the experimentally calculated pIC$_{50}$ 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 phenothiazine ring, bulky and hydrophobic group at R$_1$ and R$_2$ positions while presence of hydrogen bond donor group at R$_3$ position is favorable for anti-malarial activity. The results of CoMFA and CoMSIA are in good agreement with HQSAR results.

Keywords: CoMFA; CoMSIA; HQSAR; pIC$_{50}$ values.
MOLECULAR DOCKING ANTI ALZIEMERS ACTIVITY OF POTENT AND SELECTIVE (5-IMIDAZOL-2-YL-4-PHENYLPYRIMIDIN-2-YL) [2-(2-PYRIDYLAMINO) ETHYL] AMINE INHIBITORS OF GLYCOCEN SYNTHASE KINASE 3

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Abstract
In an effort to identify new antialzhiemers agents Molecular docking studies and antialzhiemers activity of potent and selective (5-imidazol-2-yl-4- phenylyrimidin-2-yl)[2-(2- pyridylamino) ethyl] amine inhibitors of glycogen synthase kinase 3 A novel derivative of (5-imidazol-2-yl-4-phenylyrimidin-2-yl)[2- (2- pyridylamino) ethyl] amine was selected from the literature for antialzhiemers activity as glycogen synthase kinase 3 inhibitors. in-silico studies using molecular docking methodology. The all selected compounds were sketched and energy minimized using Chem Draw ultra and Chem 3D ultra respectively. Further, the compounds were docked into glycogen synthase kinase 3 inhibitor (4RAO) using Molegro Virtual Docker Platform. One hundred thirty compounds were docked into the active site of glycogen kinase 3 inhibitor cavity and all of them found to have similar binding interactions of a co-crystallized ligand with 2-(1,3-benzodioxol-5-yl)- 5-[(3-fluoro-4-methoxybenzyl) sulfanyl]-1,3,4-oxadiazole. The binding interaction information derived from these molecules will be useful in future antidiabetic agent design. From the docking study, it was observed that ligands bind to the electrostatic, hydrophobic clamp formed by the residues Asp 76(B), Tyr 190(B), Tyr 80(B) and Lys 72(B) which play an important role for glycogen synthase kinase 3 inhibition. The binding affinity, grid calculation and RMSD percentage lower and upper parameters were calculated. Hence, the observable data indicated that, above compounds can serve as good leads for further modification and optimization in the of treatment of Alzhiemer.

Keywords: Molegro; Chemdraw; 3F7Z; moldock score; antialzhiemers; Molecular docking.
**DOSAGE FORM**

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**Abstract:**

Pharmaceutical dosage forms cover a broad range of formulation delivery platforms such as tablets, capsules, emulsion suspensions, depots, lozenges, spirit, ointments, gels, aerosols, pills, syrups, mixtures, parental dosage forms, transdermal dosage forms and solutions. Though there are a number of analytical techniques such as gravimetric and manual (i.e., grinding, shaking) sample preparation procedures available for pharmaceutical dosage forms analysis, the nature of the dosage form dictates the kind of analytical technique and sample preparation procedure to employ. The term unit dose can also sometimes encompass non-reusable packaging as well although the FDA distinguishes that by unit-dose "packaging" or "dispensing". Depending on the context unit dose can refer to distinct drug products packaged together, or to a single drug product containing multiple drugs and doses. The term dosage form can also sometimes refer only to the pharmaceutical formulation of a drug product's constituent drug substance and any blends involved. Depending on the route of administration, dosage forms come in several types. These include many kinds of liquid, solid, and semisolid dosage forms. Common dosage forms include pill, tablet, or capsule, drink or syrup, and natural or herbal form such as plant or food of sorts, among many others. Notably, the route of administration for drug delivery is dependent on the dosage form of the substance in question. A liquid dosage form is the liquid form of a dose of a chemical compound used as a drug or medication intended for administration or consumption. For example, persistent nausea, especially with vomiting, may make it difficult to use an oral dosage form, and in such a case, it may be necessary to use an alternative route such as inhalational, buccal, sublingual, nasal, suppository or parenteral instead. Additionally, a specific dosage form may be a requirement for certain kinds of drugs, as there may be issues with various factors like chemical stability or pharmacokinetics. And is thereby incapable of sufficiently reaching its therapeutic target destinations. The oral and intravenous doses of a drug such as paracetamol will differ for the same reason.

**Keywords:** Dosage form; Route of administration
Abstract: Tablet is a unit solid dosage form containing active ingredient with or without suitable excipient. These are most widely used dosage form. The main objective of the design and manufacture of the compressed tablet is to deliver orally correct amount of drug in the proper form over proper time and at desired location, so as to have suitable chemical integrity protected at the point of its action. The physical design, manufacturing process, and complete chemical makeup of the tablet can have a profound effect on the efficiency of the drug being administered. Poorly water soluble drugs are associated with slow drug absorption leading eventually to inadequate and variable bioavailability and nearly 40% of the new chemical entities currently being discovered are poorly water-soluble drugs. Based upon their permeability characteristics, the biopharmaceutics classification system (BCS) classifies such drugs in two major classes, i.e., Class I and IV. The BCS class II drugs are poorly water-soluble entities with high permeability. Most formulation strategies for such drugs are targeted at enhancing their fine dispersion at absorption level. Ibuprofen being poorly water-soluble drug known to demonstrate dissolution or solubility limited absorption. The bioavailability of the drug is low, yet its rate of absorption is quite inconsistent and delayed with time. Based upon its aqueous solubility and various dissolution parameters, the drug bioavailability can unambiguously be regarded as limited solely to dissolution. The main focus on moisture activated dry granulation method is better than other granulation method in case of poorly soluble drug tablets.

Keyword: Tablet; Pills; Paracetamol; Ibuprofen.