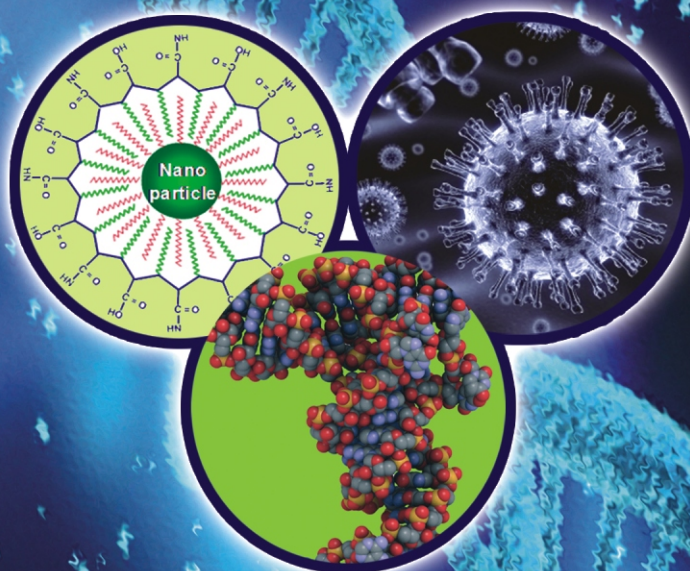


AICTE Sponsored
National Seminar
On
**EMERGING THRUST AREA OF PHARMACEUTICALS
IN THE FIELD OF NANOTECHNOLOGY**



7th March 2014



Organized by

BCDA COLLEGE OF PHARMACY & TECHNOLOGY

(BCDA Member's Benevolent Trust)

78, Jessore Road (S), Hridaypur, Barasat, Kolkata - 700 127
Phone: 033-25842665, Telefax: 033-25842433 / www.bcdapt.com
E-mail: bcda_principal@yahoo.co.in / principal@bcdapt.com
Venue: BCDA College of Pharmacy and Technology, Campus-II
Ghoshpara, East Udaypur, Madhyamgram, Kolkata - 700 129

AICTE sponsored National Seminar

On

**“EMERGING THRUST AREA OF
PHARMACEUTICALS IN THE FIELD OF
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7th March, 2014

Venue:

**BCDA College of Pharmacy and Technology, Campus-II
Ghoshpara, East Udayrajpur, Madhyamgram, Kolkata- 700 129**

Conference proceedings

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**“EMERGING THRUST AREA OF
PHARMACEUTICALS IN THE FIELD OF
NANOTECHNOLOGY”**

Content

- ❖ Programme Schedule
- ❖ Organizing Committee
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- ❖ Plenary Lectures
- ❖ Abstract for Poster Presentation

Programme Schedule:

Date: 7th March, 2014

09.00 AM 10.15 AM:	Registration
10.30 AM	Inauguration of the Programme by: Prof. B. K. Gupta, Chairman, Governing Body, BCDA College of Pharmacy & Technology, Kolkata.
10.40 AM	Welcome address by: Dr. N. N. Bala, Principal, BCDA College of Pharmacy & Technology, Kolkata.
10.50 AM	Address by: Chairman, Governing Body, BCDA College of Pharmacy & Technology, Kolkata.
11.00 AM	Tea break

Scientific Session-I

11.30 AM	Key note address by: Dr. D. Rambhau, Director (Technical), Nanoceutica Laboratories, A division of Pulse Advanced Research Centre (PARC), Hyderabad, India.
01.00 PM	Lunch Break

Scientific Session-II

02.00 PM	Key note address by: Dr. Alekha K. Dash, R.Ph., Ph.D., School of Pharmacy Sciences, Creighton University, Omaha, NE 68164, USA.
03.00 PM	Scientific Poster Presentation Session
04.00 PM	Announcement of best papers selected and prize-giving ceremony
04.10 PM	Vote of Thanks

Organizing Committee

Chairman

Prof. B. K. Gupta,
Chairman, Governing Body
BCDA College of Pharmacy & Technology

Organizing Secretary

Prof. (Dr.) N. N. Bala
Principal
BCDA College of Pharmacy & Technology

Convenor

Dr. Gouranga Nandi
Associate Professor
BCDA College of Pharmacy & Technology

Joint Convenor

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Dr. (Mrs.) Sailee Chowdhury, Assistant Professor, BCDACPT, Kolkata
Mr. Seemanchala Rath, Assistant Professor, BCDACPT, Kolkata

Advisor

Dr. Amit Shankar Dutta
Principal, BCDA College of Pharmacy & Technology, Campus II

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Mr. Sudipta Chakraborty, Assistant Professor, BCDACPT, Kolkata
Mr. Partha pratim Mahata, Assistant Professor, BCDACPT, Kolkata
Mr. Milan Kumar Maiti, Assistant Professor, BCDACPT, Kolkata

Registration committee

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Mr. Milan Kumar Maiti, Assistant Professor, BCDACPT, Kolkata
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Mr. Partha pratim Mahata, Assistant Professor, BCDACPT, Kolkata
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Mr. Partha pratim Mahata, Assistant Professor, BCDACPT, Kolkata
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Mr. Milan Kumar Maiti, Assistant Professor, BCDACPT, Kolkata
Mr. Tapan Sarkar, BCDACPT, Kolkata.

Abstract Book Committee

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Mr Habibul Islam Mallick, Laboratory Technician, BCDACPT, Kolkata.
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Miss Priyanka Chakroborty, Assistant Professor, BCDACPT, Kolkata
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Mrs Chaitali Majumder, Laboratory Technician, BCDACPT, Kolkata
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Student members

Scientific and Poster Session Committee

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Abhishek Singh	Sandip Mondal
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Swagatam Saha	Ayan Hazra
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Subham Dutta Banik	Shubham Baidya
Sudhir Singh	

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Dola Rani Saha	Amrita Roy
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Registration Committee

Shilpi Sarbadhikari	Biplab Mallick
Sasmita Saha	Somnath Jana
Dolly Singh	Ashim Kundu
Ajeya Samanta	Anik Biswas



Message

I am delighted that the BCDA College of Pharmacy and Technology has within a short period of eight years of its glorious existence has emerged as a center of excellence in Pharmaceutical Sciences and Technology. Several passed out graduates have made their mark in the country and abroad. Four of our faculty members have already earned their Ph. D. degree. Few more are in the pipe line. Faculty members have also published a number of original research papers in national and International journals of repute. This was possible due to the support of the management and team work of teachers and non-teaching staff of the college.

It is appropriate, therefore, that the college is organizing “1st NATIONAL SEMINAR – EMERGING THRUST AREA OF PHARMACEUTICALS IN THE FIELD OF NANOTECHNOLOGY”. The seminar is co-sponsored jointly by the AICTE and patronized by the BCDA Members’ Benevolent Trust.

The seminar would be attended by teachers, research scholars and students of several Pharmacy colleges of the country.

Experts of proven ability would be delivering their lectures on the topic of deliberation.

I wish the seminar all success.


(Professor B. K. Gupta)

Former Head- Department of Pharmaceutical Technology,

JADAVPUR UNIVERSITY &

Chairman, Governing Body, BCDA College of Pharmacy and Technology



ESTD 1921



B. C. D. A. Members Benevolent Trust

12, Bonfield Lane, 1st Floor, Kolkata-700 001
Ph. : 2242 8944, 2210 4537 / 9145, Telefax : 033-2243 3603

Date: 25.02.2014

MESSAGE

It is my pleasure that BCDA College of Pharmacy and Technology is going to organize a national seminar on "Emerging Thrust Area of Pharmaceuticals in the Field of Nanotechnology" on 7th March, 2014 at BCDA College of Pharmacy and Technology, campus-II, Ghoshpara, East Udayrajpur, Madhyamgram, Kolkata-700 129.

I am sure that this seminar will provide a right forum for extensive interaction of the participants and also exchange of ideas and sharing of experience between the experts from the academics, research institutions and industries in light with the current trends of pharmaceuticals in the field of nanotechnology.

I welcome heartily all the delegates and participants on behalf of BCDA Members' Benevolent Trust and BCDA College of Pharmacy and Technology in this seminar.

I congratulate the members of the organizing committee of this event for their noble mission.

I wish the seminar a grand success.

(Shib Sankar Nagarkar)

Managing Trustee

BCDA Members' Benevolent Trust

Managing Trustee

BCDA Members Benevolent Trust

10, Bonfield Lane, Kolkata - 700001

যাদবপুর বিশ্ববিদ্যালয়

Professor Abhijit Chakrabarti

VICE-CHANCELLOR

অধ্যাপক অভিজিৎ চক্রবর্তী
উপাচার্য



*JADAVPUR UNIVERSITY
KOLKATA-700 032, INDIA

OFFICE OF THE VICE-CHANCELLOR : AUROBINDO BHAVAN ANNEXE

Date : February 27, 2014

MESSAGE

It gives me great pleasure to know that the BCDA College of Pharmacy & Technology is going to organize the 1st National Seminar on "Emerging thrust area of pharmaceuticals in the field of nanotechnology" on March 07, 2014.

I strongly believe that the seminar will provide a platform for exchange of information and expertise on present practices related to the topic in India with a universal viewpoint. On my personal behalf, I convey my best wishes for the occasion and I believe that many eminent professionals in the relevant field will grace the occasion.

I congratulate the entire organizing team for their sincere efforts in making this event take shape and wish them a grand success.


(Abhijit Chakrabarti) 27/2

*Established on and from 24th December, 1955 vide Notification No. 10986-Edn/TU-42/55 dated 6th December, 1955 under Jadavpur University Act, 1955 (West Bengal Act XXXIII of 1955) followed by Jadavpur University Act, 1981 (West Bengal Act XXIV of 1981)

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**B. C. D. A. College
of Pharmacy
& Technology**

Approved by A.I.C.T.E., P.C.I. New Delhi and
affiliated to W.B.U.T., Kolkata

PROF. DR. N. N. BALA
M. Pharm., Ph.D., D.H.E., PGDBA
Professor & Principal



From the desk of the Organizing Secretary

I am delighted to write up that the 1st National seminar of our College is scheduled on 7th March 2014. The title of the seminar is "EMERGING THRUST AREA OF PHARMACEUTICALS IN THE FIELD OF NANOTECHNOLOGY". We are arranging seminar regularly since 2006 once in a year with an exception of this 2013-14, in this session we are to arrange at least three including this national seminar. In the recent years nanotechnology has put huge impact in Biotech, Pharmaceutical and Medical diagnostics sciences all over the world specially in developing sophisticated medicine and patient care. This seminar will provide an opportunity to the researchers, teachers, students and others a platform for interaction in between the experts and participants in order to exchange their views and ideas about the scope of nanotechnology in pharmaceuticals, drug delivery and diagnosis.

We are really proud that we got two international reputed speakers to deliver on the topic. One of the speaker is Dr. D. Rambhau, Director (Technical), Nanocutica Laboratories, A division of Pulse Advanced Research Centre (PARC), Hyderabad, India, and the other speaker is Prof. (Dr.) Alekha K Dash, Deptt. Of Pharmaceutical Science, Chair: Nano Division, Creighton University, California, USA.

This opportunity will be utilized by the entire delegate for their area of interest. I also firmly believe this seminar will encourage our faculties and students to develop their further interest in research area.

I am confident that it will add another feather to the cap of BCDA College of Pharmacy & Technology for advancing its mission to make our College as "Centre of Excellence in the Pharmaceutical Education".

At last but not least, I hope that our endeavor for arrangement of more and more such seminar and symposia will have the better momentum.

Best wishes to the entire team of the organizing, other committees and authority of the BCDA and BCDA College of Pharmacy & Technology.


Dr. N. N. Bala

Place: College Campus

Hridaypur, Kolkata-700 127

Principal & Organizing Secretary
BCDA College of Pharmacy & Technology

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FROM THE DESK OF THE CONVENOR

It gives me immense pleasure to welcome you all to the 1st National Seminar, 2014 on "Emerging Thrust Area of Pharmaceuticals in the Field of Nanotechnology" being organized by BCDA College of Pharmacy and Technology, 78, Jessore Road (S), Hridaypur, Barasat, Kolkata-700127 on 7th March, 2014 at the second campus of BCDA College of Pharmacy and Technology, Ghoshpara, East Udayrajpur, Madhyamgram, Kolkata-700129.

Nanotechnology is on its way to make a big impact in Biotech, Pharmaceutical and Medical diagnostic sciences. A dynamic collaboration is observed within the Researchers, Government, Pharmaceutical - Biomedical companies and educational institutions all over the world in developing the nanotechnology based applications in advanced medicine and patient care. It is expected that the forthcoming generations of nano-products will have target specificity, may carry multiple drugs, and could potentially release the payloads at varying time intervals. Pharmaceutical education in India is also taking significant steps in incorporating news and views in nanotechnology and its applications in pharmaceutical scenario through seminar, workshop and symposium. Nanomedicine, the application of nanotechnology to health, raises high expectations for millions of patients for better, more efficient and affordable healthcare and has the potential of delivering promising individualistic solutions to many illnesses. Research in nanomedicine will allow for a better understanding of the functioning of the human body at molecular and nanometric level and it will thus give us the possibility to intervene better at pre-symptomatic, acute or chronic stage of illnesses. The promising possibilities that nanomedicine might offer in the future have to be counterweighed against possible risks of this new technology. It is of utmost importance to examine upfront with care and responsibility its possible side effects to human beings and negative impact on the environment.

The purpose of this seminar is to acquaint the faculty members, researchers and students of different institutions to improve their knowledge base in the frontline thrust area of research.

I am sure the interactive deliberations by the resource persons as well as the scientific presentations of the delegates will unlock a new horizon of exploration and developments in the field of nanotechnology based drug delivery systems and make the seminar successful.

I am greatly thankful to all the members of organizing committee for their active and intensive effort towards making the seminar successful.

Thanking you,

Gnandi 28.02.2014

(Dr. GOURANGA NANDI)

Convenor

Organizing committee

1st National seminar, 2014

"Emerging Thrust Area of Pharmaceuticals in the Field of Nanotechnology"

7th March, 2014

Plenary Lecture-I



by

Prof. (Dr.) Devraj Rambhau

Director (Technical)

Nanoceutica Laboratories

A division of Pulse Advanced Research Centre (PARC)

Hyderabad, India

Nanoparticulate Delivery Systems for Poorly Water Soluble Nutrients and Nutraceuticals

Many clinical studies have shown depletion of essential & micronutrients in a biological system due to chronic disorders viz. diabetes, cardiovascular disease, cancer, asthma etc. Besides controlling, such disorders using proper medications prescribing nutraceuticals as an adjunct therapy is advocated in recent years for improved efficacy of the drug therapy, to tone down the side effects of drugs & to replenish the nutrients. Thus, therapeutic nutrition is gaining importance. However many of the essential nutrients like lipophilic vitamins, antioxidants, electrolytes and other biogenic substances suffer from the problem of poor absorption either due to their poor water solubility and/or due to limited permeability. Such problems of nutrients can be addressed using Nanotechnology. The field Nanoparticle delivery system for nutrients and nutraceuticals have been expanding almost exponentially over the last decade. Currently the market of nanotechnology products in food industry. Approaches USD 1 Billion and it is projected to grow USD 20 Billion by next decade. The lecture would unveil the potential of nanotechnology in therapeutic nutrition. It will illustrate the techno-economical merits of nanocarriers from the point of view of production, quality control and marketing. Few illustrations delineating nutrient nanoproducts will be discussed to enlighten the importance of nanoparticulate delivery systems in nutritional arena.

Biography:

Prof. Rambhau is now working as Director (Technical) in Nanoceutica Laboratories, a division of Pulse Advanced Research Centre (PARC), Hyderabad, India, where he is leading a dedicated research group in the area of nano drug delivery research. He served in Kakatiya University for 25 years holding several positions like H. O. D., Principal, chairman, Board of Studies, in-charge- Vice Chancellor etc. He also received several prestigious honours and awards like Prof. G. P. S. Memorial Life Time Achievement award, Best Teacher Award, Kakatiya University research Promotion Gold Medal etc. He published several research papers in national and international journals of repute. Previously for six years he worked as advisor- NDDS at Natco research centre, Natco Pharma Ltd, Hyderabad. During this tenure he was engaged in proposing delivery strategies for anti cancer agents using liposomal and albumin bound nanoparticulate technology platform. He was instrumental in developing this technology from R& D to production scale. Besides, he has given several inputs for their quality control and protocol designing for in vivo testing at preclinical and clinical levels. For a short period of six months, he was consultant to Relisys India to design nanoparticle coated stents. Two nanotechnology based anticancer products developed by him are in pipeline for release into Indian/ International market. ALBUPAX is the first nanotechnology based anticancer drug (PACLITAXEL) from India and first generic version of ABRAXANE, USA. DOXNAT is second PEGylated nano-liposomal product of doxorubicin from Indian Pharma Industries and is the generic version of DOXIL (CAELYX). His interest includes liposomal and nanotechnology based drug delivery systems, chronopharmacokinetics, dissolution, bioequivalency testing of Pharmaceutical suspensions.

Plenary Lecture-II



By

Prof. Alekha Dash, R. Ph., Ph D

Professor

Department of Pharmacy sciences
School of Pharmacy and health Professions
Creighton University, Omaha, NE, USA

Physiological Principles of Nanomedicine

Nanosized materials have been extensively used in pharmacy and medicine for several decades. These materials do behave differently as compared to low molecular weight drugs because of their relevant physiology, anatomy and surface characteristics. Biodistribution, transport through tissues, phagocytosis, opsonization and endocytosis of nanosized materials have an impact on their potential use and toxicity. These unique properties and challenges of various nano particles in the treatment of breast and lung cancers will be evaluated and compared.

Biography:

Alekha K. Dash, a Professor of Pharmacy Sciences, joined Creighton University in 1990. He has served as interim chair of Pharmacy Sciences since 2004. Dash is actively involved in research. His interests include design and evaluation of novel drug-delivery systems, particularly nano-delivery systems; pre-formulation studies; solid-state characterization of drugs and dosage forms; pharmaceutical analysis; and evaluation and design of dosage forms for nutraceuticals and dietary supplements. A prolific writer, Dash has published more than 40 articles in peer-reviewed publications and written chapters for a number of textbooks. He holds one patent and has two others pending. Dash earned Bachelor's and Master's degrees in pharmacy in 1981 and 1983 from Jadavpur University in Calcutta, India. In 1990, he received a Doctor of Philosophy in Pharmaceutics from the University of Minnesota, Minneapolis. USA. Dash serves on the board of the American Red Cross Heart Land Chapter and is chair of the American Association of Pharmaceutical Scientists' Awards Committee (Analysis and Pharmaceutical Quality section). He is the honorable member of deferent professional bodies such as American Association of Pharmaceutical Scientist, AAPS Education Committee (1996-1998), etc. He is the member of editorial board of various international journal of repute. He received different awards an honors like WHO's WHO in the world (1997), Excellence in Teaching Award from School of Pharmacy & Allied Health Professions etc.

*Abstract
for
Poster Presentation*

BCDACPT/NS-001

POLYMERIC NANO-SUSPENSIONS TO TARGET DELIVERY OF POORLY WATER-SOLUBLE DRUGS

Sarthak Adhikari*, Arijit Gandhi, Sougata Jana

Department of Pharmaceutics, Gupta College of Technological Sciences, Asansol-713301, W.B., India

Abstract:

Nanosuspensions are unique liquid sub-micron colloidal dispersions of nanosized pure drug particles that are stabilized by a suitable polymer and/or surfactant and have a particle size of 11000 nm. Nano-suspension has been successfully used to target drug delivery, improve bioavailability, sustain drug release, and increase dissolved drug levels for hydrophobic compounds. A nano-suspension platform is an efficient and intelligent drug delivery system for water-insoluble drugs because these platforms increase the saturation solubility and the surface area available for dissolution. The biopharmaceutical advantages of water insoluble drugs formulated as nanosuspensions include improvements in formulation performance, such as high drug loading, reproducibility of oral absorption, improved dose-bioavailability proportionality, reduced toxicity and side effects, and increased patient compliance via a reduction in the number of oral units. This review article describes the nano-suspension to achieve targeted delivery of water soluble drugs.

Keywords: Nano-suspension, poorly water soluble drugs, target delivery

BCDACPT/NS-002

EPIDERMOLYSIS BULLOSA: A REVIEW

Somnath Surai*, Saptarshi Panigrahi, Kamalika Mazumder

BCDA College of pharmacy and technology, 78, Jessore Road (S), Hridaypur, Kolkata 700127, India.

Abstract:

Epidermolysis bullosa (EB) is an inherited connective tissue disease that have common features like blisters, friction and fragility formation at variable zone in skin depending on the specific EB type. However oral debilitation as a result of soft tissue scarring is primarily limited to the *recessive dystrophic EB* subtype. Generalized enamel hypoplasia appears is limited to functional EB, *although rampant dental caries is associated with many individuals having generalized recessive dystrophic EB*. Another rare type known as epidermolysis bullosa acquisita, is an autoimmune disorder. Alopecia, Malia, tooth decay, cough, hoarse cry etc is the symptoms of EB disorder. Genetic test include skin biopsy, blood test, upper endoscopy and growth rate test for new born baby will be done to diagnose EB. Treatment of EB aims mainly at preventing complication and easing discomfort from blistering. While systemic treatment remains primarily palliative, it is possible to prevent destruction and subsequent loss of dentition through appropriate interventions and dental therapy. Use oral steroid medicines for short period for throat infected patient. Skin grafting is placed where sores are deep. For prevention of EB talk to obstetrician & genetic counselor to prevent skin damage and blistering. Wear padding around injury prone areas such as the elbows, knees, ankles & sports should be avoided. Along these maintain healthy diet & vitamin D supplements.

Key words: Connective tissue, Dystrophic EB, Blister, Skin grafting

GOLD NANOPARTICLES: A LATEST APPROACH IN CANCER THERAPY

Sandipan Sarkar*, Dipna Karmakar

Department of Pharmaceutics, NSHM College of Pharmaceutical Technology, NSHM
Knowledge Campus, Kolkata-Group of Institutions 124 B L. Saha Road, Kolkata 700 053

Abstract:

Gold nanoparticles can play a pivotal role in the rapidly developing field of pharmaceutical technology with several potential applications in diagnosis of disease and targeted chemotherapy. Due to their unique size-dependent properties, and multifunctionality they can be integrated with ligands, imaging labels, therapeutic agents and other functionalities for site specific drug delivery and cellular uptake. **Gold nanoparticles are prepared and conjugated with many functionalizing agents, such as polymers, surfactants, ligands, dendrimers, drugs, DNA, RNA, proteins, peptides and oligonucleotides.** They have advantages over other metal nanoparticles due to their biocompatibility and specific cytotoxicity towards the cancer cells. Cancer nanotechnology is an interdisciplinary area with broad potential applications of gold nanoparticles in fighting cancer, including molecular imaging, molecular diagnosis, targeted therapy, and bioinformatics. The gold nanoparticle-based cancer therapy has been used in photothermal therapy for the destruction of cancer cells or tumor tissue, which may be potentially useful in the clinical setting. Various metal-based- anticancer drugs are available which cause non-specific necrosis. However, gold nanoparticles can cause the necrosis only to cancerous cells which results in increased efficiency of anticancer drug. A multifunctional platform based on gold nanoparticles, with multiple receptor targeting, multimodality imaging, and multiple therapeutic entities, holds the promise against cancer.

RECENT ADVANCES OF NANOPARTICLE-BASED TRANSDERMAL DRUG DELIVERY

Sanjib Das*, Sougata Jana

Department of Pharmaceutics, Gupta College of Technological Sciences, Asansol-
713301, W.B., India

Abstract:

Now a day, nanoparticles have shown great potential as novel drug carriers for transdermal drug delivery. Nanoparticle delivery to the skin is being widely used to facilitate local therapies. The smaller size of nanoparticles could ensure close contact with the stratum corneum and increases the encapsulated drug amount penetrating into the skin. The advantages of the use of these kinds of colloidal carriers are protection of unstable drugs from degradation and control of drug release rate from these colloidal carriers. Nanoparticles are solid particles ranging in size, 11000 nm. Presently, polymeric nanoparticles have received lots of attention due to their stability and ease of surface modification specificity. Transdermal drug delivery systems are prepared to deliver drugs through skin at predetermined rate escaping the first-pass effect by liver. The most difficult aspect of transdermal drug delivery system is to overcome the skin barrier. There is evidence that the

rate-limiting step in transdermal transport occurred at the outermost layer of the skin, stratum corneum. Nanotechnology is one of the approaches to have been investigated to enhance the drug permeation through the barrier of skin for the use in transdermal drug delivery. This review article we give an overview of nanoparticle and its transdermal drug delivery applications

Keywords: Nanoparticle, Skin, Drug delivery

BCDACPT/NS-005

CRACKING DOWN ON COUNTERFEIT DRUG A BRIEF REVIEW

Madhuri Biswas*, Poushali Ganguly, Susmita Bose, Sailee Chowdhury

B.C.D.A College of Pharmacy And Technology, 78 Jessore Road, Hridaypur, Kolkata-700127

Abstract :

A counterfeit medication is one which is deliberately and frequently mislabeled with respect to identity and / or source. It can be applied to both generic and branded products. Drugs which are easy to manufacture, present over the counter, fast moving, and belongs to a well known brands are mostly counterfeited. Counterfeited drugs are mostly manufactured by adding no active ingredients, and sometimes, also by adding the wrong ingredient and no proper ingredient. It have a huge effect on the Ethical issues, Industries, on government and on consumers. Counterfeited drugs are identified by altered expiry date, tampered packaging, altered labels and by comparing the shape, size, colour, weight of the drugs. certain devices are also there to detect counterfeited drugs like pharmacheck device. WHO has established the RAPID ALERT SYSTEM to minimize the adverse impacts of the counterfeited medicines. The INTERNATIONAL MEDICAL PRODUCTS ANTI-COUNTERFEITING TASKFORCE (IMPACT) also aims to put a stop to the deadly trade in fake drug. Hence increasing the safety and security of the nations drug supply and protecting it from increasing sophisticated threat of counterfeited drug is critically important.

Keywords: Mislabeled, Fake, Generic, Branded.

BCDACPT/NS-006

INSULIN DELIVERY METHODS: CURRENT AND FUTURE TRENDS

Amit Saha*, Koyel Kar

BCDA College of Pharmacy and Technology, 78, Jessore Road (S), Hridaypur, Barasat, Kolkata 700127, India.

Abstract:

Relatively, a large percentage of world population is affected by diabetes mellitus out of which approximately 5-10% with type 1 diabetes while the remaining 90% with type 2. Diabetes mellitus is a metabolic disease characterized by hyperglycemia arising as a consequences of a relative or absolute deficiency of insulin secretion, resistance to insulin action or both. It is of two types- Type 1 and Type 2. Insulin is a key player in the control of hyperglycemia for type 1 diabetes patients and selective individuals in patients of type 2

diabetes. Insulin is a peptide hormone produced by beta cells of the pancreas. Insulin delivery systems that are currently available include oral insulin, insulin syringes, insulin infusion pumps, jet injectors and pens. The traditional and most predictable method for the administration of insulin is by subcutaneous injections. The major drawback of current forms of insulin therapy is their invasive nature. To decrease the suffering, the use of supersonic injectors, infusion pumps, sharp needles and pens have been adopted. The newer methods explored include the artificial pancreas, insulin inhalers, mouth sprays, pills, skin patch, implantable pumps, transdermal insulin and buccal and pulmonary routes. This review focuses on current and future trends of Insulin delivery system.

Key words: Diabetes, Insulin therapy, Insulin delivery systems, Oral insulin, Transdermal insulin.

BCDACPT/NS-007

BIOEQUIVALENCE TEST BETWEEN LAB SCALE & SCALE UP PRODUCTION OF RISUG[®]

Anurup Mukhopadhyay^{1*}, Sujoy K. Guha²

1. Department of Pharmacology, Bengal School of Technology

2. School of Medical Science & Technology, Indian Institute of Technology,
Kharagpur.

Abstract:

RISUG[®] (Reversible Inhibition of Sperm Under Guidance), a novel injectable male contraceptive, is basically a viscous mixture of a copolymer Styrene Maleic Anhydride (SMA_{AN}) & Dimethylsulphoxide (DMSO) in 1:2 ratio (60mg of SMA_{AN} in 120μl of DMSO).

RISUG[®] is injected into male vas deferens by a no scalpel one shot injection method. Inside the lumen of vas deferens, RISUG[®] forms a net like structure & the polyelectric mosaic of the surface of RISUG[®] disturbs the surface of sperms resulting into acrosomal reaction & release of acrosin & hyaluronidase. One shot of injection guarantees minimum 10 years of infertility & one shot of injection of sodium bicarbonate solution in vas deferens can restore fertility within 15 minutes. On the other hand, RISUG[®] gets converted into by products like Styrene Maleic Acid (SMA_{AC}) & mandelic acid inside vas deferens which are thought to be having entry inhibitory roles against HIV infection. Self assembly for nanoliposome formation by RISUG[®] inside the body leads towards cure of Prostatic Hyperplasia also.

RISUG[®] gets produced in IIT, Kharagpur in lab scale & upscale under two different manufacturing set-ups. Thorough animal studies, some microscopic studies; like Makler Chamber counting, High Resolution Transmittance Electron Microscopy (HR-TEM) along with some important chemical studies like; Fourier Transform Infrared Spectroscopy (FTIR), UV spectroscopy, Raman spectroscopy, Nuclear Magnetic Resonance Spectroscopy (NMR), Zeta Potential Analysis have been done & planned to be done to bring about the bioequivalence test between lab scale & scale up production of RISUG[®].

Keywords: Bioequivalence, Nanoliposome.

BCDACPT/NS-008

NANOTECHNOLOGY: IN FUTURE MEDICINE

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Abstract:

The human characteristics of curiosity, wonder and ingenuity are as old as mankind. Nanotechnology is an exciting new area in science, with many possible applications in Medicine. Nanotechnology holds great potential as an enabler of a wide range of biotechnologies that will change the face of medicine and may eventually alter the very definition of Human Health. Growing interest in the future medical application of Nanotechnology is leading to the emergence of a new field called nanomedicine. Interestingly pharmaceutical sciences are also using Nanoparticles to reduce toxicity and side effects of drugs. The potential to cross the Blood Brain Barrier (BBB) has opened new ways for drug delivery into the brain. In addition, the nanosize also allows for access into the cell and various cellular compartments including the nucleus. Nanoparticles have also been considered to have the potential as novel intravascular or cellular probes for both diagnostic and therapeutic purposes (drug/gene delivery), which is expected to generate innovations and play a critical role in Medicine. Nanotechnology is destined to become the core technology underlying all of 21st century medicine.

Keywords: Nanotechnology, Nanomedicine, nanoparticles, Cellular Probes, Blood Brain Barrier (BBB).

BCDACPT/NS-009

LIPOSOMAL DRUG DELIVERY SYSTEM

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Abstract:

The main objective of this review is to focus on Liposomes as a potentially targeted drug delivery carrier. Liposomes *may be useful to reduce adverse effect of different toxic drug, specially cytotoxic anti cancer drug*. It is suitable for delivery of hydrophobic, hydrophilic and amphipathic drugs and agents. It is chemically and physically well characterized and is bio-compatible. Liposomes are suitable to give localized actions in particular tissues. In Liposomal drug delivery system, the lipid bilayer of the liposome can fuse with the other bilayers, thus delivering the liposome contents. The task of avoiding undesirable drug actions on normal organs and tissues and minimizing side effects of the therapy is very important. Thus, screening of biologically active compounds became necessary, permitting the choice of drug with selective action on the appropriate organs or tissues. A liposome is an artificially prepared vesicle composed of a lipid bilayer. The liposome can be used as a vehicle for administration of nutrients and pharmaceutical drugs. Liposomes can be prepared by disrupting biological membranes such as by sonication.

Liposomes are composed of natural phospholipids, and may also contain mixed lipid chains with surfactant properties. A liposome design may employ surface ligands for attaching to unhealthy tissue. The major types of liposomes are the multilamellar vesicle (MLV), the small unilamellar vesicle (SUV), and the large unilamellar vesicle (LUV). Long circulating liposomes incorporating SOD are superior to conventional liposomes in terms of anti inflammatory activity.

Keywords: Liposome, Hydrophobic.

BCDACPT/NS-010

A REVIEW ON TRANSGENIC PLANTS

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Abstract :

The present paper reviews transgenic plants, its various gene transfer techniques and applications. Transgenic plants or genetically modified plants are plants whose DNA is modified using genetic engineering techniques. There are two methods of transferring genes which have advantages and limitations. These plants have genes inserted into them that are derived from another species which can come from species within the same kingdom or between kingdoms. The process is done in laboratory, so called Genetic engineering technique. Transgenic plants have various applications like pest resistant crop, diseases or environmental condition resistance, herbicide resistant crop, crops with improved nutritional quality and the production of peptides, proteins, enzymes and vaccines, generation of antibodies & antibody fragments in plant, modification of biogenetic pathways by manipulation of plant metabolism for the production of novel secondary metabolites. Although having immense applications this may pose a threat to the environment by changing the composition of the local ecosystem. Further research work is needed to know more about its benefits and bio safety to make it more important and commercial approach in the field of crops and pharmaceuticals.

Keywords: Transgenic Plant, Gene transfer techniques, Genetic engineering techniques.

BCDACPT/NS-011

INTERACTIVE ROBOTIC 'PARTNER' FOR THERAPIST IN AUTISM

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Abstract

Autism, a complex developmental disability of neurological disorder affects development of the person's communication and social interaction skills. It appears in 1 in every 150 individuals. It's a part of Autism Spectrum Disorder (ASD) which also covers Asperger's disorder, Childhood disintegrative disorder, Rett's disorder, Pervasive developmental disorder. Autism is characterised by stereotypical disorder. An interdisciplinary team of mechanical engineers and autism experts developed a system by outfitting computer/robot

with biosensors and analyzing variations in various readings like blood pressure and skin response to evaluate their emotional state. The information was used to program computers and robots to respond accordingly and used it to demonstrate that robotic systems may be powerful tools for enhancing the basic social learning skills of children with ASD. It is reported that children with ASD paid more attention to the robot and followed its instructions. In a nut-shell, this article indicates that robots can play a crucial role to treat **AUTISM** (Always, Unique, Totally, Interesting, Sometimes, Mysterious).

Keywords: Autism Spectrum Disorder, Stereotype, Robots, Biosensor.

BCDACPT/NS-012

ASSESSMENT OF ANTISNAKE VENOM ACTIVITY

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Abstract :

Snakebite is a global medical problem especially in the rural areas of the tropics with about 40,000 deaths each year. But enough research is not going on to find the antisnake venom and there is less knowledge of snake venom and antisnake venom. So our objective is to find out how to assess the antisnake venom activity and next we will go for alternative herbal products to assess Antivenom activity. According to the method of Theakston DG , In accordance with the recommendations of the report of a WHO Coordination Meeting on Venoms and Antivenoms, methods have been developed for the assessment of lethal, defibrinogenating, procoagulant, haemorrhagic, and necrotizing properties of venoms, and used to study 53 venoms from 30 different species of snakes of medical importance throughout the world. The tests used were simple and should be reproducible in other laboratories throughout the world. Procedures for assaying neuromuscular paralytic activity and systemic myotoxic activity have yet to be developed. The tests will be used to assay the neutralizing potency of both international standard antivenoms (raised using the IRVs) and new and currently available commercial antivenoms. Such studies should result in the production of more potent antivenoms for use in both developing and developed countries, and improve the understanding and management of snake bite throughout the world.

Keywords : Venom, Lethal.

BCDACPT/NS-013

NANOCRYSTALS AS THERAPEUTIC AGENTS

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Abstract:

Nanocrystals are material particle having at least one dimension smaller than 100 nanometres. Nanocrystals obtained from natural biomaterials could be useful as biocompatible matrix for drug delivery and therapy. Metals are interesting because they are part of all metabolisms microbial, plant or animal. Toxicity of metals is well-known. At the same time newer applications of metallic compounds include nanocrystals as potential

therapeutic agents. There are myriads of methods reported in literature to obtain nanocrystals. Electron microscopies and various spectroscopies had been utilized to understand nanostructures. XRD methods suitable for deciphering metal nano-structures are also available. Such methodologies would help us developing structure-function correlations in nanocrystals as therapeutic agents.

Keywords: Nanocrystal, Spectroscopy.

BCDACPT/NS-014

NATURAL FOOD PRESERVATIVES

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Abstract :

Food preservation is a method of storing both raw and cooked food for an extended time by using food preservatives. Food Preservation is basically done for three reasons to preserve the natural characteristics & the appearance of food and also to increase the shelf value of food for storage. The techniques of preservations are Heating, cooking and pasteurization, Dessication, Cold, Acid ph. There are different types of preservatives - Natural food preservatives, Artificial preservatives & Chemical food preservatives. Here Natural food preservatives are mainly highlighted. Sugar and salt are the earliest natural food preservatives. It is also known as traditional preservatives in food that are used at home while making pickles, jams and juices etc. it has important role to preserve the appearance, texture, flavor, edibility and nutritive value of the foods and also to prevent from food poisoning. Freezing, boiling, smoking, salting are also used. Though other two types of preservatives are the most effective for a longer shelf life, they have some toxic effect also. Natural food preservatives shows less toxicity & side effects as compared than the other two. Thus day by day natural food preservatives are more in demand and further study may prove their commercial value as food preservative in near future.

Key words: Preservative, Preservation, Shelf life.

BCDACPT/NS-015

MODIFICATION OF NATURAL GUMS BY GRAFT CO POLYMERISATION AND THEIR APPLICATIONS

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Abstract:

The modification of polymers has received much attention recently. Among the methods of modification of polymers, grafting is one of the promising methods. In principle, graft co-polymerization is an attractive method to impart a variety of functional groups to a polymer. Graft co-polymerization initiated by chemical treatment, photo-irradiation, high-energy radiation technique, etc. is documented in this review. Several prime controlling factors on grafting are discussed. In the past several years, there has been increased emphasis on applications of grafted polymers. The modified polymers through grafting have a bright

future and their development is practically boundless. In this review, we have tried to cover two important applications employing grafting technique, viz. membrane separation science and conducting polymers.

Keywords: Polymer, Grafting.

BCDACPT/NS-016

NANOEMULSION: THE LATEST TECHNOLOGY INVOLVED IN COSMOCEUTICALS AND COSMOTHERAPEUTICS

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Abstract:

World consumers are looking for personal care products that supply multiple benefits with minimal efforts. They also expect the latest technology advances to be incorporated into innovative formulations. The trend toward therapeutic cosmetics will lead to a better understanding of modern ingredients and their assessment techniques. To obtain skin care formulations with real consumer perceivable benefits and to optimize sensory attributes, formulators are resorting to technology that until recently was exclusively used in cosmetic products. Topical and transdermal drug delivery systems are noninvasive and can be self administered with the minimization of side-effects, have received increased attention during the past few years. Nowadays, pharmaceutical and cosmetic industries have had great interest in nanoemulsions due to their characteristics, such as high kinetic stability; skin delivery efficiency of active substance or drugs; excellent sensorial and esthetic aspects, besides the need for less surfactant (5-10%) when compared to microemulsions, which reduces the possibility of skin irritation and production costs. nanoemulsion performed desirable skin permeable capacity, being able to penetrate across stratum corneum and diffuse deeper into dermis. Nanoemulsion is a heterogeneous system and it consists of two immiscible phase; one phase is oil phase other is aqueous phase, while the droplet is of sub micron size range of 5-200 nm. In this review attention is focused to give the brief regarding formulation aspect, method of preparation characterization techniques, evaluation parameters and various applications of the nanoemulsions in the growing cosmoceutical industries and cosmotherapeutics.

Key words: Nanoemulsion, Nanomedicine, Transdermal Drug Delivery, Cosmotherapeutics.

BCDACPT/NS-017

MECHANISM OF SNAKE VENOM AND ANTISNAKE VENOM

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Abstract :

Snakebite is a global medical problem especially in the rural areas of the tropics with about 40,000 deaths each year. But enough research is not going on to find the antsnake venom and there is less knowledge of snake venom and antsnake venom. So our objective is to understand the mechanism of snake venom and antsnake venom. Of the 25003000 species of snakes distributed worldwide, about 500 are venomous of the 52 poisonous species in India, majority of bites and consequent morbidity is attributable to 5 species. Venoms are mainly toxic modified saliva consisting of a complex mixture of chemicals called enzymes found in snake poisons throughout the world known to man. Broadly there are two types of toxins namely neurotoxins, which attack the central nervous system and haemotoxins which target the circulatory system. Antivenin is made by injecting horses with toxins from venomous snakes and then monitored to make sure they survive. Then after the horse builds up an immunity the blood is extracted and processed into antivenin. Antivenom acts to neutralize the poisonous venom of the snakes and causes the venom to be released from the receptor site. Thus, the receptor sites that were previously blocked by venom are now free to interact with the acetylcholine molecule, and normal respiration resumes. The spent antivenom and the neutralized venom are then excreted from the body.

Keywords : Snake Bite, Antivenom, Haemotoxin.

BCDACPT/NS-018

**AN OVERVIEW ON RECENT APPROACHES IN THE DEVELOPMENT OF
FLOATING MICROSPHERES AS GASTRIC RETENTION OF DRUGS**

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Abstract :

Recent technologies and scientific research especially emphasize on overcoming physiological problems such as short gastric residence and prolong gastric emptying times. The floating microspheres are retained in the upper gastrointestinal tract, which may result in enhanced absorption and improved bioavailability. Gastro-retentive floating microspheres are low density system that should contain sufficient buoyancy to float over gastric content and remain in stomach for prolong period. Currently this approach is being utilized to prolong gastric residence time (GRT) without affecting the gastric emptying rate for more than 12 hours and to achieve a better control over fluctuations in plasma drug concentration. These approaches are useful for those types of drugs which are poorly soluble in high pH environment or unstable in intestinal fluids. It also improves bioavailability, reduces drug waste, enhances absorption and minimizes adverse activity of the colon. The recent developments in the field of floating drug delivery system includes physiological and

formulation variables affecting gastric retention, approaches to design single unit and multiple unit non-effervescent and effervescent systems. Therefore, from the formulation and technological point of view, the floating drug delivery system appears to be a logical approach for controlled oral drug delivery.

Keywords : Microsphere, Gastric residence time, Floating drug delivery system.

BCDACPT/NS-019

A REVIEW ON ANTI-HIV ACTIVITIES OF COMPOUNDS FROM MEDICINAL PLANT

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Abstract :

The AIDS pandemic is one of the most disastrous health and development issue in world today. Till now it is a dangerous disease which can not cure permanently. The Human Immunodeficiency Virus or HIV is the virus that causes HIV infection. During HIV infection the virus attacks and destroys the infection-fighting CD4 cells of the body's immune system. AIDS is the most advanced stage of HIV infection. HIV transmitted (spread) through the blood, semen, genital fluids, unprotected sex or breast milk of a infected with HIV. Biodiversity of the plant kingdom has always provided a source of new drug candidates for almost all disease areas. The number of isolated compounds exhibiting anti HIV activity from natural sources is increasing steadily. Anti-HIV drug obtain from natural product is an innovation to fight against HIV virus and its laboratorial result is more satisfactory. A number of natural product such as (Calanolide A, Calanolide B, Batzelladines A, Buchapine etc) have been used as lead compounds. Their specific activity is high and toxicity is very low and more economic. In a decade of extensive research, great progress has been achieved in the discovery of potent anti-HIV agents from nature and these new invented drugs obtain from natural products open a new door to fight against this life threatening disease.

Keywords: AIDS, Anti-HIV natural products, HIV.

BCDACPT/NS-020

MAGNETICALLY CONTROLLED NANOPARTICULAR DRUG DELIVERY OF ACECLOFENAC

Arpan Mahanty*, Seemanchala Rath, Apurba Kumar Biswas, Piyali Majumdar,
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Abstract

Recently, magnetite (Fe_3O_4) loaded nanoparticles and its exploration arouse the interest of many researchers in the field of novel drug delivery. In the present investigation magnetically controlled nanoparticles were prepared, to achieve targeted drug delivery using aceclofenac as a model drug. The investigation includes studying the effect of wall polymer (Eudragit RL 100) on the release kinetic and % entrapment efficiency of the nanoparticles. Effect of independent variables (amount of Eudragit RL 100 and magnetite)

were analysed by using a 2^2 full factorial design with center point by incorporating an interaction regression model. Moreover, the nanoparticles were subjected an in-vitro drug targeting study using a simple model. Drug-polymer interaction between Aceclofenac and Eudragit RL 100 was studied by FTIR spectra, which revealed no interaction. All the five batches of aceclofenac and magnetite loaded nanoparticles had shown an extended drug release pattern for 18 hours. Mechanism drug release from all the nanoparticles were achieved by non-Fickian diffusion as the slope of their Korsmeyer Peppas model were higher than 0.5. Effect of Eudragit RL 100 was more pronounced than that of magnetite as far as % drug release after 12 hours and 18 hours were concerned. Contour plots and response surface plots were concluded that, as the amount of ERL increases, % drug released and % entrapment efficiency decreases. However, in-vitro drug targeting time was decreasing with increased value of magnetite. Finally, the optimized values obtained for amount of Eudragit RL 100 and magnetite were 0.2 gm and 0.35 gm respectively.

Keywords: Magnetically controlled nanoparticles; Nanomedicine; Controlled drug delivery; Entrapment efficiency.

BCDACPT/NS-021

OPHTHALMIC DELIVERY OF ION-ACTIVATED *INSITU* GELLING SYSTEM OF OFLOXACIN

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Abstract:

The present work was carried out to develop as *insitu* gum based ophthalmic drug delivery system of Ofloxacin, a broad spectrum antimicrobial agent used in the treatment of ocular infections. The methodology adopted for preparation of *insitu* gel solution was very simple and cost effective. It is newer approach to improve easy eye instillation, residence time, bioavailability and prolong drug release. From the study conducted, Ofloxacin was successfully formulated as ion-activated *insitu* gel forming ophthalmic solution containing 0.3% (w/v) of Ofloxacin, using gellan gum as a gelling agent in combination with HPMC, HEC, PVP, PVA and sodium alginate as a mucoadhesive force and viscosity enhancing agent. The formulation underwent gelation in the cul-de-sac upon instillation as drops into the eye. The gel formed in-vitro produced sustained drug release over 8h periods. The formulations are stable over a period of one month in various study temperature. Although the concentrations of various polymers play an insignificant role in the release profile of drug from the system, but increase viscosity and force of adhesion thus increase patient acceptances and decrease need of natural polymers in higher concentrations so makes product cheap. This new formulation is a viable alternative to conventional eye drops by virtue of its ability to enhance bioavailability through its sustained drug release and longer pre-corneal residence time. Also important, it's ease of administration and reduced frequency of administration resulting in better patient acceptance.

Keywords : In-situ, Gel, Ocular.

BCDACPT/NS-022

MOLECULAR MEDICINE & SURGERY

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Abstract:

Molecular medicine is a broad field where physical, chemical, biological and mechanisms identify fundamental molecular and genetic errors of disease and to develop and correct them. It is a prime example of interdisciplinary work between molecular biologists, clinical researcher & physicians involved in patient care. The major attention is paid to the genetic bases of human diseases, molecular diagnostics, preventive medicine and gene therapy. In freiburg the emphasis is oncology as well as disorders of the kidney, liver, skin & the memapopoietic, musculoskeletal, nervous and vascular systems. In medical nanorobotics, the analysis and physical correction of molecular structures in the body using medical nanomachines. A technique used to increase the drug susceptibility of tumor cells by introducing gene segments into such cells so as to alter their drug resistance. A single hydrogen atom has been snipped off a molecule and then added back on again, marking the first time a single chemicle bond has been broken and reformed in a controlled reversible way. When a tumor grows on an organ, doctor remove it. When a hip stopes working, they replace it. When a faulty gene causes sdisorder such as Huntington's disease or sickle cell anemia, there is not a If doctor can someday modify genes to prevent an unborn child from developing down syndrome, for intance, what's to stop them from engineering made-to-order babies with Olympic-caliber athleticism and the hair and eye :colours there parents request. Moleculer surgery is use of penaturing high performance liquid chromatography, LMW heparin fraction. Moleculer biology in head, nake, brest cancer, low momeculer weight heparin prophylayis inday case surgery.

Key words: Medicine, Surgery, Oncology, Nanorobotics, Liquid Chromatography.

BCDACPT/NS-023

NEONATAL THROMBOSIS

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Abstract:

Thrombotic disease is uncommon in newborns but can cause serious morbidity or be life threatening. It is most common in babies receiving intensive care with indwelling central lines.

Maternal diabetes, family history of thrombosis, antiphospholipid, anti-cardiolipin antibodies intra uterine growth retardation contributing factors, sepsis, prematurity and congenital thrombophilias are the risk factor of neonatal thrombosis. The hemostatic system in the newborn differs from children and adults. Children till 6th months of age have lower levels of the vitamin-Kdependent coagulation factors II, IX, and X, a low level of thrombin inhibitor such as anti thrombin, heparin & low level of protein C & protein S. The usual presenting features of thrombosis are lower limb mottling or cyanosis with absent femoral pulses or systolic gradient between upper & lower limbs. Congestive heart failure, hypertension, hematuria exhibit in thrombosis disease. Imaging test like ECG, angiography, CT with contrast are used to detect neonatal thrombosis disease. Some chemical

tests like haemoglobin, platelet count, TC, DC, ESR, lupus anti coagulant test are also done to detect this disease. The treatment of thrombosis and thromboembolism comprises of acute management, treatment with unfractionated heparin or low molecular weight heparin as well as more aggressive interventions such as thrombolytic therapy. **In high risk in neonate, surgery must be done to remove the clotting blood from blood vessels.** This review article focuses on pathophysiology, diagnosis, and acute and long-term management of neonatal thrombosis.

Key words: Thrombosis, Maternal diabetes, Unfractionated heparin, Lupus anti coagulant test.

BCDACPT/NS-024

UV SPECTROPHOTOMETRIC ESTIMATION OF ACECLOFENAC

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Abstract:

Aceclofenac is a non steroidal anti-inflammatory drug with good analgesic and anti-rheumatic properties it also **phenyl acetic acid derivative**. Various methods for analysis of the same are available but are time consuming and expensive. Here we have developed a new, precise and simple UV spectrophotometric method for estimation of aceclofenac from tablet formulation. The drug obeyed the Beer's law and showed good correlation. It showed absorption maxima at 273 nm; in phosphate buffer pH 7.4. The linearity was observed between 0-20 mcg/mL. The results of analysis were validated by recovery studies. The recovery was more than 99%. The method was found to be simple, accurate, precise, economical and robust.

Key words: Aceclofenac, UV-Vis Spectrophotometry, Recovery.

BCDACPT/NS-025

EVALUATION AND RELEASE KINETICS OF FLUCONAZOLE TOPICAL GEL

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Abstract: The evaluation of formulated fluconazole topical gel was carried out for physical appearance, pH-value, spreadability, rheological behaviour, drug content and in-vitro release study. The release data was fitted into different kinetics equation by regression analysis. The rheological behaviour of the prepared gels showed a pseudo plastic flow, which is a good characteristic of topical pharmaceutical gels. The result of formulated gel showed good physical characteristic. Stability studies showed no significant change in physical appearance, rheological properties and drug release upon storage for three months at ambient condition.

Keywords : Gel, Regression Analysis.

BCDACPT/NS-026

UPLC: A NEW PROVEN APPROACH IN CHROMATOGRAPHY

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Abstract

High performance liquid chromatography (HPLC) is a proven technique that has been used in laboratories worldwide over the past 30-plus years. One of the primary drivers for the growth of this technique has been the evolution of packing materials used to effect the separation. According to the van Deemter equation, as the particle size decreases to less than 2.5 μm , not only is there a significant gain in efficiency, but the efficiency does not diminish at increased flow rates or linear velocities. By using smaller particles, speed and peak capacity (number of peaks resolved per unit time in gradient separations) can be extended to new limits, termed Ultra Performance Liquid Chromatography, or

UPLC. The technology takes full advantage of chromatographic principles to run separations using columns packed with smaller particles and/or higher flow rates for increased speed, with superior resolution and sensitivity. In order to take advantage of this new technology, it will be necessary to migrate methods from HPLC to UPLC. UPLC can decrease the operation cost and as well as analysis time.

Keywords : Ultra Performance Liquid Chromatography, Analysis Time.

BCDACPT/NS-027

NATURAL COAGULANTS AND ANTICOAGULANTS

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Abstract:

The present study reviews about the natural coagulants and anticoagulants which help to adhere tiny particles into a fluid and help to delay or prevent blood coagulation respectively. Several steps are presented in the process of coagulation which involves some coagulation factors. Research has revealed that Agrimonia, Goldenseal, Alum Root, etc shows coagulant effects while Cinnamon, Garlic, Turmeric, Ginger, Green Tea, Ginkgo biloba etc. possesses anticoagulant effects. Natural coagulants & anti coagulants more preferred compared to their synthetic counterparts. Further study & research works are required for more knowledge about this to make them commercially more acceptable.

Key words: Coagulant, Anticoagulant, Coagulation factors.

BCDACPT/NS-028

CORD BLOOD BANKING

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Abstract:

A cord blood and tissue bank is a facility which store umbilical blood for future. The cord blood is normally wasted following the delivery of a baby which contain large amount of pluripotential stem cells. so it is an once in a life time opportunity for the parents to collect and preserve the stem cells from their baby's umbilical cord within 10 minutes of baby's birth. The cord blood was first applied in the treatment of fanconi's anemia. This blood stored or preserved by a method known as cryopreservation. This is done by cooling the unit slowly to 90 degree. It can then be added to a liquid nitrogen tank which will keep the cord blood unit frozen at -196 degree using dimethyl sulfoxide slowly or controlled rate cooling. By preserving serious ailments such as leukemia, thalassemia, brain injury, juvenile diabetes, reconstitution of bone marrow (transplantation) etc. It also has a wide application in cosmetics and is used to reduce wrinkles, lines, dark circles, age spots, puffy eyes, frown lines, sagging skin and feather lips. Cord blood donations should be encouraged when the cord blood is stored in a bank for public use. Parents should recognize that genetic and infectious disease testing is performed on the cord blood.

Keywords: Cord blood banking, Umbilical cord blood, Cryopreservation

BCDACPT/NS-029

SYNTHESIS AND CHARACTERIZATION OF ACRYLIC ACID GRAFTED GELLAN GUM

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Abstract:

The modification of polymers has received much attention recently. Among the methods of modification of polymers. Grafting is one of the promising methods. In principle, graft co-polymerization is an attractive method to impart a variety of functional groups to a polymer. Objective of my present work is synthesis and characterization of acrylic acid grafted gellan gum. Acrylic acid grafted gellan gum is prepared by graft polymerization technique using gellan gum, acrylic acid, Ceric ammonium nitrate as free radical initiator, and heated by microwave radiation. Grafted gellan gum is characterized by FTIR, DSC and TGA, X-Ray Powder diffraction to study either grafting is successfully done or not. Percentage Grafting efficiency, Percentage grafting, Percentage conversion is calculated for 8 batches of grafted gellan gum. Maximum % grafting is observed in batch no S1. Grafting efficiency is increased with increase in Ceric ammonium nitrate concentration and also microwave heating time. After solubility study we can conclude grafted gellan gum has more sustained property than that of natural gellan gum. So Grafting of Gellan Gum is successfully done by polymer grafting method.

Keywords : Polymer, Grafting.

BCDACPT/NS-030

SYNTHESIS AND ANTI-MICROBIAL STUDY OF 2-METHYL-1H BENZIMIDAZOLE DERIVATIVES

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Abstract :

Benzimidazole is a heterocyclic aromatic organic compound. This bicyclic compound consists of the fusion of benzene and imidazole. My presentation deals with the synthesis and anti-microbial study of 2-Methyl-1H Benzimidazole derivatives. The parent nucleus 2-Methyl-1H Benzimidazole compounds was synthesized by condensation reaction between *o*-Phenylenediamine and glacial acetic acid. Then the parent nucleus was refluxed with benzaldehyde, 2-chlorobenzaldehyde and 4-aminobenzaldehyde in the presence of sulphuric acid to yield compound 1a-c. The yield of 2-Methyl-1H Benzimidazole derivatives was found to be 75-85%. The purity of the compounds was ascertained by physical parameters (solubility, melting point) and chromatographic method (TLC). The synthesized compounds were characterized by using IR spectral data together with elemental analysis. In order to ascertain the pharmaceutical application, selective biological screening of the derivatives were carried out according to the standard procedures. The synthesized 2-Methyl-1H Benzimidazole derivatives were screened for anti-bacterial and

antifungal activity against *Streptococcus aureus*, *Escherichia coli*. The synthesized compounds 1a and 1b showed potent antibacterial activity when compared to the standard Ciprofloxacin. The compound 1c exhibited a higher anti-fungal activity when compared to the standard Fluconazole. The results were subjected to statistical analysis by using one-way ANOVA.

Keywords: 2-Methyl-1H Benzimidazole, TLC, *Streptococcus aureus*, *Escherichia coli*.

BCDACPT/NS-031

DENDRIMER AS A TARGETED DRUG DELIVERY SYSTEM

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Abstract :

The main objective of this review is to focus on Dendrimer as a novel drug delivery system. Dendrimer as a drug delivery agent is a promising, safe and selective drug delivery option. It's highly selective nature for targeting the desired tissue is the most essential property and holds a promising future for the treatment of several disorders. Dendrimers are the new artificial macromolecules which have the structure like a tree. Since dendrimers are synthesized from branched monomer units in a stepwise manner hence it is possible to conduct a precise control on molecular size, shape, dimension, density, polarity, flexibility & solubility by choosing different branching units & surface functional groups. Dendrimers are being used as drug delivery systems for various drugs like anticancer drugs, drug for prevention of HIV, enhancing bioavailability of pilocarpine for ocular drug delivery, et al. Dendrimer as a drug delivery system is based on the approach of sending a nanoparticle to the body, loaded with drug. Dendrimers help in achieving increased bioavailability, sustained, controlled as well as targeted release of drug. The main advantage of dendrimer is its different type of route of administration. The dendrimer holds a promising future in various pharmaceutical applications and diagnostic field in the coming years as they possess unique properties, such as high degree of branching, multivalency, globular architecture and well-defined molecular weight, thereby offering new scaffolds for drug delivery. Also as research progresses, newer applications of dendrimers will emerge and the future should witness an increasing number of commercialized dendrimer based drug delivery systems.

Keywords: Dendrimer, Targeted drug Delivery, Internal Hydrophobicity.

BCDACPT/NS-032

CRYOPRESERVATION- A REVIEW

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Abstract

Now-a-days modern science introduces us with a new term, named "Cryo Preservation". This paper discusses this whole process along with its advantage, disadvantage & its role in medical field in future. **Cryopreservation** is a process

where cells or whole tissues are preserved at low sub-zero temperature, such as (typically) 77 K or -196°C (the boiling point of liquid nitrogen) to stop the biological activity, including the biochemical reactions that would lead to cell death i.e it permits cells to be stored indefinitely by using extremely cold temperature to suspend metabolic activity. Cryoprotectant (antifreeze) solutions are used, because the cells being preserved are often damaged due to freezing during the approach to low temperatures or warming to room temperature. This process has been used to freeze sperm, embryos and small tissue fragments that are typically associated with infertility programmes. There are two main types of this process: Equilibrium (conventional slow freezing) and Non-equilibrium or ultra-rapid freezing (vitrification). After preservation, the cell returns in normal phase by Thawing process. However, during last few years it has been observed that successively this technique illuminates medical science as well as the other fields which proves its shining future.

Key words: Temperature, Preservation, Cryoprotectant, Cells & Tissues, Freezing.

BCDACPT/NS-033

A REVIEW ON NANOTECHNOLOGY-BASED DRUG DELIVERY IN CANCER

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Abstract:

In last few years the development of nanotechnology has been focused on controlled drug delivery in cancer treatment. Nanoscale particles between 10 and 200 nm in diameters have most favorable pharmacokinetic profiles as compared to small-molecule drugs; these drug-loaded nanoparticles shows prolonged systemic circulation lifetime, sustained drug release kinetics, and better tumor accumulations through both passive and active mechanisms. Now day's nanocarriers are gaining increasing attention for their ability to co-encapsulate multiple therapeutic agents and to synchronize their delivery to the diseased cells. Various nanoparticle technology such as polymeric micelles and liposomes, hydrogels, dendrimers, nanotubes and quantum dots have been used to delivery different types of anti cancer drugs. In this review, we will cover several nanoparticulate systems that have been used for anti-cancer drug delivery in prolong periods.

Keywords: Nanotechnology, Controlled drug delivery, Cancer.

BCDACPT/NS-034

STATISTICAL OPTIMIZATION OF SUSTAINED RELEASE MATRIX SYSTEMS OF AN ANTI-ASTHMATIC DRUG

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Abstract:

Salbutamol sulphate, a directly acting sympathomimetic drug, is a good candidate for sustained release formulations due to its pharmacokinetic properties but it is challenging

because of its high water solubility. Several techniques are employed to design the sustained release drug delivery system. In the present study, an attempt has been made to develop sustained release Salbutamol sulphate matrix tablets. The matrix tablets were prepared by direct compression technique using different grades of hydrophilic polymer hydroxypropyl methylcellulose. Total seven formulations were prepared by varying the ratios of polymers. The compatibility of the drug with the various used excipients was studied using Fourier transform infra-red spectroscopy. The tablets were evaluated for various physicochemical parameters and results were found to be within limits of In-house specifications. The in-vitro release data were fitted into various kinetic models to find out the mechanism of drug release from the matrix systems. Statistical optimization was carried out to predict the drug release profile from the other combinations of the same polymer. Among the Statistical analysis, **Linear Regression Analysis** was carried out by **Analyse-it + General 1.73 software** to study the effect of different grades of hydroxypropyl methylcellulose on the various responses. The results indicated that the deviations of the responses between the predicted and observed data were in close proximity. So, it can be concluded that the process of matrix tablet formulation with any combination of various grades of hydroxypropyl methylcellulose is statistically optimized and can be reproduced by following similar process conditions.

Keywords : Linear Regression Analysis, Analyse-it + General 1.73 software

BCDACPT/NS-035

BENEFICIAL EFFECTS OF MARIJUANA

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Abstract:

Marijuana is resinous material obtained from the plant CANNABIS. It consists of dried flowering tops of the cultivated female plants of *Cannabis sativa* Linn family Cannabinaceae. There are 421 types of chemicals are present. But only 61 of them are unique to the Cannabis plant -- these are called cannabinoids. One of them, delta-9-tetrahydrocannabinol (THC). **Marijuana causes tumour size reduction in rats. Marijuana helps prevent natural neural degradation from neurodegenerative diseases such as MS, Parkinson's, and Alzheimer's. There has never been a documented human fatality from overdosing on marijuana. Marijuana produces analgesia for patients with neuropathic pain. It cuts the growth of lung cancer in half. It helps to cure H1N1 swine flu. Marijuana helps in the growth of brain cells.** Medical marijuana has been clearly suggested by many studies as a safe non-toxic medicine that is extremely useful for treating most disabling medical conditions including multiple sclerosis, cancer, AIDS, glaucoma, etc. This drug can help terminally ill people to lead an improved and quality life and its use is associated with the lowest withdrawal symptoms. Dozens of peer-reviewed studies, prominent medical organizations, and major government reports have recommended that marijuana should be made legal for its medicinal properties. Marijuana lowers testosterone levels and sperm counts in men and raises testosterone levels in women. In pregnant women it affects the foetus and results in developmental difficulties in the child. Marijuana affects short-term memory and comprehension. Heavy smokers often sustain lung damage from smoke and contaminants. Regular use can result in dependence.

Keywords: Cannabis, Tetrahydrocannabinol, **Alzheimer's**, neurodegenerative pain, short term memory loss.

BCDACPT/NS-036

DOPING- A SYSTEMATIC REVIEW

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Abstract:

The use of **banned performance-enhancing drugs** in sports is commonly referred to as **doping**, particularly by the organizations that regulate sporting competition, like International Olympic Committee (IOC). These drugs are called as **Performance-enhancing drugs** (also known as **PED**). Mainly Anabolic steroids are used for doping. Most steroid programs involve 300 to more than 1,000 milligrams per week in pills, creams, injectable forms. In early days cocaine and caffeine was used as doping drug. In the year 1904 Thomas Hicks who firstly used a steroid which is by his coach for Olympic marathon. According to the World Anti-Doping Agency (WADA) in between 1968-2012 there are 119 give the positive among 25132 tests. *Not just professional athlete* highest rates of steroid use among teens and adults are seen in football, baseball and other games. Steroids stay in body for up to six months and are easily detectable in urine. For the testing of doping urine and blood sample are collected and analysed. Blood transfusion method is used for testing blood. There are many health risks from the use and abuse of anabolic steroid. **Now days the drugs are used Nandrolone, Tetrahydrogestrinone (THG), Stanozolol and Androstenedione.** The fight against doping is a top priority for the International Olympic Committee (IOC) and World Anti-Doping Agency (WADA).

Key words: Performance-enhancing, Anabolic steroids, World Anti-Doping Agency (WADA), Blood transfusion.

BCDACPT/NS-037

STRESS RELATED SYNDROMES

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Abstract:

Stress comes from the word 'distress' is a conscious or unconscious physiological feeling or a physical situation, which comes after as a result of physical or mental positive or negative pressure. Stress occurs as a result of the body's reaction to certain stimuli which creates disturbances to its equilibrium, and affects the immune system. As it is evident from the lifestyle of the present generation, which requires people's involvement in their work so much as to drag themselves into the horror of their workload even after office hours, interfering their personal lives, creating stress. Meditation and taking rest are some of the techniques which help in the removal of stress. Few body hormones are also responsible in the treatment of stress like those various types of hormones released from the pituitary glands which play a significant role in regulating homeostasis like adrenotropic hormone, which modulates the heavily regulated stress response system. Disorders like Hodgkin's disease, Anxiety, PTSD (Post Traumatic Stress Disorders), Headache etc are seen in case of stress.

Eye strain, diabetes, high blood pressure, depression are the common effects of stress. Many types of treatments like prognosis (course of flocculating but recovery can be expected in the majority of cases). Nowadays a huge number of research works are being carried out than previous, by which new and more reliable treatment techniques are rendered. The latest updates include stress and alcohol interaction, psychotropic research in traumatic stress etc.

Keywords : Anxiety, Meditation.

BCDACPT/NS-038

NEWBORN SCREENING

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Abstract:

Newborn screening is a public health program designed to screen infants shortly after birth for a list of conditions that are treatable, but not clinically evident in the newborn period. Most newborn screening tests are done by measuring metabolites and enzyme activity in whole blood samples collected on specialized filter paper, however many areas are starting to screen infants for hearing loss using automated auditory brainstem response and congenital heart defects using pulse oximetry. Infants who screen positive undergo further testing to determine if they are truly affected with a disease or if the test result was a false positive. Follow-up testing is typically coordinated between geneticists and the infant's pediatrician or primary care physician. There are several conditions observed in newborn such as organic acid metabolism disorders, fatty acid oxidation disorders, amino acid metabolic disorders, **Hemoglobinopathies etc.** With early detection, and dietary management, the negative effects of different diseases can be largely eliminated. . Reproductive benefits are assuming elevated prominence in expanded newborn screening panels. Rapid expansion of newborn screening is underway in many jurisdictions around the world, and even more accelerated expansion is anticipated in the future.

Keywords: enzyme activity, congenital, pulse oximetry, dietary management, **Hemoglobinopathies**

BCDACPT/NS-039

CHIMERISM- A MUTANT PHENOMENON

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Abstract:

In Greek mythology, a chimera is a monstrous fire-breathing creature composed of multiple animal parts. The head of a lioness, tail ending with a snakes head and at the centre of the spine goat's head with the back half of the body that of a goat. A **chimera** is a single organism composed of genetically distinct cells seen in both plants and animals. In animals it occurs when two different ova are fertilized by two sperm. Microchimerism is the presence of a small number of cells that are genetically distinct from those of the host individual. Most people are born with few cells genetically identical to their mother which decreases with age.

Parasitic Chimerism is a mutual benefit where male unites with the female, for example- Ceratoid anglerfish. **Germ line chimerism is an association of two distinct germ cells, example- marmosets. In plants;** Graft chimeras is the grafting of two tissues that are preserved in the same shoot. Chromosomal chimeras that are the layers differ in their chromosome constitution. Nuclear gene-differential chimeras and Plastid gene-differential chimeras arise by spontaneous or induced mutation of a nuclear gene to a dominant or recessive allele and of a plastid gene respectively. In Plastid gene-differential chimeras sorting-out of two kinds of plastid is possible during vegetative growth. The main problems are most people are unaware that they are chimeras and a problem arises in maternity testing. Although chimeras have been around for a long time we are just now scratching the surface of this medical marvel.

Key words: Micro-chimerism, Parasitic, Chimerism, anglerfish, chimeras

BCDACPT/NS-040

A REVIEW ON APHRODISIAC HERBS

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Abstract :

An aphrodisiac is a substance that increase or arouse sexual desire or libido. They are also known as sexual stimulants. The name comes from the Greek word “Aphrodisiakon” i.e. “pertaining to Aphrodite” the Greek goddess of love & beauty. Throughout history many foods ,drinks & behaviors have had a reputation for making sex more attainable &/or pleasurable. However from a historical & scientific standpoint the alleged results may have been mainly due to mere belief by their users that they would be effective. A list of supposed aphrodisiac herbal products include ginseng, horny goat weed, ashwagandha, catuaba, garlic, ginger, cinnamon, ginko & hundreds of such other items. These compounds activates the melanocortin receptors in the brain & serves as effective sex stimulants. According to their function in our body these drugs are further classified as psycho-physiological (which includes visual, tactile , olfactory , aural) & internal (which includes stemming foods , alcoholic drinks , potions & other such preparations). Apart from certain drugs like marihuana , which arise sexual excitation modern pharmaceutical science recognizes quite a limited number of aphrodisiacs. Studies have evaluated the effect of herbal aphrodisiacs on men & women on both hormone level & behavior. Apart from its applications in human life , it has also been used as traditional sexual stimulants fed to livestock to facilitate breeding. That was a quick glance at some of the aphrodisiac herbs & their effects in humans' life. Along with the herbs a proper treatment under a good ayurvedic practitioner will bring salutary results.

Keywords Aphrodisiac , Libido , Melanocortin , Psycho-physiological.

BCDACPT/NS-041

IMPACT OF IMPLANTABLE CONTRACEPTIVE ON QUALITY OF LIFE

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Abstract: Despite the wide availability of effective contraception, unplanned pregnancies remain a common problem. Annual percentage failure rates have been reported as:- diaphragm 18%, male condom 12%, progesterone only oral contraceptives 3%, levonorgestrel intra-uterine system (Mirena) 0.2%, tubal ligation 0.17%, combined oral contraceptive 0.08%, and vasectomy 0.04% . Although some of these events may be put down to direct failure of the contraceptive method, most unplanned pregnancies, especially in younger age groups, appear to result from poor patient compliance. There would therefore seem to be a place for a reliable method of contraception which does not require compliance on a daily basis or at the time of intercourse. So implantable contraceptive are highly effective for preventing pregnancy & seem to be well tolerated by the women who use them. In this process etonogestrel use, this is artificial female sex hormone which is preventing pregnancy. The implant is a small flexible rod which releases etonogestrel slowly into the bloodstream when inserted just below the surface of the skin on your upper arm. Etonogestrel works by stopping your egg cells from ripening and being released and it also changes the lining of your womb to make it less likely that a fertilised egg will attach to it. The mucus that surrounds your *cervix* (neck of the womb) also becomes thicker so that the sperm cannot get through as easily to fertilise an egg.

Keywords : Contraception, Implant.

BCDACPT/NS-042

A REVIEW ON APHERESIS

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Abstract

“Apheresis” is a greek word derived from the word “apairesos” which means 'to take away'. It is a modern medical technology in which blood of a donor or patient is passed through an apheresis instrument that separates out necessary components of blood and returns the remainder to the circulation. There are four types of Apheresis namely Plasmapheresis, Erythrocytapheresis, Plateletpheresis and Leukopheresis. Apheresis technology aims to collect blood component from a donor for the patients suffering from blood loss due to trauma, surgery, to treat anaemia etc. It also removes undesirable substances like lipids, reducing excess WBC, platelets, automated exchange of sickled RBC condition, ulcerative colitis, leukemia etc. It involves connecting the blood in the patient/donor's veins through tubing to a machine that separates the blood components. The separation is done by either a centrifuge process or filtration process on the blood in the machine. After the separation, the desired component of the blood is removed, while remaining blood components are reinfused back into the patient. The entire procedure is painless and

typically takes about two hours, or only slightly longer than a conventional blood donation. Apheresis therapy have an important and growing role in treatment of many diseases. The predominant use of plasmapheresis, efficiency of centrifugal machines, clinical validation, technical sophistication combines to make apheresis medicine an important therapeutic discipline.

Keywords: Apheresis, Blood, RBC, WBC, Platelets.

BCDACPT/NS-043

ABILITY OF MILK PROTEIN AS A DRUG DELIVERY SYSTEM

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Sree Ramkrishna Silpavidyapith, Suri, Birbhum

Abstract

Milk proteins are widely available natural vehicles with high nutritional value. They possess good sensory properties and have many structural properties and functionalities which make them highly suitable as vehicle or as ingredients for the composition of vehicles for delivering bioactive molecules. Milk proteins can bind a variety of ions & molecules at different degrees of affinity and specificity. Some important milk proteins like β -lactoglobuline and bovine serum albumin can bind a variety of small molecules. The amphiphilic structure of most milk proteins provide excellent surface properties. Their ability to adsorb at oil-water interface and stabilize emulsions is influenced by their structure, flexibility, state of aggregation, pH, ionic strength and temperature. Molecular self assembly and co-assembly are among the foundations of nano technology. Some of the major milk proteins are natural self-assemblers and co-assemblers. Caseins are naturally organised in micells. After binding the ligand to soluble caseinate, casein micelle reformation was induced by reconstituting the original mineral composition of milk. This was apparently the first approach of using of casein micells as nanovehicles for exogenous hydrophobic bioactive compound. Casein micelles were recently suggested for delivering curcumin a natural spice with potential cancer therapeutic attitude. Caseins naturally bind calcium and calcium phosphate nanoparticles via their semi-phosphate residues. Milk proteins have excellent gelation properties. Acid gelation has been utilized for encapsulation of probiotic bacteria. Bovine serum albumin & lactoferrin have been utilized in the field of targeted drug delivery in the blood. The major advances in the past years in harnessing milk proteins for novel health promoting delivery applications were mainly in nanosizing conjugation, cross-linking & targeting.

Keywords: Milk Protein, Surface Property, Nanotechnology.

BCDACPT/NS-044

AROMATHERAPY A REVIEW.

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Abstract

There are many types of conventional healing therapies like drug-therapy, radiation-therapy physio-therapy etc are used in different physical and mental problems. Nowadays

some other approaches are also being practiced like yoga, aroma-therapy etc. This article reviews about aromatherapy, its techniques and applications. Aromatherapy is a gentle process that uses natural essential oils to promote emotional and physical health and wellbeing. The oils are rose oil, chamomile oil, tea tree oil, eucalyptus oil, etc. Here oils are applied in several ways. It can be vaporized and used in different techniques. Sometimes oils are blended with carrier oil or added into a lotion. Oils can be inhaled or applied to the skin when diluted, often through massage. Aromatherapy has offered to relieve the symptoms of cancer and its treatments. People reported of feeling relaxed and pampered by aromatherapy massage. Research evidences are also supportive for this as an effective treatment for anxiety, depression and improving sleep, mood and quality of life. It also works on immune system, respiratory system, nervous system and endocrine system (hormones). Although many of therapies are in use today but most them are associated with application of synthetic or semi synthetic medicinal agents which have various side effects. On contrary aromatherapy uses only some natural oils and very simple application techniques. Hence it is getting popular day by day as an effective way to improve our quality of life at this twenty first century. Further investigations are needed to make it more available in effective way to common people which would lead the practice having remarkable economical value.

Key words: Aromatherapy, essential oils.

BCDACPT/NS-045

AVIAN INFLUENZA A (H7N9) : THE NEW HEADACHE OF THE WORLD

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Abstract:

Human infections with avian influenza A (H7N9) are known to cause acute and severe respiratory illness and death. The first known human case became ill on February 19, 2013 and through April 11, 2013 38 cases with nine deaths have occurred, all in Anhui, Jiangsu, Shanghai, and Zhejiang. The cases are distributed in a sporadic manner. As of 10 April 2013, 33 human cases infected with a novel influenza A(H7N9) virus have been laboratory confirmed in Shanghai, Anhui, Jiangsu and Zhejiang provinces in China. This case count came after on 31 March 2013, the Chinese authorities had announced the identification of a novel influenza A virus, an A (H7H9) virus, in three people in Shanghai and Anhui province. Avian influenza viruses belong to the family Orthomyxoviridae of the influenza A virus genus. Avian influenza A virus particles are pleomorphic, its spherical diameter is between 80 to 120 nm with the presence of an envelope. The genome consists of eight segments of negative sense single stranded RNA molecules. Based on the antigenic properties of the hemagglutinin (HA) and neuraminidase (NA) glycoproteins, influenza A viruses are classified into 16HA (H1~H) and 9 NA (N1~N9) subtypes. In addition to infecting birds, avian influenza A viruses also are known to have infected humans, swine, horses, mink, and various marine mammals. In this review we are discussing about this new disease, its serological diagnosis and treatment for awareness of this new arrival problems.

Keywords: Avian influenza A (H7N9), serology, hemagglutinin.

BCDACPT/NS-046

CARDIOPULMONARY RESUSCITATION (CPR)

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Abstract:

Cardiopulmonary resuscitation (CPR) is an emergency procedure for manually preserving brain function until further measures to restore spontaneous blood circulation and breathing in a person who is in cardiac arrest or seen to gasp. CPR is likely to be effective only if commenced within 6 minutes after the blood flow stops. The objective is to delay tissue death and to extend the brief window of opportunity for a successful resuscitation without permanent brain damage. A both ACLS (advanced life support) and BLS (basic life support) following the main rule of life support ABC as in Airway, Breathing & Circulation. Airway process includes some techniques like head tilting, chin lifting, jaw thrust, finger sweep, Heimlich manoeuvre. Equipments used for airway are face mask, oropharyngeal airway, nasopharyngeal airway, laryngeal mask, endotracheal tube, **Tracheostomy etc.** **Basic BREATHING techniques include mouth to mouth, mouth to nose, and mouth to mouth and nose. Some advanced breathing techniques are using equipments using Self-inflating resuscitation bag and Mechanical ventilator. For CIRCULATION chest compression technique is used (both BLS & ACLS) and IV access (ACLS), Defibrillation (ACLS) equipments are opted. Drugs used like Adrenaline, Amiodarone, Vasopressin, Calcium, IV Fluids, Thrombolytics, Sodium bicarbonate, Atropine etc.** CPR is often severely misrepresented in movies and television as being highly effective in resuscitating a person who is not breathing and has no circulation. CPR serves as the foundation of successful cardiopulmonary resuscitation even in the case of a "non-shockable" rhythm. So, if one patient is survived to life it's a medical achievement.

Keywords: **Cardiopulmonary resuscitation**, Thrombolytics.

BCDACPT/NS-047

DRUGS USED DURING PREGNANCY

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Abstract:

Pregnancy is a special physiological condition where drug treatment presents a special concern because the physiology of pregnancy affects the pharmacokinetics of medications used and certain medications can reach the fetus and cause harm. Total avoidance of pharmacological treatment in pregnancy is not possible and may be dangerous because some women enter pregnancy with medical conditions that require ongoing and episodic treatment (e.g. asthma, epilepsy, and hypertension). Also during pregnancy new medical problems can develop and old ones can be exacerbated (e.g. migraine, headache) requiring pharmacological therapy. In 1960's pregnant ladies who ingested thalidomide gave birth to children with phocomelia. Various other examples of teratogenic effects of drugs are known. It has been documented that congenital abnormalities caused by human teratogenic drugs account for less than 1% of total congenital abnormalities. Hence in 1979, Food and Drug

Administration developed a system that determines the teratogenic risk of drugs by considering the quality of data from animal and human studies. FDA classifies various drugs used in pregnancy into five categories, categories A, B, C, D and X. Category A is considered the safest category and category X is absolutely contraindicated in pregnancy. This provides therapeutic guidance for the clinician. This article focuses on various aspects relating to drug use during pregnancy.

Keywords : Pregnancy, Phocomalia.

BCDACPT/NS-048

PHYTOCHEMICAL & PHARMACOGNOSTICAL STUDY OF VARIOUS EXTRACT OF *CALOTROPIS GIGANTEA* L.

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Abstract :

Plants are the living factories for the production of numerous secondary plants metabolites. These secondary plants metabolites are used in the treatment of various ailments.

Extraction of crude drug of *Calotropis gigantea* L. by using various solvents. Phytochemical screening of various extracts of *Calotropis gigantea*. To explore the possibility of using the traditional medicine with proper chemical and pharmacological profile and to conduct systematic chemical investigation of *Calotropis gigantea*.

Methodology: The shade-dried roots of *Calotropis gigantea* were powdered and extracted by using solvents of increasing polarity. The extracts obtained was named as petroleum benzene extract, chloroform extract, acetone extract and Hydro alcoholic extract (Ethanol:Water). The phytochemical investigation was done for confirmation of major phytochemicals groups like glycosides, alkaloids, carbohydrates, proteins etc. **Results:** Qualitative chemical tests were conducted for all the extract of roots of *Calotropis gigantea* (Linn) to identify the various phytoconstituents. The results of phytochemical analysis of different extract of *Calotropis gigantea* was positive for alkaloids, carbohydrates, glycosides, tannis etc. In the present study, the root of *Calotropis gigantea* were collected and authenticated. The authenticated roots are subjected to physicochemical evaluation. The roots are subjected to size reduction to get coarse powder (40#). This study are still in need to evaluate by pharmacological screening methods. This study is part of the project "Ethnopharmacology coupled search for bioactives from traditionally used medicinal plants in the management of inflammatory diseases and related complications" which is financially supported by UGC, New Delhi, [F.No- 10-01/2008(SA-I), 22 Nov, 2012].

Keywords : Ethnopharmacology, *Calotropis gigantea*, Extraction.

BCDACPT/NS-049

IRON DEFICIENCY ANEMIA

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Abstract :

Anemia is a condition that people associate with low iron levels. Along with hemoglobin, iron is also present as a major part of the RBC. **Iron-deficiency anemia** is caused by insufficient dietary intake and absorption of iron, and/or iron loss from bleeding which can originate from a range of sources like the intestinal, uterine or urinary tract. There are different types of anemia and depending on the type, symptoms of anemia can be mild to severe and the duration of symptoms can range from brief episodes to a chronic condition. Symptoms of anemia include fatigue, weakness, pale skin, shortness of breath, dizziness, lightheadedness, chest pain, headache and cold hands and feet. It can be caused by increased iron demand / loss or decreased iron intake in different age group and in women, heavy or long menstrual periods. In pregnant women iron deficiency can increase the risk of a preterm or premature delivery. Measurement of hematocrit or hemoglobin is the most commonly used method for screening anemia and when hemoglobin is < 11 g/dL the patient is said to be anemic. Anemia is sometimes treatable, but certain types of anemia may be life-long. If the cause is dietary iron deficiency, eating iron-rich foods, such as beans, lentils or red meat, or taking iron supplements usually with iron (II) sulfate, ferrous gluconate, or iron amino acid chelate ferrous bisglycinate, or synthetic chelate Na-Fe-EDTA, will usually correct the anemia. Alternatively, intravenous iron can also be administered.

Key words: Anemia, **Iron**, Hematocrit, Hemoglobin, Dietary iron, Supplements

BCDACPT/NS-050

DYSLEXIA

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Abstract:

Dyslexia is the name for specific learning disabilities in reading. It associated some problem with reading comprehension slow down vocabulary. It may result poor reading fluency and reading out loudly. It is often neurological & genetic. Some with dyslexia can have trouble with reading & spelling. While struggle to write, or to tell left from right. Some children show few signs of difficulty with early reading & writing. "Primary dyslexia" is the dysfunction of damage of left side brain (cerebral cortex), not change with age. "Trauma dyslexia" is usually occurred by brain injury. "Developmental dyslexia" caused by hormonal development during early stages of fetal development. Anatomical, brain imagery studies shows difference of student with dyslexia develops, functions. Young children are not able to recognizing letter, matching letters, sounds and blending sounds into speech, learning the correctly using new vocabulary words. School age children are affected Mastering rule spelling, Remembering fact, number, reading, spelling reversed letters (like d, b) or moving the letters left or right. Trouble with word problem with math. Treatment of

dyslexia is first it evaluated that the child specific area of disability. An appropriate treatment plan will be focus on the strengthening the child weakness while utilizing the strength. A direct approach may include a systemic study of phonics. Specific reading approaches that require a child to hear, see, say & do something. Diagnosis of dyslexia is standard beignet intelligence scale, wood cock psycho educational battery, Peabody individual achievement test revised, Wechsler individual achievement test.

Key word: Disabilities, Spelling, Diagnosis.

BCDACPT/NS-051

THALASSEMIA

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Abstract :

Thalassemia is a genetic blood disorder, generally characterized by anaemia due to enhanced red blood cell destruction. Haemoglobin, the oxygen-carrying component of the red blood cells consists of two different proteins, an alpha and a beta. If the body doesn't produce enough of either of these two proteins, the red blood cells become defective and cannot carry sufficient oxygen. The resulting anaemia is usually severe with several health problems like enlarged spleen, bone deformities, fatigue and requires regular life-long transfusion, therapy and medical supervision. Thalassemia can't be prevented because they're inherited, "inherited" means they are passed on from parents to offspring's. However, these bleeding disorders can be found before birth through prenatal tests. Thalassemia is a common inherited disease in the world. India accounts for 10% of the total world thalassemia population and approximately 1 in 30 in general population is carrier of the mutated gene and the cases may increase as it is a hereditary disorder, it is important to take into consideration about this disorder as it may prove fatal. The intensity of this disorder can be lowered by diagnosing and taking proper measures and treatments.

Key words: Thalassemia, Haemoglobin, Anaemia.

BCDACPT/NS-052

PHARMACEUTICAL AND BIOMEDICAL APPLICATIONS OF A CARBON-BASED NANOMATERIAL

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Abstract:

Nanomaterials have the potential to revolutionize a wide range of medical diagnostic and therapeutic interventions such as diagnostic imaging, photothermal therapy, nucleic acid delivery, implantable devices, and of particular interest in this article, drug delivery. Now day's carbon-based materials like graphite, diamond, nanotubes, nanowires and nanoribbons have been used for various applications in electronic, optics, optoelectronics, biomedical engineering, tissue engineering, medical implants, medical devices and sensors. Graphene is an important new agent to these carbon family materials due to its unique properties. Each

carbon atom in graphite is linked to other carbon atoms in the same plane with a strong carbon-carbon bond. The interlayer binding through weak Van der Waals forces makes it a soft material as opposed to diamond. Similarly, carbon nanotubes are other forms of carbon, which have tubular and spherical arrangements responsible for their specific properties. The strong carbon-carbon bonding in the plane, aromatic structure, presence of free π electrons and reactive sites for surface reactions make graphene a unique material with good mechanical, physicochemical, thermal, electronic, optical and biomedical properties. This review article we give an overview of various types, properties of graphene and its drug delivery and tissue engineering applications

Keywords: Nanomaterials, Graphene, drug delivery, Tissue engineering.

BCDACPT/NS-053

DATE RAPE DRUGS

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Abstract:

A **date rape drug**, also called a **predator drug**, is any drug that can be used to assist in the execution of drug facilitated sexual assault (DFSA). The unofficial term "date rape drug" came into widespread usage in the early 1990s through U.S. news media reports. The most common types of DFSA are those in which a victim ingested drugs willingly for recreational purposes, or had them administered surreptitiously it is the latter type of assault that the term "date rape drug" most often refers to. Date rape drugs often have sedative, hypnotic, dissociative, and/or amnesiac effects, and can be added to a food or drink without the victim's knowledge. In various studies of women who have reported they thought they were given such substances, only a tiny minority have tested positive. In most cases it is assumed that the women mistook the effects of alcohol for date rape drugs. The three drugs most commonly used for DFSA are alcohol and two prescription-strength sleep aids. The two prescription drugs are GHB, also known as gamma-hydroxybutyric acid, and benzodiazepines (such as flunitrazepam, also known as *Rohypnol* or "roofies"). Benzodiazepines (tranquilizers), such as Valium, Librium, Xanax, and Ativan, are prescribed to treat anxiety, panic attacks, insomnia, and several other conditions, and are also used frequently recreationally. Benzodiazepines are often used in DFSA, with the most notorious being flunitrazepam (chemical name) or Rohypnol (proprietary or brand name), also known as "roofies," "rope," and "roaches".

Key words: A Date Rape Drug, Drug Facilitated Sexual Assault (DFSA), Benzodiazepine.

BCDACPT/NS-054

NANO SUSPENSION: A NOVEL APPROACH FOR DEVELOPMENT OF PHARMACEUTICAL FORMULATIONS AND DRUG DELIVERY SYSTEMS

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Abstract :

The poor water solubility of drugs is major problem for drug formulation and clinical application. Hence, there is a growing need for a unique strategy that can tackle the formulation related problems associated with the delivery of hydrophobic drugs in order to improve their clinical efficacy and optimize their therapy with respect to pharmacoconomics. Now a day, nanoscale systems for drug formulation and delivery have gained much interest as a way to improve the solubility problems. The reduction of drug particles into the sub-micron range leads to a significant increase in the dissolution rate and therefore enhances bioavailability. Nanosuspensions are promising candidates that can be used for enhancing the dissolution of poorly water soluble drugs. Nanosuspension is a sub-micron colloidal dispersion of drug particles which are stabilized by surfactants, polymers or a mixture of both. This formulation has a high drug loading, low incidence of side effects by the excipients, and low cost. This review describes the methods of nanosuspension production, formulation, evaluation and applications in pharmaceutical drug delivery as well as the marketed products. With this technique, the drug, dispersed in water, is grounded by shear forces to particles with a mean diameter in the nanometer range (100-1000nm). The fineness of the dispersed particles causes them to dissolve more quickly owing to their higher dissolution pressure and leads to an increased saturation solubility. This enhances the bioavailability of drugs compared with other microparticulate systems.

Keywords: Nano-suspension, Nanomedicine, Nanoscale, Hydrophobic drugs, Bioavailability.

BCDACPT/NS-055

MECHANISM OF PHYSIOTHERAPY

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Abstract:

Physiotherapy is management of pain and is essential to effectively manage painful symptoms in patients, attending palliative care. Mechanisms addresses underlying pathophysiology, also provides with understanding patients symptoms, treatment responses. Evidence suggests 5 mechanisms central sensitization, peripheral sensitization, sympathetically maintained pain, nociceptive, cognitive affective operate in patients. Pain relief is a major goal for palliative care in India, so that most palliative care interventions necessarily begin with pain relief. Physical therapists play an important

role in palliative care & are regarded as highly proficient members of a multidisciplinary healthcare team towards management of pain. Pain necessarily involves 3 different levels of classification based on pain symptoms, pain mechanisms, pain syndromes. Pain is common among patients seeking physical therapy services. Initial step in the role of a therapist's evaluation of patients with pain is identifying basis for symptoms & their occurrence. Physical therapy treatment methods have their own mechanism-specific effects which when understood & applied, would lead to an effective adjunctive role in management. Deficiencies in knowledge about pain mechanisms would lead to potentially undesirable attitudes towards patients with chronic pain. Many medicine-personnel, athletes believe, based on observations & experiences that massage can provide several benefits to the body such as increased blood flow, reduced muscle tension and increased sense of well-being. Massage produces mechanical pressure, which is expected to increase muscle compliance resulting in increased range of joint motion, decreased passive stiffness & decreased active stiffness. Mechanical Pressure changes neural excitability, increases blood flow by increasing muscle temperature.

Key Words: Pain management, pathophysiology, muscle tension

BCDACPT/NS-056

A REVIEW ON ORPHAN DRUGS

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Abstract :

An orphan drug is a pharmaceutical agent that has been developed specifically to treat a rare medical condition. The condition itself is referred to as an orphan disease & the drugs used to treat them are referred to as orphan drugs. “Orphan Drugs” there were products that no pharmaceutical sponsor wanted to develop & market; they were like homeless orphan. The Orphan Drug Act of 1983 has amended an orphan disease is defined as a rare disease or condition that affects fewer than 200000 people in the US & for which there is no reason except that cost of R&D for the indication can be recovered by sells of the production in the US. Such diseases include Chronic Lymphocytic Leukemia , Gaucher's disease , cystic fibrosis & condition related to AIDS. The FDA maintains an office of orphan products development to provide special assistance & grants to scientists with an interest in these products. Information of orphan drugs is also available from the National Organization for rare disorder. At 1999, more than 500 such biological products were registered by FDA as orphan drugs , most of which were produce currently in development. Since 1983, the FDA has approved marketing application for 120 orphan drugs to treat more than 82 rare diseases. Most of the marketed drugs are used to treat some orphan disease like Propranolol is used to treat cardio vascular disease , cimetidine treats duodenal ulcer , under the ODA & EU & many orphan drugs have been developed to treat many other such rare diseases .

Keywords Orphan Drugs , Gaucher's disease , Propranolol

BCDACPT/NS-057

ORGANIC FOOD-A NEW TREND IN INDIA

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Abstract :

India is a country that loves to celebrate food. When we go to a market, we prefer to buy fresh green leafy vegetables and fruits. But are these vegetables and fruits which appear very fresh to us really healthy and safe to us? Every morsel of food we take is important for our health and well being. Yet for decades our foods have been contaminated by harmful pesticides which are being used for better agricultural output. But the use of pesticides only leads to health and environmental deterioration. A promising solution of this problem is to adapt organic food which is a product of organic farming. In terms of health advantages, organic diets have been convincingly demonstrated to expose consumers to fewer pesticides associated with human disease and its farming has been demonstrated to have less environmental impact than conventional approaches. This production system that is managed to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity. Like the developed country, organic food is also gaining its importance in our nation and day by day its popularity is increasing. People are becoming more and more conscious of their health and prefer this. This review sheds light on organic food, its importance, states its comparison to conventional foods with respect to food safety and nutritional composition and also depicts the Indian scenario in this respect.

Keywords: Organic, Conventional Food, Nutrition.

BCDACPT/NS-058

CURRENT OPINION ON THE PROSPECTS OF ANTIRETROVIRAL THERAPY IN THE PREVENTION OF MOTHER-TO-CHILD TRANSMISSION (MTCT) OF HIV

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Abstract :

The objective of the present review is to throw light on the aspects of safety and efficacy of antiretroviral drugs in preventing mother to child transmission of HIV from findings of recent literature evidence based on clinical trials. For this purpose an extensive review was conducted of about 20 contemporary indexed journals and bibliographic databases. The global HIV pandemic is already recognised as one of the chief medical threats faced by the modern world but the matter of much concern now is a high prevalence of perinatal HIV infection due to transmission of the deadly virus from mother to child through various routes. Approximately 5-10% of all the cases infected by HIV are children. Majority of these children acquire infection through mother-to-child transmission (MTCT), also known as vertical transmission either during pregnancy, delivery, or by breast-feeding. Our research

has identified several maternal and non maternal factors associated with the development of HIV in infants. Through this presentation we also aim to throw light on the various pharmacological and non pharmacological approaches adopted currently for combating MTCT of HIV. Both prospective and retrospective clinical studies have shown that MTCT can be reduced to less than 2% by use of antiretroviral drugs in women during pregnancy and labour. The regimen is also effective in infants in the first 6 weeks of life if combined with obstetrical interventions including elective caesarean delivery and avoidance of breastfeeding. Thus this review not only summarizes the current opinion on the issue available in the literature but also presents a holistic viewpoint from a clinical perspective which may help the future researcher to frame a rationalised approach to prevent vertical transfer of virus from HIV- infected pregnant woman to her children.

Keywords: Antiretroviral drugs, HIV.

BCDACPT/NS-059

LIFE EXTENSION

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Abstract:

Life extension science, also known as anti-aging process or experimental gerontology is the study of slowing down or reversing the processes of aging to extend both the maximum and average lifespan. Some researchers in this area, and "life extensionists", "immortalists" or "longevists" (those who wish to achieve longer lives themselves), believe that future breakthroughs in tissue rejuvenation with stem cells, molecular repair, and organ replacement (such as with artificial organs or xenotransplantation) will eventually enable humans to have indefinite lifespans through complete rejuvenation to a healthy youthful condition. The sale of putative anti-aging products such as nutrition, physical fitness, skin care, hormone replacements, vitamins, supplements and herbs is a lucrative global industry, and this proves that peoples want to live more than usual. During the process of aging, an organism accumulates damage to its macromolecules, cells, tissues and organs. Specifically, aging is characterized as and thought to be caused by "genomic instability, telomere attrition, epigenetic alterations, loss of proteostasis, deregulated nutrient sensing, mitochondrial dysfunction, cellular senescence, stem cell exhaustion, and altered intercellular communication." Extension of expected lifespan can often be achieved by access to improved medical care, vaccinations, good diet, exercise and avoidance of hazards such as smoking. Theoretically, extension of maximum lifespan in humans could be achieved by reducing the rate of aging damage by periodic replacement of damaged tissues, molecular repair or rejuvenation of deteriorated cells and tissues, reversal of harmful epigenetic changes.

Key words: Anti-aging , Gerontology ,xenotransplantation , proteostasis

BCDACPT/NS-060

NATURAL SOURCES FOR CANCER TREATMENT

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Abstract :

Malignant disease accounts for a high proportion of deaths in industrialized countries. The anticancer drugs are to give palliation, induce remission and, if possible, cure. Cancer is one of the most widespread and feared disease in the world today as it is known to be difficult to cure. The main reason for this difficulty is that cancer results from the uncontrolled multiplication of modified normal human cells .There are many synthetic drugs like mercaptopurine, fludarabine, melphalan, cyclophosphamide, are used for cancer treatment. But these drugs have sever side effects. Man has always relied on nature for survival. Many natural product derived agents currently are used in routine medical practice. Several new anticancer agents that entered the market in the 1990s were obtained from natural sources. There are also a significant number of naturally derived new anticancer candidate compounds that are currently undergoing preclinical and early clinical development. Herbal plants and their derivatives are widely used in the treatment of cancer. In many instances, the actual compound isolated from the plant may not serve as the drug, but leads to the development of potential novel agents.

Keywords: Cancer , Uncontrolled Multiplication, Herbal Medicine , Novel agent

BCDACPT/NS-061

ASSISTANCE AND INNOVATIONS OF ARTIFICIAL INTELLIGENCE AND ROBOTICS IN PHARMACY.

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Abstract:

Intelligence has been defined in many different ways including logic, abstract thought, understanding, self-awareness, communication, learning, knowledge, retaining, planning and problem solving and Artificial Intelligence is the technology and a branch of computer science that studies and develops intelligent machines and software while robotics is the science and technology of robots, their design, manufacture and applications. It has many applications in our general lives like it deals with Knowledge Representation, Vision System, Learning system, Game playing, Ontology etc. Their combination has also a huge effect in the pharmaceutical field as it is capable in conducting surgery, capable in sorting out syringes, active in radio pharmaceutical inspections, helps in packaging, handling of soft infusion bags etc. It saves not only human effort but also save time. All the works are done with precision and accuracy. In spite of all the advantages it is very much costly and has many ethical issues. Artificial intelligence has been the subject of tremendous optimism but has also suffered stunning setbacks. **By spreading innovations & by igniting our mind, we may adopt this challenge.**

Keywords: Artificial Intelligence, Robotics, Applications.

BCDACPT/NS-062

ARTIFICIAL BLOOD

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Abstract:

Artificial blood is a substances used to mimic fulfil some function of biological blood. It aims to provide an alternatively to blood transfusion. which is transferring blood from one person to another. oxygen carrying substitutes: it is called artificial haemoglobin, is an artificially made red blood cell substitute whose main function is to carry oxygen as does natural haemoglobin. advantages over human blood: it is uses the following reasons- it is believed that as much as 40% of the population has hiv/aids, although testing is not financially feasible. A disease-free source of blood substitutes would be incredibly beneficial in these regions. In battlefield scenarios, it is often impossible to administer rapid blood transfusions. medical care in the armed services would benefit from a safe, easy way to manage blood supply. Great benefit could be derived from the rapid treatment of patients in trauma situations. Because these blood substitutes do not contain any of the antigens that determine blood type, they can be used across all types without immunologic reactions. An oxygen-carrying blood substitute can perform this function until blood is naturally replenished. Risks haemoglobin-based blood substitutes may increase the odds of deaths. According to studies of outcomes of transfusions given to trauma patients in 2008. current therapeutics are perfluorocarbon based, haemoglobin based. hyperbranched polymer protected porphyrin.

Key words: Cognition, ethology, cognitive ethology, Behavior, psychology.

BCDACPT/NS-063

DOWN SYNDROME AND AUTOSOMAL ABNORMALITY PRESENT IN HUMAN BODY

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Abstract:

In 1866 an English physician John L. Down reported some interesting observations. As medical superintendent of an asylum for severely retarded, he had noticed that about 10% of the residents resembled each other and could be easily distinguished from the rest of the patients. 'So marked believe that specimens compared are not children of some parents. This condition is called mongolism is known as Down Syndrome. Down Syndrome is a chromosomal disorder caused by an error in cell division that result extra 21st chromosome. Through a series of screenings and tests, Down Syndrome can be generally detected after a baby is born. In Mothers in midwifery, about 1 in 35 pregnancies results in a baby with Down Syndrome. Trisomy 21 occurs with a frequency of about 3,510 per million conceptions and about 1430 per 1 million birth. This suggests a considerable number of spontaneous abortion of this chromosomal constitution. Trisomy 21(47,XX,+21) is a caused by a meiotic nondisjunction event. A normal gamete(either egg or sperm) has one copy of

each chromosome(23 total). Down Syndrome individuals can also result from a different sort of chromosomal mutation called Robertsonian translocation which produces three copies of the long arm of chromosome 21. This form of Down Syndrome is called Familial Down Syndrome. The symptoms are short stature(height), weak muscle, a short and wide neck, short arm and leg, slanted eyes etc. Individual with Down Syndrome should be fully in family and community life.

Keywords: Down syndrome, Mongolism, Familial Down syndrome, Trisomy.

BCDACPT/NS-064

**FORMULATION AND CHARACTERIZATION OF NOVEL
BIOPOLYMER/HYDROXYAPATITE NANOCOMPOSITE BEADS**

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Abstract:

Nano-sized materials possess uniqueness in their properties and designs as compared to their bulk counterparts. For this reason, they have attracted a great deal of attention from the scientific community. Nanocomposite is a composition having a dispersed material that has one or more dimensions, such as length, width and thickness, in the nanometer size range. The nano-sized materials have emerged as suitable alternatives to overcome drawbacks of composite and microcomposite materials. Biodegradable polymer /hydroxyapatite nanocomposites are a novel class of materials which have recently attracted interest as biomaterials and as drug delivery vehicles. The objectives of the present study were the preparation, evaluation and drug delivery behaviour of nanocomposite beads based on biodegradable polymer sodium alginate and inorganic material hydroxyapatite. In the present study, biopolymer / hydroxyapatite nanocomposite beads have been prepared, optimized and studied in parallel. The prepared nanocomposite beads were characterized by means of XRD, zeta sizer, and SEM, for better understanding regarding their composition and surface morphology. Polydispersity index of particles and mean particle sizes of the nanocomposite beads were measured by zeta sizer. XRD reports confirm the nanocrystalline composition and crystallite size. SEM provided the nanocomposites shapes and their surface topography. The average diameters of particles in the nanocomposites were found to be around 200 nm. We used this biopolymer/hydroxyapatite nanocomposite beads to evaluate its drug delivery behaviour using ofloxacin as a model drug. The in vitro drug-release study confirmed that prepared biopolymer/hydroxyapatite nanocomposite beads exhibited extended release period of drug as compared to the pristine biopolymer sodium alginate.

Keywords: Biopolymer, Sodium alginate, Hydroxyapatite, Nanocomposite, Drug release.

BCDACPT/NS-065

DRUG INDUCED DISEASES

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Abstract:

Each year, more than 9.6 million adverse drug reactions occur in older Americans. One study found that 37 percent of adverse reactions in the elderly were not reported to the doctor, presumably because patients did not realize the reactions were due to the drug. This is not too surprising considering that most doctors admitted they did not explain possible adverse effects to their patients serious problem exists because both doctors and patients do not realize that practically any symptom in older adults and in many younger adults can be caused or worsened by drugs. Some doctors and patients assume that what are actually adverse drug reactions are simply signs of aging. As a result, many serious adverse reactions are entirely overlooked or not recognized until they have caused significant harm. The drugs responsible for the most serious adverse reactions in older adults are tranquilizers, sleeping pills, and other mind-affecting drugs; cardiovascular drugs such as high blood pressure drugs, digoxin, and drugs for abnormal heart rhythms; and drugs for treating intestinal problems.

Keywords- Drug induced diseases, cardiovascular drugs, digoxin

BCDACPT/NS-066

RECENT ADVANCES IN HERBAL MEDICINES FOR THE TREATMENT OF PARKINSON'S DISEASE

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Abstract:

Herbal medicines have attracted considerable attention in recent years, which are used to treat Parkinson's disease (PD). Parkinson's disease is a chronic neurological disorder. In ventral midbrain, particularly in substantia nigra pathological features show that dopaminergic neurons progressively degenerate, which causes a consequent reduction of dopamine (DA) levels in the striatum. The three main strategic developments that have led to progress in the medical management of PD have focused on improvements in dopaminergic therapies, the identification of non-dopaminergic drugs for symptomatic improvement and the discovery of compounds to modify the course of PD. The relevant compounds, herbal extracts and formulations belong to 24 genera and 18 families, such as *Acanthopanax*, *Alpinia* and *Astragalus* were reported to be effective on PD models by modulating multiple key events or signaling pathways implicated in the pathogenesis of PD. The plant species in these genera and families may be the most promising candidates for further investigation and deserve further consideration in clinical trials. The herbal medicines can be an alternative and valuable source for anti-Parkinsonian drug discovery. Active components in some of the herbal extracts and the compatibility law of herbal formulations remain to be further investigated.

Key Words: Parkinson disease, Dopamine, Herbal medicine.

BCDACPT/NS-067

AYURVEDIC BHASMA AN ANCIENT FORM OF NANOTECHNOLOGY

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Abstract:

Ayurveda is an ancient traditional system of medicine, which has been involved and practiced in India for several centuries. It deals with a number of metals and minerals like silver, gold, copper, iron, mica, black bitumen etc. has been used as an oral medicine in India for many years for the treatment of diabetes, spleen enlargement, diarrhoea and various skin diseases etc after purified by repeated treatment with plant extracts and animal products. After the purification is subjected to the *marana* process which convert the drug into ash form which is called *Bhasma*. These processes increase the potency and quality of the material and reduce the particle size to make the material non-irritant to the G.I. tract. When the *bhasma* particles are examined microscopically through SEM and TEM it fall under the nanoparticles. Nanotechnology is the science of 21st century that deals with matter at the scale of 1 billionth of a meter used in the medicinal purposes. The general range of nanoparticles is 1 to 100nm. This review focuses on the principal and advantages behind the Bhasma and nanoparticles in medicinal field.

Keywords : Ayurveda, Bhasma, Nanoparticles.

BCDACPT/NS-068

ELECTRONIC TONGUE: A NEW TASTE SENSOR

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Abstract:

The objective of this review is to focus on the electronic tongue-a new taste sensor. Taste has an important role in the development of oral pharmaceutical formulation. With respect to patient acceptability and compliance, taste is one of the prime factors determining the market penetration and commercial success of oral formulations, especially in pediatric medicine. Taste assessment is one important quality-control tool for evaluating taste-masked formulations. Hence, pharmaceutical industries invest time, money and resources into developing palatable and pleasant-tasting products. The primary method for the taste measurement of a drug substance or a formulation is by human sensory evaluation. Therefore, taste-sensing analytical devices, which can detect tastes. The taste sensors can be considered as a valuable tool in the evolution

of bitterness intensity in function of time, which is essential in the selection of an optimal formulation. A recent development in the taste masking field is the introduction of electronic tongues, which mimic the human gustatory system. The electronic tongue is a potential analytical tool to assess the masking effect of non-medicinal ingredients on the bitterness of pure medicinal compound. The electronic tongues having more numbers of applications and show great solutions to many biomedical problems. The electronic tongue is useful for a wide variety of industries ranging from environmental control to blood analysis. The present review describes different aspect of new analytical tool - electronic tongue.

Key words: Electronic tongue, Taste, multichannel Taste sensors, Taste masking.

BCDACPT/NS-069

**EFFECT OF SELECTED ANTI ASTHMATIC PLANT CONSTITUENTS
AGAINST MICROORGANISMS CAUSING UPPER RESPIRATORY TRACT
INFECTION**

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Abstract

Asthma is a common chronic inflammatory disease of the airways characterized by bronchospasm, coughing, chest-tightness and shortness of breath. Herbs have been used for centuries in the treatment of asthma owing to the large number of side-effects of synthetic drugs. Thus, the present study aims to evaluate the effect of widely used ayurvedic anti-asthmatic herbal extracts on organism causing upper respiratory tract infection. *Coleus froskohlii*, *Piper longum*, *Adhatoda vasaka* and *Curcuma longa* extracts were obtained from Sami labs. The test organisms were obtained from patients and inoculums were prepared on blood agar media and chocolate agar media. In Vitro antibacterial activities were carried out for the selected extract by disc diffusion method. The results were recorded by measuring the zone of growth inhibition surrounding the disc. Clear inhibition zones around the disc indicate the presence of anti-bacterial activity.

Keywords: asthma, *Piper longum*, *Adhatoda vasaka*, *Curcuma longa* extract, Inoculums, chocolate agar media, disc diffusion method, zone of inhibition.

BCDACPT/NS-070

**NAIL AS A PROMISING DRUG DELIVERY SYSTEM FOR CONTROLLED
RELEASE**

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Abstract:

The objective of this article is to point out the effectiveness of “NAIL” as a drug delivery system for controlled release dosage forms. Nail permeability is quite low and limits topical therapy to early disease states such as onychomycosis (fungal infections of the nail). Current research on nail

permeation focuses on altering the nail plate barrier by means of chemical treatments, penetration enhancers as well as physical and mechanical methods is reviewed also the recent research into ungual drug delivery is reviewed, a new method of nail sampling is examined. Drug transport into the nail plate can be assisted by filing the nail plate before topical application of drug formulations as well as by the use of chemical enhancers. Finally limitations of current ungual drug permeability studies are briefly discussed and the factors, which affect drug uptake and permeation through the nail plate such as solute molecular size, hydrophilicity/hydrophobicity, charge, and the nature of the vehicle, are then discussed, and drug-containing nail lacquers which, like cosmetic varnish, are brushed onto the nail plates to form a film, and from which drug is released and penetrates into the nail are reviewed. The nail plate behaves like a concentrated hydrogel to permeating molecules and diffusion of molecules through the nail plate has been compared to the diffusion of non-electrolytes through polymer gels. Thus, for optimal ungual permeation and uptake, drug molecules must be of small size and be uncharged.

Key words: drug permeability, nail plate, Onychomycosis, Psoriasis, nail lacquers

BCDACPT/NS-071

METHOD DEVELOPMENT, EVALUATION & VALIDATION OF BRONOPOL BY REVERSE PHASE HPLC IN PURE & IT'S MARKETED FORMULATION

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Abstract :

Bronopol is an organic compound that is used in consumer products as an effective preservative agent, as well as a wide variety of industrial applications (almost any industrial water system is a potential environment for bacterial growth, leading to slime and corrosion problems - in many of these systems Bronopol can be a highly effective treatment). The proposed work efforts developed by *Salt characterization (By DSC, IR Spectra, TLC)*, HPLC and Validation of developed method and also statistical treatment of data done by ANOVA. Chromatography was carried out on a BDS Hypersil C18 (4.6 mm × 250 mm, 5 µm) using Water: Acetonitrile: Phosphate Buffer in the ratio of 94.5:5:0.5 (v/v/v) as the mobile phase at a flow rate of 1.0 mL/min and eluents were monitored at 214 nm. The average retention time of Bronopol was found to be 8.160 min. The method was validated for specificity, linearity, precision, accuracy, ruggedness and solution stability. The calibration curve was linear ($R^2 \geq 0.9998$) over the range of 4.0-12.0 µg/mL. The standard deviation and %RSD calculated for the proposed method is low, indicating high degree of precision of the method. The results of the recovery studies performed show the high degree of accuracy of the proposed method.

Keywords: Preservative, Chromatography.

BCDACPT/NS-072

POLIOMYELITIS A BRIEF REVIEW

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Abstract

Poliomyelitis is an acute infection that follows invasion through the gastro intestinal tract by one of the three serotypes of polio virus (serotypes 1, 2 and 3). The virus replicates in the gut and has a high affinity for nervous tissue. Spread occurs by way of the bloodstream to susceptible tissues or by way of retrograde axonal transport to the central nervous system. The infection is most frequently clinically inapparent, or symptoms may range in severity from fever to aseptic meningitis or paralysis. Headache, gastrointestinal disturbance, malaise and stiffness of the neck and back, with or without paralysis, may occur. Transmission is through contact with the faeces or pharyngeal secretions of an infected person. The incubation period ranges from three to 21 days. Polio virus replicates for longer periods and it can be excreted for three to six weeks in faeces and two weeks in saliva. Cases are most infectious immediately before, and one to two weeks after the onset of paralytic disease. When the infection is endemic, the paralytic disease is caused by naturally occurring polio virus 'wild virus'. The live attenuated vaccine virus retains the potential to revert to a virulent form that can rarely cause paralytic disease. This is called vaccine-associated paralytic polio (VAPP). When wild viruses have been eliminated, VAPP cases can occur rarely where live attenuated vaccines are used.

Key words: Polio virus, susceptible tissues, 'wild virus', paralysis, VAPP.

BCDACPT/NS-073

NEEDLE FREE INJECTION SYSTEMS

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Abstract:

The objective of this review article is to focus on Needle-free injection systems, where are novel ways to introduce various medicines into patients without piercing the skin with a conventional needle. Needle-free technology offers the very obvious benefit of reducing patient concern about the use of needle. Needle free injection gives very effective injections for a wide range of drugs and bioequivalent to syringe and needle, results in less pain, and is strongly preferred by patients. Additional benefits include very fast injection compared with conventional needles and no needle disposal issues. Not only it can benefit the pharmaceutical industry in increasing product sales, it has the added potential to increase compliance with dosage regimens and improved outcomes. Today, they are a steadily developing technology that promises to make the administration of medicine more efficient and less painful.

Key words : Needle free injections, Needle free devices, Drug administration and Drug delivery

BCDACPT/NS-074

**FORMULATION AND EVALUATION OF ORALLY
DISINTEGRATING TABLETS CONTAINING OFLOXACIN**

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Abstract:

The present investigation was undertaken to fabricate and evaluate orally disintegrating tablets of Ofloxacin by direct compression method. The aim of the present study was to improve dissolution rate through formulation of fast dissolving tablet of Ofloxacin. The drug-resin (resinate) complex was prepared by batch process, six batches were prepared using three ion exchange resins (Indion 414, Tulsion 335, Indion 204) in different concentration so as to find out the maximum drug loading efficiency with complete taste masking. The loading of Ofloxacin onto ion exchange resin depends upon the presence of cationic form of the drug in solution. Different parameters of the formulated tablets were evaluated viz. *Tablet thickness, Weight variation, Friability, Hardness, Wetting time, Water absorption ratio and Disintegration time*. The hardness of ODTs was generally kept lower than conventional tablets as increased hardness delays the disintegration of the tablet. A good compromise between mechanical strength and disintegration time could be done to get satisfactory mouth dissolving formulation. The present study demonstrates that satisfactory orally disintegrating tablets of Ofloxacin fulfilling all the compendial requirements can be conveniently prepared by simple and cost-effective direct compression technique for improving patient compliance.

Key Words: Ofloxacin, Orally disintegrating tablets (ODT), Drug-resin complex.

BCDACPT/NS-075

**HIGH INTENSITY FOCUSED ULTRASOUND(HIFU)-A NEW WAY OF
THERAPY**

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Abstract:

High intensity focused ultrasound (HIFU), is a highly medical procedure that applies high focused ultrasound energy to locally heat and destroys diseased or damaged tissue through ablation. HIFU is a hyperthermia therapy, a class of clinical therapies that use temperature to treat diseases. HIFU is also one modality of therapeutic ultrasound, involving minimally invasive or non-invasive methods to direct acoustic energy into the body. In addition to HIFU, other modalities include ultrasound-assisted drug delivery, ultrasound hemostasis, ultrasound lithotripsy, and ultrasound-assisted thrombolysis. In clinical HIFU procedures are typically performed in conjunction with an imaging procedure to enable treatment planning and targeting before applying a therapeutic or ablative levels of ultrasound energy. This therapy is recently introduced for the treatment for Uterine Fibroids

Benign Neck Tumors and Benign Breast Tumors, Essential Tremor, Neuropathic Pain and Parkinson's Disease, Prostate Cancer. Currently, MRgHIFU is an approved therapeutic procedure to treat uterine fibroids in Asia, Australia, Canada, Europe, Israel and the United States. USG HIFU is approved for use in Bulgaria, China, Hong Kong, Italy, Japan, Korea, Malaysia, Mexico, Poland, Russia, Romania, Spain and the United Kingdom. Research for other indications is actively underway, including clinical trials evaluating the effectiveness of HIFU for the treatment of cancers of the brain, breast, liver, bone, and prostate. At this time non-image guided HIFU devices are cleared to be on the market in the US, Canada, EU, Australia, and several countries in Asia for the purposes of body sculpting.

Keywords: Abalation, non invasive, haemostatis, uterine fibroids, benign breast tumors.

BCDACPT/NS-076

NATURAL FOOD COLORS

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Abstract:

The use of food colours goes down long back as human civilization dated. Food colors are of two types natural and synthetic. Natural colours are any dye, pigment or substance that obtained from animals, vegetables and minerals. These colours come in many forms consisting of liquids, powders, gels and pastes. Natural colours have great role in food industry. Colours are added in foodstuffs to make it more acceptable and some time can protect vitamins and flavours during storage. Natural food colors have several advantages as well as limitations. Annatto, Saffron, Betanin, Chlorophyllin, Lycopene, Pandan, Turmeric, Butterfiy pea, Caramel, Elderberry, Cochineal, Paprika etc. are some examples of natural food colors. Nowadays these food colors are more in demand because of their less or no toxic effects in human and hence they are proving their economical importance in edible colour industry.

Keywords: Natural colour, food colour, lycopene.

BCDACPT/NS-077

COMPERATIVE QSAR STUDY ON PYRAZOLO [1, 5-A] PYRIMIDINE, TARGET ON CHKI

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Abstract:

Check point kinase 1 is a serine/threonine kinase that controls the cellular damage. In response to DNA damaging agent, CHK1 is activated by phosphorylation. Inhibition of CHK1 initiates cell cycle arrest, resulting in genomic instability & ultimate progression into mitosis & cell death. The inhibition of CHK1 creates a 'synthetic lethal' response by which aberrant cells can't be replicated which should impede the progression of cancer. Due to the fact for inhibition of CHK1 represents a targeted approaches to enhance the cytotoxicity of DNA damaging agents towards tumors cells while having a lesser effect on normal cells, has been an attractive target in the oncological field. QSAR study reveals that wangford and

electrostatic potential charge is important for that data set. Increasing charges at atom numbers 7, 8 and 9 may be conducive and at atom number 3 and 5 may be detrimental for oncogenic activity. Increasing value of the electrostatic potential charges at atom numbers 3 and 5 may be advantageous thus, electron releasing group at these positions beneficial for enhancing the cytotoxicity of DNA damaging agents. At atom number 10 the nitrogen atom containing lone pair electron may be detrimental but electron withdrawing group as well as increase positive charge may be conducive for much better therapeutic activity. The increase the number of multiple bonds of whole molecules is inauspicious for biological activity. More over the statistical analysis give an insight about structural necessities to improve biological activities.

Key words: CHK1, QSAR, Cell Cycle

BCDACPT/NS-078

TEST TUBE BABY- A REVIEW

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Abstract:

Human are one of the beautiful and intelligent creation of God among which children are considered as a precious gift. Every individual has most likely desire of having a children that can make their life full of joy and happiness. Unfortunately few are deprived of this gift. Development of science and technology has always come forward to solve such type of complications. One of such well known successful technology is I.V.F and Test tube baby. It's a process for the treatment of infertility where other methods have failed. In this, egg cells are fertilized by sperm outside the woman womb and then the embryo is transferred to the woman uterus. In 1978, first test tube baby named "Louis Brown" has been given birth by this technique and after that the point of view regarding infertility got changed. This process involves several methods like screening, counseling, ovarian stimulation, egg collection, semen collection, fertilization, embryo transfer and pregnancy test that must be carried out cautiously to accomplish the process successfully. There are some other techniques which helps in I.V.F process like I.C.S.I., I.U.D.I., F.E.T., D.O.P., T.E.S.E., P.E.S.A, G.I.F.T., P.G.D. This technology has also got remarkable response in the world commercially, where its been opted by many couples to have children. Hopefully this will serve in a much better way to give a better future.

Keywords: Test tube baby, I.V.F., I.C.S.I., F.E.T.

BCDACPT/NS-079

ANTIOXIDANT AND PROOXIDANT PROPERTIES AS WELL AS HEALTH

BENEFITS OF FLAVONOIDS

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Abstract:

The interest in possible health benefits of flavonoids has increased owing to their potent antioxidant and free radical scavenging activities observed *in vitro*. Flavonoids

(Latin word "flavus", meaning yellow) are ubiquitous plant secondary products. The antioxidant capacities of many flavonoids are much stronger than those of vitamins C and E. Flavonoids cannot only be considered purely as antioxidants, since under certain reaction conditions they can also display prooxidant activity. This unexpected behaviour could explain, in part, the observed toxicity of some flavonoids *in vivo*. It seems that prooxidant or antioxidant properties of a particular flavonoid depend most of all on its concentration. Their prooxidant properties could be associated with a cell signalling by which flavonoids contribute to the co-ordination of cell functions. Flavonoids can induce detoxifying enzymes is a major mechanism by which flavonoids protect organism against mutagens and carcinogens, i.e., act as cancer chemopreventive agents. Due to their prooxidant properties, they are able to cause oxidative damage by reacting with various biomolecules, such as lipids, proteins and DNA. Hence, the aim of this review is to discuss both the antioxidant and prooxidant effects of flavonoids. The extent to which flavonoids are able to act as anti- or prooxidants *in vivo* is still poorly understood and this topic clearly requires further studies.

Key Words: Flavonoids, Health benefit, Antioxidant, Prooxidant.

BCDACPT/NS-080

STEROIDAL GLYCOSIDE

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Abstract :

Glycosides, in general, are defined as the condensation products of sugars with a host of different varieties of **organic hydroxyl (thiol) compounds** (invariably monohydrate in character). The noncarbohydrate moiety is usually termed as **aglycone or genin** and the carbohydrate moiety is known as glycone. There are 4 types of glycoside on the basis of linkage- i) C type, ii) O type, iii) S type & iv) N type. **Steroid glycosides** are also referred to as '**Cardiac glycosides**'. A host of medicinal plants comprise of cardiac or cardiotonic glycosides, collectively known as '**steroid glycosides**', and they have since been employed as *arrow poisons* or *cardiac drugs*. There are two types of steroid glycoside i) Cardenolide & ii) Bufadienolide. It is regarded as one of the most important of all naturally occurring plant products. The **cardiac glycosides** are basically steroids with an inherent ability to afford a very specific and powerful action mainly on the cardiac muscle when administered through injection into man or animal. As a word of caution, a small amount would exhibit a much needed stimulation on a diseased heart, whereas an excessive dose may cause even death. Generally, the **steroid glycosides** are invariably employed in the therapeutic domain primarily for two vital reasons, namely: (a) to enhance the tone, excitability and above all the contractibility of the cardiac muscle; and (b) to increase the diuretic action, due principally to the enhanced renal circulation (inherent secondary action). A few important plant contains steroid glycoside are Digitalis, Strophanthus etc.

Keywords: Glycoside, Steroid, Aglycone, Genin, Glycone, Cardenolide, Bufadienolide.

BCDACPT/NS-081

A REVIEW ON EXCIPIENTS FROM NATURAL SOURCES

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Abstract:

An excipient is an inactive pharmaceutical ingredient (IPI) which is formulated alongside active pharmaceutical ingredient (API) of a medication for the purpose of bulking up formulations that contain potent active age. Bulking up helps to maintain convenient & accurate dispersion of a drug substance when producing a dosage form. They can also serve various therapeutic enhancing purpose such as facilitating drug adsorption & solubility & pharmacokinetic consideration. The selection of appropriate excipients depends on the route of administration & the dosage form. A wide range of excipients has been provided by the nature & it can be used for the preparation of wide range of dosage forms. Gums & mucilage are widely used as natural excipients for conventional & novel dosage forms. These natural excipients have some advantages as they are chemically inert, non toxic, less expensive & widely available. Development of excipients is equally stringent process as development of API. The physical property of dosage form depends on the physicochemical properties of excipients. Therefore it is essential to establish the physicochemical properties of excipients to predict the functionality of these. Even though there are a large number of excipients available for formulation, but for faster manufacturing, there is a need for new materials & the objective of the review is to highlight to that only.

Keywords: Excipients, Active Pharmaceutical Ingredient. Novel Dosage Form.

BCDACPT/NS-082

ESTABLISHMENT OF COST EFFECTIVE ECO-FRIENDLY NOVEL EXTRACTION METHODOLOGIES TO REVIEW THE FACTOR-RESPONSE RELATIONSHIP HIDDEN IN THE EXPERIMENTAL DATA COLLECTED FROM THE EXTRACTION PROCESS OF POTENT BIOACTIVES BY SOFT COMPUTING TECHNIQUES

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Abstract :

Extraction forms the very basic step in natural product drug discovery research. A poorly optimized and planned extraction methodology can jeopardize the entire mission. To provide a vivid picture of different chemometric tools and planning for process optimization and method development in extraction of botanicals with emphasis on microwave assisted extraction (MAE) and Ultrasound assisted extraction (UAE) of botanicals. Studies involving the applications of chemometric tools in combination with MAE of botanicals in presented here. While attempting to discover the significant extraction factors and then optimizing a response by fine tuning those factors, experimental design or statistical design of experiment (DoE) which is a core area of study in chemometrics has been used for

statistical analysis and interpretations. In this paper a brief explanation of the different aspects and methodologies related to MAE of botanicals that have been subjected to experimental design are reviewed here in particular along with some general chemometric tools and the steps involved in its practice is presented. A detailed study on various factors and responses involved during the optimization is also presented. This article shall assist to get a better inside into the chemometric strategies of process optimization and method development which shall in turn improve the decision making process in selecting influential extraction parameters. We gratefully acknowledge the aid of CSIR (Council of Scientific and Industrial Research, New Delhi) (Grand no: 01(2430)/10/EMR II) for providing financial support to Dr Subhash C. Mandal and Jadavpur University for providing facilities to carry out the project work.

BCDACPT/NS-083

TECHNIQUES OF MICROENCAPSULATION

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Abstract :

Microencapsulation is a process by which solids, liquids may be enclosed in microscopic particles formation of thin coatings of wall material around the substances. The product obtained by this process is called as micro particles, microcapsules, microspheres which differentiate in morphology and internal structure. When the particle size is below 1 μ m are known as nanoparticles, nanocapsules, nanospheres respectively. Particles having diameter between 3-800 μ m are known as micro particles or microcapsules or microspheres. Particles larger than 1000 μ m are known as macroparticles. Microencapsulation can be done to protect the sensitive substances from the external environment; to mask the organoleptic properties like colour, taste, odour of the substance; to obtain controlled release of the drug substance; to get targeted release of the drug; to avoid adverse effects like gastric irritation of the drug e.g. aspirin is the first drug which is used to avoid gastric irritation. Micro particles or microcapsules consist of two components i) Core Material- The core material, defined as the specific material to be coated, can be liquid or solid in nature. Examples- Aspirin, Paracetamol. ii) Coating Material- While selecting a polymer the product requirements i.e. stabilization, reduced volatility, release characteristics, environmental conditions, etc. should be taken into consideration. Coating materials have been used; example- polyvinyl alcohol, ethyl cellulose, cellulose acetate phthalate. There are various process of Microencapsulation (a) Physical methods such as Pan coating, air suspension, Centrifugal extrusion, Vibrational Nozzle, Spray drying and congealing, Multiorifice-centrifugal process. (b) Chemical methods- Coacervation phase separation, Matrix polymerization, Solvent evaporation techniques, Interfacial polymerization (IFP), In situ polymerization.

Keywords: Microencapsulation, Nanoparticle, In situ, Polymerisation.

BCDACPT/NS-084

TASTE MASKING TECHNOLOGY

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Abstract:

Oral administration of pharmaceuticals is one of the most popular methods of drug delivery. Many orally administered drugs elicit bitter taste. Palatability is an extremely important factor in ensuring the likelihood that the recipients will intake the pharmaceuticals. A constant problem is treatment of patient their unwillingness to swallow solid dosage form especially in children and the elderly. These dosage forms permit perceptible exposure of active drug ingredient to the taste bud. Accordingly, masking of unpleasant taste characteristics of drug is an important factor in formulation of these agents. To overcome this problem, techniques are developed to mask the bitter or unpleasant taste of drug. The various techniques that are reported includes addition of flavouring and sweetening agents, Microencapsulation, Bitterness inhibitor etc. According to the year 2003 survey of pediatricians by the American association of pediatrics, unpleasant taste was the biggest barrier for completing treatment in pediatrics. The article reviews the trends in taste masking technologies. It also discusses the possible reasons for the change of preferences in the taste masking technologies with time. The prime factors critical to the selection of an optimal taste masking techniques such as the extent of drug bitterness, solubility, particle characteristics, dosage form and dose are briefly discussed. After considering all these factors it is concluded that taste masking technology is a viable strategy to improve the patient compliances especially for bitter drugs. With ongoing advancements, using a combination of various taste masking technologies, future look promising for taste masking of bitter drugs.

Keywords : Palatability, Bitter taste.

BCDACPT/NS-085

HUNTINGTON DISEASE: A REVIEW

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Abstract

Huntington disease (HD) is a rare neurodegenerative disorder of the central nervous system characterized by unwanted choreatic movements, behavioral and psychiatric disturbances and dementia. Mean age at onset of symptoms is 30-50 years. In some cases symptoms start before the age of 20 years with behavioral disturbances and learning difficulties. The classic sign is chorea that gradually spreads to all muscles. All psychomotor processes become severely retarded. HD is an autosomal dominant inherited disease caused by an elongated CAG repeat on the short arm of chromosome 4p in the Huntingtine gene. Diagnosis is based on clinical symptoms and signs in an individual with a parent with proven HD, and is confirmed by DNA determination. Differential diagnosis include other causes of chorea including general internal disorders or iatrogenic disorders. Prenatal diagnosis is possible by chorionic villus sampling or amniocentesis. There is no cure. Management should be multidisciplinary and is based on treating symptoms with a view to improving quality of life. Chorea is treated with dopamine receptor blocking or depleting agents. Medication and non-

medical care for depression and aggressive behavior may be required. The progression of the disease leads to a complete dependency in daily life, which results in patients requiring full-time care, and finally death. The most common cause of death is pneumonia, followed by suicide.

Keywords: Huntington, Chorea, Psychiatric, Dopamine receptor.

BCDACPT/NS-086

MONOCLONAL ANTIBODIES: THE SIGNIFICANCE IN CANCER

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Abstract:

Monoclonal Antibodies (MABs) are biological therapy. Monoclonal means all one type. So each MAB is a lot of copies of one type of antibody. MABs are designed to recognise and attach to specific proteins on the surface of cells. Each MAB recognises one particular protein; so different MABs have to be made to target different types of cancer. Many different MABs are already available to treat cancer. It can take a long time to develop this type of treatment because making MABs can be very complicated. Some MABs trigger the immune system to attack and kill cancer cells. Although cancer cells are abnormal, they develop from normal cells so they can be difficult for the immune system to spot. Some MABs simply attach themselves to cancer cells, making them easier for the cells of the immune system to find them. Ex-Rituximab (Mabthera) for non Hodgkin lymphoma (NHL) and Alemtuzumab (MabCampath) for chronic lymphocytic leukaemia (CLL). Monoclonal antibody drugs were initially used to treat advanced cancers that hadn't responded to chemotherapy or cancers that had returned despite treatment. However, because these treatments have proved to be effective, certain MAB treatments are being used earlier in the course of the disease. Ex-Rituximab used as an initial treatment in some types of non-Hodgkin's lymphoma, and Trastuzumab (Herceptin) used in the treatment of early breast cancer. Many of the MAB therapies are still considered experimental. For this reason, these treatments are usually reserved for advanced cancers that aren't responding to standard, proven treatments.

Key words: Cancer, Monoclonal Antibody, Lymphoma.

0BCDACPT/NS-087

FAST DISSOLVING DRUG DELIVERY SYSTEM

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Abstract:

Drug delivery is the method or process of administering a pharmaceutical compound to achieve a therapeutic effect in humans or animals. Fast-dissolving drug-delivery systems were first developed in the late 1970's as an alternative to tablets, capsules, and syrups for paediatric, geriatric, and bedridden patients who experience difficulties swallowing traditional oral solid dosage forms. In response to this need, and as well

as patient convenience and compliance a variety of orally disintegrating tablet (ODT) formats were commercialized. Most ODT products were formulated to dissolve in less than one minute when exposed to saliva to form a solution that could then be more easily swallowed. Fast-dissolving dosage forms include tablets, films and microspheres. Tablets are the most commonly used amongst them. Recently fast dissolving dosage forms have started gaining popularity and acceptance as new drug delivery systems due to their unique properties. They quickly disintegrate and dissolve in the mouth and can be administered without water, making them particularly suitable for paediatric and geriatric patients. It has more rapid drug action from the pre-gastric area which may produce quick on set of action. Pre-gastric absorption of drug avoids hepatic metabolism, which reduces the dose and increase the bioavailability. The aim of the present investigation is to analyse and review rapidly dissolving dosage forms.

Key Words: Fast dissolving films, ODT, Disintegration time, Bioavailability.

BCDACPT/NS-088

**PHENOLIC ANTIOXIDANT GUIDED BIOFRACTIONATION: A NOVEL
APPROACH FOR DRUG DISCOVERY FROM INDIAN TRADITIONAL
MEDICINE IN THE TREATMENT OF DIVERSE DISEASES**

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Abstract :

Our aim is to assess the secondary metabolites, total phenolics and total flavonoids content of the different fraction viz., n-hexane, ethyl acetate, water and chloroform of a traditionally used medicinal plant i.e. the leaves extract of *Diospyros melanoxylon* Roxb. Phytochemical screening revealed the presence of carbohydrates, alkaloids, steroids, flavonoids, tannins, terpenoids, triterpenoids and saponins in different fractions of herb extract. Thin layer chromatography analysis of different fractions provided an idea about the presence of various phytochemicals. Different R_f (Retention/Retardation factor) values of various phytochemicals afford valuable confirmation concerning their polarity and selection of solvents for separation of phytochemicals. Total phenolics content and flavonoids content were strong-minded to review their corresponding antioxidant activity followed by anticancer activity. Phytochemical viewing of the plants illustrated the attendance of carbohydrates, flavonoids, terpenoids, triterpenoids, saponins and tannins. TLC analysis of the ethyl acetate fraction showed the florescence with R_f value. The total phenolics content of ethyl acetate fraction was $(1.0118 \pm 0.07 \text{ mg/g})$, water fraction was $(0.9974 \pm 0.012 \text{ mg/g})$ and chloroform fraction was $(0.997 \pm 0.027 \text{ mg/g})$ followed by total flavonoids content of ethyl acetate fraction was $(1.017 \pm 0.01 \text{ mg/g})$, water fraction was $(1.045 \pm 0.06 \text{ mg/g})$ and chloroform fraction was $(0.996 \pm 0.036 \text{ mg/g})$. Gallic acid and quercetin were used as standard drugs for total phenolics and flavonoids content in a concentration dependent

manner. The entire fractions excluding n-hexane demonstrated the positive response for qualitative analysis, flavonoid and phenolic content. So our findings provide evidence that the fractions of *D. melanoxylon* are a potential source of natural activity and this justifies provide for pharmacological testing. Further phytochemicals and pharmacological evaluation are under progress.

Keywords: *Diospyros melanoxylon*, phytochemical screening, TLC, Phenolic, Flavonoids.

BCDACPT/NS-89

**HYPOTHETICAL ESTABLISHMENT OF CASPASE-3 INACTIVATION BY
CLASSICAL ANTI-EPILEPTICS ENDOWED POSSIBLE REMEDY IN
TEMPORAL LOBE EPILEPSY (TLE)**

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Abstract :

The study was undertaken to investigate the possibilities of marketed anti epileptic drugs mechanism of action in a different manner to improve the present situation in TLE (Temporal lobe epilepsy). Molecular docking simulation study and various open source computational tools were used to perform the study. AutoDock 4.2 MGL tools, Pymol visualize tools, Patch dock server were used to perform the molecular modeling. FTsite and CastP open source server were used to understand the pocket and ligand binding information respectively. Toxtree application was used to determine the toxicity profile of drug by Cramers rule. 19 potent marketed anti seizure drugs were taken for the study. The obtained molecular docking models of (Caspase 3, Procaspase 8, and FADD) with selected compounds (Clonazepam, Clobazepam, and Retigabine) showed promising results. Study depicts a trio selectivity of Clonazepam on FADD, Caspase 3, and Procaspase 8 (-6.66 kcal, -8.1 kcal, 6.46kcal) respectively. To our knowladge, this study represents the first reported molecular modeling study of marketed anti epileptic agents as an inhibitor of Caspase 3, FADD, Procaspase 8, which may lead to a promising remedy in TLE (Temporal lobe epilepsy). The interactions between the target (Caspase 3, FADD, Procaspase 8) and molecule proposed in this study could help the future research, to better understand the potential binding site and novel mechsniism of Clonazepam as an anti apoptotic agent. Docking studies conducted on Caspase 3, FADD, Procaspase 8, it can be concluded that the predicted binding poses and the scoring datas are helped to understand the future in silico drug design approaches. Clonazepam showed promising binding energy for both FADD and Procaspase 8 receptors as well. Clonazepam also scored immaculate binding energy and hydrogen bond interaction for caspase 3. Benzodiazepine ring depicts possible selecivity for the propossed targets.

FADD- Procaspase 8 interaction study by Patch dock server also helped to understand the molecular mechanism of Procaspase 8 cleavage and activation of Caspase 3 via caspase 8. Prediction of toxicity in ToxTree application by Cramer's rule enhance the drug profile for future study. Therefore, the investigated data can be further evaluated in vivo and in vitro models for their efficacy to develop the future research.

Key words : Molecular docking simulation, FADD, caspase 3

BCDACPT/NS-90

**EVALUATION OF ANTI-DYSENTRY ACTIVITY AND PRELIMINARY
PHYTOCHEMICAL SCREENING OF ALCOHOLIC EXTRACT OF *Hydrocotyle
asiatica* L.**

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Abstract :

Hydrocotyle asiatica, commonly called as *thankuni* in Bengali, *gotu kola* in Sinhala, *mandukaparni* in Sanskrit, it is a small, herbaceous, annual plant of family Apiaceae. The present study was undertaken to carry out the phytochemical analysis and evaluation of anti-dysentery activity of the leaf extract of *Hydrocotyle asiatica* Linn. The dried leaf powder was extracted with alcohol (95%) using Soxhlet apparatus. The bacterial strain *Escherichia coli* was found to be more susceptible towards the extract of *Hydrocotyle asiatica*, and the minimum inhibitory concentration (MIC) value was found to be 0.25gm/ml which can effectively act as an anti-dysentery drug of therapy. The TLC results of the alcoholic extract shows that at least three different constituents were present in the leaf extract of *Hydrocotyle asiatica* L. After performing the phytochemical test it has been found that alcoholic extract of *Hydrocotyle asiatica* Linn. leaf contains phytoconstituents like alkaloids, tannins, flavonoids, steroids, terpenoids and saponin glycosides. The anti-dysentery activity of the plant may be due to the presence of these phytoconstituents. Further investigation is required to confirm which phytoconstituents are responsible for the activity.

Key Words: *Hydrocotyle asiatica* Linn., Phytochemical test, Anti-dysentery activity.

BCDACPT/NS-091

ROLE OF NANOTECHNOLOGY IN NOVEL DRUG DELIVERY SYSTEMS

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Abstract:

Nanotechnology is the engineering of functional systems at the molecular scale. The Nanotechnology Initiative refers to the creations of new objects with nanoscale dimension roughly in the 1-100nm size. Nanotechnology increase in stability and an improved functionality in novel drug delivery systems. The pace of new discoveries in biotechnology

and health care appears a whole new field of endeavor in recent years. The increasing demands of understanding how modern medicines work at the molecular level, the shift towards predictive, preventive and personalized health care and challenges from nanotechnology and stem cell technology have added to the need for pharmacists to remain the experts in medicines. Nanotechnology is on its way to make a big impact in Biotech, Pharmaceutical and Medical diagnostics sciences. A dynamic collaboration is observed within the Researchers, Government, Pharmaceutical Biomedical companies and educational institutions all over the world in developing the nanotechnology applications in advanced medicine and patient care. The size of nano materials is such; they can be useful for both in vivo and in vitro biomedical research and applications. Of late, the integration of nano materials with biology has led to the development of diagnostic devices, contrast agents, analytical tools, physical therapy applications, and drug delivery vehicles. Nanotechnology is also opening up new opportunities in implantable delivery systems, which are often preferable to the use of injectable drugs. Nanotechnology provides the field of medicine with promising hopes for assistance in diagnostic and treatments technologies. It is expected that the upcoming generations of nano products will have target specificity, may carry multiple drugs, and could potentially release the payloads at varying time intervals.

Key words : Nanotechnology, Nanoscale, Biotechnology, Stem cell, Diagnostic science

BCDACPT/NS-092

Improving the Antibiotics use in the Community Pharmacy

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Abstract:

Inappropriate use of antibiotics has often been identified as a problem in effective health care delivery. High levels of antibiotics use, often clinically unnecessary, have led to a steady increase in drug resistance. This review provides information from studies on the factors that influence the use of antibiotics by health providers, dispensers and community members in low-income countries. A proper understanding of these factors is a precondition to develop more effective policies and programmes to address inappropriate antibiotic use. The review encompasses physicians' practices, the role of drug dispensers, and the drug use practices by community members. Although useful data was identified, one of the most important findings of the review was the scarcity of research data. If interventions into antibiotic use are to be effective, future research must focus on the cultural 'rationality' of antibiotic usage, preferably combining quantitative and qualitative methods. Research programmes alone are unlikely to improve antibiotic use, and findings should guide the development of priority programme activities, which include a carefully designed mix of activities by governments, health delivery systems, health training institutions, professional societies, pharmaceutical companies, consumer organisations, and international Organisations. Strategies that lean too heavily on professional education are unlikely to result in large-scale or long-lasting improvement.

Keywords: use of antibiotics, improvement of antibiotics

BCDACPT/NS-093

BRAIN IMPLANTATION

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Abstract :

Brain implants, often are referred as **neural implants**, are technological devices that connect directly to a biological subject's brain—usually placed on the surface of the brain, or attached to the brain's cortex. A common purpose of modern brain implants and the focus of much current research is establishing a biomedical prosthesis circumventing areas in the brain that have become dysfunctional after a stroke or head injuries. This includes sensory substitution. Some brain implants involve creating interfaces between neural system and computer chips. This work is part of a wider research field called brain computer interfaces. Neural implants such as deep brain stimulation is increasingly becoming routine for patients with Parkinson's disease and proving themselves as a boon for people with done on the surface chemistry of neural implants. Another type of neural implant that is being experimented on a Prosthetic Neuronal Memory Silicon Chips. Brain Pacemakers have been in use since 1997 to ease the symptom for diseases such as epilepsy, Parkinson's disease, dystonia and recently depression. Current brain implants are made from a variety of materials such as tungsten, silicon, platinum-iridium, or even stainless steel. Future brain implants may make use of more exotic materials such as nanoscale carbon fibres (nanotubes), and polycarbonate urethane.

Key words: Brain implants, Neural implants, Biomedical, Stroke,

BCDACPT/NS-094

**CEREBRAL PALSY: COMPREHENSIVE REVIEW ON NEUROLOGICAL
DISORDER AND REHABILITATION**

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Abstract:

Cerebral palsy (CP) is defined as motor impairment that limits activity, and is attributed to non-progressive disturbances during brain development in fetuses or infants. The motor disorders of CP are frequently accompanied by impaired cognition, communication, and sensory perception, behavioural abnormalities, seizure disorders, or a combination of these features. CP is thought to affect three to four individuals per 1000 of the general population. Cerebral palsy (CP) was first described in 1862 by an orthopedic surgeon named William James Little. A motor disorder resulting from a non-progressive (static) insult to the developing brain, CP is, in fact, a clinical presentation of a wide variety of cerebral cortical or sub-cortical insults occurring during the first year of life. Preterm infants are at the highest

risk for developing CP. The vulnerable brain is harmed during a critical period of development primarily by known CNS complications of prematurity such as intraventricular hemorrhage (IVH) and periventricular leukomalacia (PVL). Children with CP suffer from multiple problems and potential disabilities that require the provision of family-centered services that make a difference in the lives of these children and their families. The aim of this article is to provide an updated overview of Cerebral Palsy and review the most recent advances in clinical and therapeutic interventions.

Key words: Cerebral palsy, Motor disorder, Sub-cortical insults, Sensory perception, Neurological rehabilitation.

BCDACPT/NS-095

HERBS FOR DEPRESSION

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Abstract:

Clinical depression also referred to as major or unipolar depression is the most commonly occurring mood disorder. While we all experience periodic "mood swings," the symptoms of true depression are outlined by the American Psychiatric Association in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). According to the DSM-IV, at least 5 of the following 8 symptoms must be present for at least one month in order to diagnose clinical depression namely, weight loss due to a poor appetite, or overeating accompanied by weight gain, frequent insomnia or hyper somnia, lack of interest in regular activities, Overall feeling of fatigue, excessive activity or inactivity, feelings of worthlessness or guilt, difficulty concentrating, suicidal thoughts .Anti-depressant drugs are an all-too-frequent course of treatment for depression, but are not necessarily the best. There is a high rate of relapse and dependency associated with these drugs Depression has a variety of causes, of both physiological and organic origin. However, mild to moderate depression may show improvement by employing certain botanicals and nutritional considerations. Some clinically used herbs are Hypericum perforatum extract (St. John's Wort), There are at least 10 pharmacologically active constituents found in the extract of this herb, but researchers are most interested in hypericin and pseudohypericin, Kava (Piper methysticum) is relatively new in the treatment of anxiety-related depression. The beneficial agents of kava are kavalactones found in the dried rhizome of the plant. Kanna (Sceletium tortuosum) is classified as an empathogen type of herb known to elevate mood and decreases anxiety, stress and tension. Though herbal drugs are claimed relatively safe but it's imperative that one should never combine herbal medications with other anti-depressant prescription drugs.

Key words : Clinical depression, unipolar depression, Anti-depressant drugs, Herbal drugs

BCDACPT/NS-096

OCEANS- A STOREHOUSE OF DRUGS

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Abstract :

Oceans explorations often lead to new ideas, theories and discoveries, including new medicines. From slime to sponges, researchers are exploring the ocean's depths for new medicines to treat cancer, bacterial and viral infections, heart diseases and other ailments. Marine organisms such as sponges, cone snails, fish, tunicates, worm, mollusks, horseshoe crabs, Caribbean gorgon yield numerous toxins and versatile chemical components which cure cancers, manages pain, hyper triglyceridemia, schizophrenia, vision loss, inflammations. Horseshoe crabs are used as indicators for bacterial contamination. Drugs such as zidovudine, retrovor obtained from Caribbean sponges are found effective against AIDS. Other diverse compounds obtained include cytarabine, vidarabine, ziconotide, Omega-3-fatty acids, trabectidin, brentuximab, plitidepsin, tetrodotaxin, kainic acid, domoic acid, aplysinopsin, manolide. Ocean contain a humongous resource of medicinal components unknown to land. An ocean commission report lists chemicals and biological materials from marine organisms now in use ,including 10 anti cancer drugs, anti inflammatory drugs, fungus, Tuberculosis, HIV, malaria, dengue. The list is plentiful even though 95% of oceans is yet to be explored. Exotic, hard to reach places such as deep sea hot vents, seabed sediments have barely been documented. However advances in ocean explorations and marine biotechnology have opened new depths to scientists; ocean's potential as a biochemical resource has become more apparent. Harvesting ocean organisms for medical purposes has accelerated in recent years as scientists seek new antibiotics and cancer treatments.

Key words : Slime, Sponges, Marine organisms, Zidovudine, Retrovor, Seabed sediments

BCDACPT/NS-097

PARANORMAL EXPERIENCES IN A SCIENTIFIC WAY

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Abstract

Paranormal is a general term that designates experiences that lie outside "the range of normal experience or scientific explanation" or that indicates phenomena understood to be outside of science's current ability to explain or measure. Paranormal phenomena are distinct from certain hypothetical entities, Thousands of stories relating to paranormal phenomena are found in popular culture, folklore, and the recollections of individual subjects. In contrast, the scientific community, as referenced in statements made by organizations such as the United States National Science Foundation, maintains that scientific evidence does not support a variety of beliefs that have been characterized as paranormal. The paranormal can best be thought of as a subset of pseudoscience. What sets the paranormal apart from

other pseudoscience is a reliance on explanations for alleged phenomena that are well outside the bounds of established science. Thus, paranormal phenomena include extrasensory perception (ESP), telekinesis, ghosts, poltergeists, life after death, reincarnation, faith healing, human auras, and so forth. The belief in ghosts as souls of the departed is closely tied to the concept of animism, an ancient belief which attributed souls to everything in nature. Numerous theories have been proposed by scientists to provide normal explanations for ghost sightings. Although the evidence for ghosts is largely anecdotal, the belief in ghosts throughout history has remained widespread and persistent. Approaching the paranormal from a research perspective is often difficult because of the lack of acceptable physical evidence from most of the purported phenomena. By definition, the paranormal does not conform to conventional expectations of nature. Therefore, a phenomenon cannot be confirmed as paranormal using the scientific method because, if it could be, it would no longer fit the definition. Despite this problem, studies on the paranormal are periodically conducted by researchers from various disciplines.

Key words : Paranormal, Pseudoscience, Anecdotal, Poltergeists

BCDACPT/NS-098

PRODRUG DESIGN & CLINICAL APPLICATION

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Abstract

Prodrugs are bio reversible derivatives of drug molecules that undergo an enzymatic and/or chemical transformation *in vivo* to release the active parent drug, which can then exert the desired pharmacological effect. In both drug discovery and development, prodrugs have become an established tool for improving physicochemical, biopharmaceutical or pharmacokinetic properties of pharmacologically active agents. About 57% of drugs approved worldwide can be classified as prodrugs, and the implementation of a prodrug approach in the early stages of drug discovery is a growing trend. To illustrate the applicability of the prodrug strategy, this article describes the most common functional groups that are amenable to prodrug design, and highlights examples of prodrugs that are either launched or are undergoing human trial. Mutual prodrugs play an important role in better therapeutic efficacy of drugs like benorylate. Thus it can be concluded that prodrug not only helps better administration of drugs as well as helps in reducing toxicity through site specific drug delivery.

Keywords : Transformation, active drug.

SKIN GRAFTING

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Abstract:

Skin grafting is one of the most indispensable techniques in plastic surgery and dermatology. A SKIN GRAFT is a tissue of epidermis and varying amounts of dermis that is detached from its own blood supply and placed in a new area with a new blood supply. They are used in a variety of clinical situations, such as traumatic wounds, defects after oncologic resection, burn reconstruction, scar contracture release, congenital skin deficiencies and hair restoration. Skin grafts are generally avoided in the management of more complex wounds. Conditions with deep spaces and exposed bones normally require the use of skin flaps or muscle flaps. Different kinds of skin grafts include Autografts (patches of healthy skin taken from another location on a person's body), Allografts (skin from other human sources or skin substitutes) and Xenografts (grafts made from the skin of other animal species, often pigs). There are two main forms of skin grafts- Partial, or split thickness grafts and Full thickness grafts. In the present review, we describe how to perform skin grafting successfully and some variations of skin grafting.

Keywords: Skin grafting, autografts, allografts, xenografts, oncologic, dermatology

CORNEAL DENDRITIC ULCER

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Abstract

A corneal ulcer is an open sore on the cornea, the clear structure in front of the eye. It may cause redness, pain, tearing, and pus or thick discharge draining from the eye. Vision might be blurry, and there may be an increase in pain when the person looks at bright lights. Bacterial infections cause corneal ulcers and are common in people who wear contact lenses. Bacteria can directly invade the cornea if the corneal surface has been disrupted. Viruses that may cause corneal ulcers include the herpes simplex virus and the Varicella virus. Disorders that cause dry eyes can leave the eye without the germ-fighting protection of the tear film and cause or aggravate corneal ulcers. Disorders that affect the eyelid and prevent the eye from closing completely, such as Bell's palsy, can dry the cornea and make it more vulnerable to ulcers. Any condition which causes loss of sensation of the corneal surface may increase the risk of corneal ulceration. Chemical burns or other caustic (damaging) solution splashes can injure the cornea and lead to corneal ulceration. In addition, some patients with immunological disorders may develop corneal ulcers as a complication of their disease. It is diagnosed by slit lamp with a drop containing dye

fluorescein for easy to see. Antibiotic(Chloramphenicol), antifungal (fluconazole) are the drugs are used to treat corneal dendritic ulcer. One should not wash the lens with tap water or saliva and should not sleep with the contact lens on. They should also wear glasses. The lens must be stored in a proper solution.

Key words: Open sore; Bell's palsy; Rheumatoid Arthritis; Artificial Teardrop

BCDACPT/NS-101

NON- HODGKIN LYMPHOMA

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Abstract:

Non-Hodgkin's lymphoma is a type of lymphoma, which is a general term for cancers that develop in lymphatic tissue. Sometimes non-Hodgkin's lymphoma is called B-cell lymphoma or T-cell lymphoma, depending on the type of cells affected. The non-Hodgkin's lymphomas (NHLs) are a heterogeneous group of neoplasms with varied manifestations. Unlike Hodgkin's disease, which typically has a predictable pattern of spread, NHL is less predictable in its behavior. It is not confined to nodal or extranodal lymphatic tissue and it can involve organs without apparent lymphatic tissue. An enlarged lymph node in the neck, armpit or groin or less often, a swollen node near the ears, the elbow or in the throat near the tonsils is sometimes an indication of lymphoma. NHL can be found in bone marrow, brain, belly, testes and even in the chest. A diagnosis of NHL is usually made by examining a lymph node biopsy specimen, other diagnosis process involves MRI scan, CT scan etc. The stage is based on where lymphoma cells are found and how many areas are affected. The best course of action to prevent this disease is to pay attention to any possible symptoms of this disease. Immune system deficiency, autoimmune disease, exposure to certain chemicals, radiation exposure are the risk factors of NHL. DNA damaging drugs, hormones and other drugs are used as treatment of NHL.

Key words: Non-hodgkin lymphoma, Neoplasms, Autoimmune disease, Lymph node biopsy.

BCDACPT/NS-102

QUALITY BY DESIGN: A MODERN APPROACH TO PHARMACEUTICAL QUALITY

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Abstract:

Quality by Design (QbD) is an essential part of the modern approach to Pharmaceutical Quality. Good Pharmaceutical Quality represents an acceptably low risk of failing to achieve the desired clinical attributes. The following equation indicates Quality comes from: (Pharmaceutical Quality) $y = f$ (drug substance, excipients, manufacturing,

packaging). Quality cannot be tested into products; it has to be built into the Products by design. ICH Q8 (Pharmaceutical Development), along with ICH Q9 (Quality Risk Management) and ICH Q10 (Pharmaceutical Quality Systems) indicate how Quality by Design acts to ensure Product Quality. Quality by Design approach consists of Target Product Profile, Critical Quality Attributes (CQA), Risk Assessment, Design Space, Control Strategy and Continual improvement and management of product lifecycle. Now a day we can modernize our Industry by better management and expansion of GMP through Quality by Design (QbD) Approach. The use of QbD principles during product development provides opportunities to facilitate innovation and continual improvement throughout the product lifecycle, compared to traditional approaches hence it is systematic way to product and process development. Companies can reorganize their science and Health Authorities also can change their assessment and inspection with the help of QbD approach.

Key words: Quality by Design, Process development, Modernize

BCDACPT/NS-103

NANOSPHERE FOR NOSE TO BRAIN DELIVERY

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Abstract:

Nanospheres are the principal drug carriers proposed by nanotechnicians. It provides a new system to cure age-old health problems by delivering a concentrated amount of medicine to a specific area of the body. It appears increasingly reasonable to conduct clinical trials to determine if intranasal drug delivery may be used to treat neurological diseases. It is uncertain, however, whether drug from the nanosphere is being released in the nasal cavity or the nanosphere carrying the drug are transported via the olfactory system or the trigeminal nerves into the CNS where the drug is released. A key obstacle for developing effective drugs for treating neurological diseases is the blockage of drug entrance into the CNS by the BBB. Less than 2% of low MW drugs and virtually no large molecule drugs, can cross the BBB. An increasing number of studies on both animals and human subjects have suggested that intranasal drug delivery could be used to deliver both small and large sized drug into the CNS by bypassing the BBB.

Key words : Nanosphere , trigeminal nerve , intranasal drug delivery.

BCDACPT/NS-104

'GENERIC'- A SAFER AND CHEAPER OPTION

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Abstract:

A generic drug is defined as "a drug product that is comparable to brand/reference listed drug product in dosage form, strength, route of administration, quality and performance characteristics, and intended use". According to the USFDA, generic drugs

are identical or within an acceptable bioequivalent range to the brand-name counterpart with respect to pharmacokinetic and pharmacodynamic properties. Prescriptions may be issued for drugs specifying only the chemical name, rather than a manufacturer's name. The generic drugs are comparably cheaper than that of branded drugs, as the manufacturers have not had the expenses of developing and marketing a new drug. A patent is granted that gives the company that developed the drug an exclusive right to sell the drug as long as the patent is in effect. Sometimes, generic versions of a drug have different colors, flavors, or combinations of inactive ingredients than the original medications but the active ingredients must be the same in both preparations. FDA receives very few reports of adverse events about specific generic drugs rather it is related to side effects of the drug ingredient itself. India's the global leader in the generic market in Africa and other emerging markets. Generic drugs are the answer to better healthcare for all in respect of affordability and quality. To promote generic drugs in cheaper rate, the government had set up different health scheme such as JAN AUSADHI in 2008. Thus, the current study is aimed to review about generic medicines and its application in India as well as all over the world.

Key words: FDA, Generics, Pharmacokinetic, Pharmacodynamic, Patent, JAN AUSADHI

BCDACPT/NS-105

DRUG ADDICTION & ABUSE IN TEENAGE

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Abstract:

Drugs are chemicals that can interfere with the neuron's communication, sometimes can change the brain permanently, this is more likely when a drug is taken repeatedly. Drug addiction is a dependence on an illegal drug or medication. Drug abuse is a self administration of drug or drugs in manner not in accord with accepted medical or social patterns. Drug addiction & drug abuse includes: psychological dependency (Habituation), physical dependency, compulsive drug use, tolerance. This affects three primary areas of the brain: The brain stem, the cerebral cortex & the limbic system- links together a bunch of brain structures that control our emotional responses. Teens tend to try new things and take risks, so they may take drugs or drink alcohol because it seems exciting or they want to fit in with friends or certain groups or they like the way it makes them feel or believe it makes them more grown up. Sometimes due to feeling of inadequacy, frustration & emotional insecurity, failure at school & unable to satisfy expectations may lead to this. Most of the time it is not known to them that it increases B.P or heart rate, damage the brain and other organs, leads to accidental overdose, cause physical dependency or addiction, respiratory depression, cause seizures & even death. Some commonly abused drugs are Marijuana, Depressants (Xanax, Valium), Stimulants (amphetamines, cocaine), Hallucinogens, Heroin etc. The curse of it can affect our youth as well as our society too. Lastly with the right treatment and support, one can kick off the habit and get back to life that's free of it.

Key words: Drug abuse, Drug addiction, Teenagers, Hallucinogen.

BCDACPT/NS-106

OPTIMIZATION OF ULTRASOUND-ASSISTED EXTRACTION OF TOTAL FLAVONOIDS FROM FENUGREEK SEEDS WITH RESPONSE SURFACE METHODOLOGY.

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Abstract:

Fenugreek [*Trigonella foenum-graecum*] is an annual plant in the family Fabaceae. The distinctive cuboid-shaped, yellow to amber coloured fenugreek seeds are frequently encountered in the cuisines of the Indian subcontinent. In this study, *Trigonella foenum-graecum* seeds are used as an experimental matrix. Ultrasound-assisted extraction (UAE) of total flavonoids from *Trigonella foenum-graecum* is studied with dual wavelength UV-VIS spectrophotometer. Effects of various factors including ratio of material to liquid, ultrasonic time, methanol concentration and extraction times on extraction yield of total flavonoids are evaluated. Then, optimization of total flavonoid compound (TFC) extraction from *Trigonella foenum-graecum* seeds are investigated using response surface methodology (RSM) in this paper. Statistical analysis of the experiments indicated that Ratio of material to liquid and methanol concentration significantly affected TFC extraction ($p < 0.01$). The Box-Behnken experiment design shows that polynomial regression models are in good agreement with the experimental results, with the coefficients of multiple determination of 0.9758 for TFC yield. The optimal conditions for maximum TFC yield are 70% methanol, 50min and 30 (v/w) liquid to solid ratios with a 2 time extraction time.

Keywords : *Trigonella foenum-graecum*, Flavonoid

BCDACPT/NS-107

MANAGEMENT OF CEREBRAL PALSY

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Abstract:

Cerebral palsy is an umbrella term that describes a group of disorders caused by damage to the brain. It results in physical impairment affecting body movement, coordination, balance and posture. It is caused by damage to the cerebral cortex and other parts of the brain such as the cerebellum. Cerebral palsy (CP) is a common paediatric disorder occurring in about 2 to 2.5 per 1000 live births. The causes of CP are very diverse and multifactorial which include congenital, genetic, inflammatory, infectious, anoxic, traumatic and metabolic. Cerebral palsy is invariably associated with many deficits such as mental retardation, speech and language and or motor problems. The child with CP is best cared for with an individualized treatment plan that provides a combination of interventions. The treatment must be goal oriented, such as to assist with mobility, reduce or prevent

contractures, improve positioning and hygiene, and provide comfort. Certain medical advances such as vaccines as well as better prenatal care and nutrition, have lowered the numbers of babies born with CP. Having good prenatal care under the supervision of a doctor is the best way to prevent CP. Thanks to current advances in medicine, as well as laws created to help the disabled, the lives of people with CP are easier and more productive than before. Loving behavior and extra care are essential for better support for Cerebral Palsy patients.

Keywords: Cerebral palsy, cerebellum, paediatric, vaccines, contractures.

BCDACPT/NS-108

MISOPHONIA

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Abstract :

Misophonia is described as a condition characterized by strong dislike for soft or audible sounds results from various sources such as chewing gums, brushing teeth, eating, breathing, talking, sneezing, yawning, laughing, snoring, typing on a keyboard etc. It usually makes an individual angry with feeling of hatred, disgust etc. without any obvious reason(s). This occurs due to distortion of collection between various limbic structures and the auditory cortex. A person with Misophonia unfortunately remains undiagnosed. A Person affected by such a condition, distance him or her from the social interactions. Misophonia may be present in Autism spectrum disorders. Specific medical or clinical management till date is unavailable. Physicians across the globe opt for Supportive and behavioral therapy for such conditions. According to my understanding, a professional help must ensure a healthy subdued verbal communications between a patient and a normal individual. Moreover any normal individual if made aware of the situation must rely on his moral values and principles thereby nullifying all the elements which may affect the psychology of a Misophonic. The affected person(s), always cannot be kept at isolation, but due precautions should be taken and any recognized trigger factor must be considered and eliminated then and there itself. My further recommendation is using of public display and adressal systems in health clinics, dispensary, hospitals, shopping malls, social gatherings etc. highlighting the precautions for such individuals if observed.

Key Words: Misophonia, Misophonic ,Audible sounds, limbic structures, trigger factor.

BCDACPT/NS-109

FLAVONOIDS THE PANACEA OF RECENT ERA

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Abstract :

Flavonoids are the largest group of naturally occurring phenolic compounds, which comprise: 15 carbon & 2 aromatic ring connected with a 3-carbon bridge the flavones nucleus, which occur in different plant parts both in free state and as glycosides. Flavonoids

are also known as plant pigment or co-pigments. **Flavonoids** (from the Latin word *flavus* meaning yellow, their colour in nature) are a class of plant secondary metabolites. The flavonoids-Sugar and Hydroxyl groups increase the water solubility of flavonoids. Methyl & Isopentyl groups make flavonoids lipophilic. If no sugar- Aglycon. With sugar-glycon Flavonoids were referred to as Vitamin P, but the term has since fallen out of use. Flavonoids are widely distributed in plants fulfilling many functions. Flavonoids are the most important plant pigments for flower coloration producing yellow or red/blue pigmentation in petals designed to attract pollinator animals. In higher plants, Flavonoids are involved in UV filtration, symbiotic nitrogen fixation and floral pigmentation. They may act as a chemical messenger or physiological regulator, they can also act as cell cycle inhibitors. Flavonoids secreted by the root of their host plant *Rhizobia* in the infection stage of their symbiotic relationship with legumes like peas, beans, clover, and soy. *Rhizobia* living in soil are able to sense the flavonoids and this triggers the secretion of Nod factors, which in turn are recognized by the host plant and can lead to root hair deformation and several cellular responses such as ion fluxes and the formation of a root nodule.

Key words : Flavonoid, Aglycon, *Rhizobia*. Ion fluxes

BCDACPT/NS-110

PLASTIC SURGERY IN MODERN COSMETOLOGY

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Abstract :

Plastic surgery is a medical specialty concerned with the correction or restoration of form and function of any body part. In the term plastic surgery, the adjective *plastic* denotes *sculpting* and derived from the Greek word *plastike* which means “the art of modeling” of malleable flesh. Though cosmetic or aesthetic surgery is the best known kind of plastic surgery, most of the plastic surgery is not cosmetic. Plastic surgery is of many types Tummy tuck, Eyelid surgery, Mammoplasty, Gynecomastia, Labiaplasty, Liposuction, Cheek augmentation etc. There are many techniques of plastic surgery which includes Skin grafting, Autografts, Allografts, Xenograft etc. It is having many advantages like it gives proper shape to the body, motivate people, make people more confident, remove fat cells from body, they improve their interactive skills automatically but along with that it is also having some disadvantages like some chances of getting reaction in the body, allergy, wound in stitches, rashes in skin, infection, high treatment cost. And even during surgery, the patient may bleed. Advancement, affordability and popularity of plastic surgery is leading to new developments thereby turning this into the way to alter not only the physical appearance but the social life as well.

Key words: Plastic surgery, cosmetology.

BCDACPT/NS-111

HANTA VIRUS PULMONARY SYNDROME

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Abstract:

Hantavirus pulmonary syndrome (HPS) is a rapidly progressing human disease. There are no vaccines, effective antiviral drugs, or immunologic to prevent or treat HPS. The main virus is called SIN NOMBRE VIRUS. It is a RNA virus. It first outbreaks in USA in 1993. Rodent like White-footed mouse (*Peromyscus leucopus*), Rice Rat (*Oryzomys palustris*), cotton Rat (*Sigmodon hispidus*), Deer Mouse (*Peromyscus maniculatus*) are responsible. Early symptoms include fatigue, fever and muscle aches, especially in the large muscle group. These symptoms are universal. There may also be headaches, dizziness, chills, and abdominal problems, such as nausea, vomiting, diarrhea, and abdominal pain. Four to 10 days after the initial phase of illness, the late symptoms of HPS appear. These include coughing and shortness of breath. Treatments will include: Oxygen, Breathing tube or breathing machine in severe cases, A medication called Ribavirin to treat kidney-related problems and reduce the risk of death, There is no effective treatment for hanta virus infection involving the lungs. To avoid this fatal problem you have to avoid exposure to rodent urine and droppings, Avoid rodent dens, Drink disinfected water, Sleep on a ground cover and pad, Keep your home clean. Clear out potential nesting sites and clean your kitchen, Spray mouse nests and droppings with a 10% solution of chlorine bleach or similar disinfectant. Allow it to sit for 30 minutes. Using rubber gloves is safe, Wash all potentially contaminated hard surfaces with a bleach or disinfectant solution.

Keywords:- Hanta virus pulmonary syndrome, Sin Nombre Virus, *Peromyscus leucopus*, *Oryzomys palustris*, *Peromyscus maniculatus*

BCDACPT/NS-112

GREEN BLOOD THERAPY- A REVIEW

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Abstract:

Juice of wheat (*Triticum aestivum* L., Poaceae) grass is termed as green blood. Wheatgrass is a variety of grass that is used like a herbal medicine for its therapeutic and nutritional properties. The aim of this study is to concise the health benefits of green blood therapy. As wheatgrass juice (WGJ) bears a close resemblance to the "haemoglobin" in our blood, the juice is called as "green blood" and the therapy using it is called as "green blood therapy". Wheatgrass has the capacity to absorb 92 of the 108 minerals from the soil. Wheat grass is a humble weed that is a powerhouse of carbohydrates, proteins, all essential minerals, and vitamins. Wheatgrass therapy is recommended for patients suffering from chronic diseases

such as asthma, atherosclerosis, joint pains, TB, Parkinson's disease, constipation, hypertension, diabetes, bronchitis, insomnia, eczema, sterility, obesity and flatulence. It is also useful in the treatment of cancer. The WGJ is immediately absorbed into the bloodstream and gives energy. On an empty stomach, it is assimilated into blood in about 20 min. The energy lasts throughout the day. It is practically a fountain of youth and found to have numerous health benefits. Thus it is concluded that the WGJ has higher degree of curative index.

Key words: green blood, wheat juice, haemoglobin, proteins.

BCDACPT/NS-113

IN VITRO ANTIOXIDANT AND ANTIBACTERIAL ACTIVITY SCREENING OF FLOWERING BUDS OF *MANGIFERA INDICA*

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Abstract :

Flavonoids or **bioflavonoids** comes from the Latin word *flavus* meaning yellow, their colour in nature, are a class of plant secondary metabolites. Flavonoids possesses a wide range of biological and pharmacological activities. Several pharmacological activities of mango extract have been reported including anti-inflammatory, antioxidant, antiallergic, anthelmintic and antiamoebic. Phytochemical studies on various parts of *M. indica* revealed that it contains many phenolic compounds and Mangiferin, a xanthone glycoside. The objective of this study is to evaluate pharmacological effects of ethanolic extract of the flowering buds of *Mangifera indica* and to isolate the chemical compounds present by various chromatographic techniques. Flowering buds of the plant were collected, dried and powdered. The powdered portion was extracted successively with petroleum ether and ethanol. Different chemical tests were performed with the extract. The extract contains flavonoids, steroids, amino acid and cardiac glycosides. It forms a uniform suspension in water. Thin layer chromatography (TLC) was performed with the extract. Separation was achieved using Chloroform: Acetone: Formic acid (8:1.5:0.5) as solvent system. A Band was observed, scanned by U-V spectrophotometer using methanol as solvent. Column chromatography was performed with the same mobile phase as that of TLC. The column fraction consisted of two layers which were separated and maximum absorbencies were found at 278nm and 215nm respectively. High performance liquid chromatography (HPLC) was performed using Methanol: Water (80:20) in an Agilent (Infinity 1260) isocratic system. The extract had two major compounds with different retention times. In vitro antioxidant activity by 'DPPH radical scavenging assay' and in vitro antibacterial activity by 'Disc diffusion method' was studied. The extract has promising antioxidant property and is found to show antimicrobial activity using gram positive bacteria at minimum drug concentration at 1.25mg.

Keywords : Flavonoid .bio flavonoid , antioxidant , antimicrobial activity

BCDACPT/NS-114

**MICRO-TAG: A NOVEL TECHNIQUE OF SECURITY IN
PHARMACEUTICALS**

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Abstract:

The main objective of this article is to emphasize on "MICRO-TAG" which is a novel and a new technique of security in pharmaceuticals. According to FDA estimates about 10% of all drugs sold worldwide are counterfeit. Annual global trade in counterfeit goods is estimated to be \$600 billion and growing. Counterfeit goods and drugs leads real threat to consumer safety as well as loss of companies brand value and profits. Till date, dosage authentication required forensic analysis in a laboratory which is a slow process involving application of sophisticated equipment. Now days to avoid counterfeiting of products many companies are coming with various techniques of product authentication. One of the newest, innovative securities ways is by applying micro-tags to the dosage. Unlike forensic systems, micro tags can provide quick, reliable, economical identification and authentication of a drug product in the field within a few minutes, without destroying the product. Not only this much, end-users also can monitor the tags with a simple, inexpensive, hand-held detection system. Each tag is unique and cannot be reverse-engineered by a counterfeiter. Micro-tag provides safe, easily implementable, reliable means of authentication of product.

Key words: Micro-tag, Anti-counterfeiting approach, Physical-Chemical Identifiers (PCIDs) multiple layers of security

BCDACPT/NS-115

CANCER AND MDM2 PROTEIN

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Abstract:

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other tissue. Cancer cells can spread to other parts of the body through the blood and lymph system. Mouse double minute 2 homolog (MDM2) also known as E3 ubiquitin-protein ligase. Mdm2 is a protein that in humans is encoded by the *MDM2* gene. Mdm2 is an important negative regulator of the p53 tumor suppressor. Mdm2 protein functions both as an E3 ubiquitin ligase that recognizes the N-terminal trans-activation domain (TAD) of the p53 tumor suppressor and an inhibitor of p53 transcriptional activation. The key target of Mdm2 is the p53 tumor suppressor. Mdm2 has been identified as a p53 interacting protein that represses p53 transcriptional activity. Mdm2 achieves this repression by binding to and blocking the N-terminal trans-activation domain of p53. Mdm2 is a p53 responsive gene that

is, its transcription can be activated by p53. Thus when p53 is stabilized, the transcription of Mdm2 is also induced, resulting in higher Mdm2 protein levels. Genetic and biochemical evidence have demonstrated a direct link between Mdm2 and cancer development. Elevated expression of Mdm2 is observed in a significant proportion of different types of cancer. The major contribution of Mdm2 to the development of cancer is through a tight inhibition of the activities and stability of the tumor suppressor p53.

Key words : cancer , Transcriptional activity , tight inhibition

BCDACPT/NS-116

COMPERATIVE QSAR STUDY ON PYRAZOLO [1, 5-A] PYRIMIDINE, TARGET ON CDK2

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Abstract:

Cyclin-dependent kinases (CDKs) are a family of protein kinases first discovered for their role in regulating the cell cycle. They are also involved in regulating transcription, mRNA processing, and the differentiation of nerve cells. They are present in all known eukaryotes, and their regulatory function in the cell cycle has been evolutionarily conserved. They have been shown to play a key role in regulating cell cycle progression and to a large degree manage cellular transitions from growth phase (G1 and G2) into phases associated with DNA replication (S) and mitosis (M). CDKs are considered a potential target for anti-cancer medication. If it is possible to selectively interrupt the cell cycle regulation in cancer cells by interfering with CDK action, the cell will die. QSAR study reveals that wangford charge, vander waal,s volume , polarizibilities and electrostatic potential charge are important for that data set. The QSAR study reveals the structural requirements of on pyrazolo [1,5-a] pyrimidines for oncogenic activity. It is evident from the QSAR models that the attachment of electron donating group at C-4 may be conducive for anticancer activity. The study reveals that the increasing charges at atom numbers 7 and 8 may be helpful but the increase in the charge at the atom number 4 and 6 may be detrimental for oncogenic activity. It also emphasizes that the increase in the value of electrostatic potential charges at atom numbers 2 and 5 may be favorable as far as the CDK-2 inhibitory activity is alarmed.

Key words: CDK-2, QSAR, Cell Cycle, Oncogenic activity , wangford charge

BCDACPT/NS-117

MUSIC SHOULD BE A THERAPY FOR AILMENTS

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Abstract :

Let us admit that everybody likes music in real sense, he or she may not be a music lover in that sense but during daily routine or life style gets attracted to it, why? Neuroscience has given many hypothesis based findings till date, and the field is under exploration as neurotransmitters and neuro chemicals are not yet under human control. Technically speaking, music is just a collection of sounds interspersed by silence. Music therapists use

music to meet the psychological, physical, emotional, spiritual, and social needs of patients and their families. Till date, there is evidence; music therapy can reduce high blood pressure, depression and sleeplessness. In Alzheimer's patients, music therapy was shown to significantly reduce anxiety and aggression. While there are no claims that music therapy can directly cure diseases like cancer, medical professionals believe that music can reduce certain symptoms, help with healing, improve physical movement, and enrich a patient's overall quality of life. There are evidences patients undergoing gastrointestinal endoscopic procedures, who used music intervention may have a higher rate of completed colonoscopies and shorter examination time. Other work suggests that patients undergoing spinal anaesthesia may have less need for sedative medication during and after surgery. A child with autism spectrum disorders, cerebral palsy, Down syndrome etc., responds well to music. As a matter of fact music therapy is often a regime along with the Occupational, Behavioural and Pharmacotherapy for such patients. “Lastly if Music is not going to improve or heal any disease, certainly it's not going to harm or compromise the therapeutic regimen of any treatment, so let's give it a try, as God is the healer and Music is the language of God”.

Key Words: Music lover, Neuroscience, Neurotransmitters, Music therapists, Gastrointestinal endoscopic procedures

BCDACPT/NS-118

PERSONALIZED MEDICINAL THERAPY FOR CANCER TREATMENT

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Abstract :

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other tissues. Chemotherapy and Radiation is a general process to cure the cancer disease, but there are several type of side effects. To overcome this problem Personalized medicinal therapy is taken for cure the cancer disease i.e. new approaches to molecular cancer therapy. Personalized medicine is the use of new methods of molecular analysis to better manage a patient's disease, select treatments that increase the chances of a successful outcome and reduce possible adverse reactions. The center for personalized Cancer Therapy is an important initiative of UC San Diego Health System and Moores Cancer Center. Here I discuss latest cancer therapy i.e. Cancer immunotherapy is the use of the immune system to reject cancer by stimulating the patient's immune system to attack the malignant tumor cells that are responsible for the disease. Photodynamic therapy is a form of phototherapy using nontoxic light-sensitive compounds that are exposed selectively to light, whereupon they become toxic to targeted malignant and other diseased cells. *Gene Therapy* is an experimental technique for correcting defective genes i.e responsible for disease development. In Hormone Therapy, hormones help some types of cancer cells to grow such as breast cancer & prostate cancer. In other cases, hormones can kill cancer cells, make cancer cells grow more slowly, or stop them from growing. At last I conclude that though all the personalized medicine is very much expensive. The researcher's are doing enormous work to bring it to the reach of common people.

Keywords: Personalized medicinal therapy, Cancer immunotherapy, Photodynamic therapy, *Gene Therapy*, Hormone Therapy

BCDACPT/NS-119

NANOMATERIALS FOR STEM CELL TRACKING

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Abstract:

Application of nanotechnology in biomedical treatments using stem cells is the latest conduit of biotechnological research. It offers unprecedented opportunities to create the materials and devices within the size range of 1 and 100 nm with a plethora of applications in diagnosis and amelioration of diseases affecting the human population. Stem-cell-based therapy shows great promise in cancer, Alzheimer's disease, Parkinson's disease, diabetes etc. Advances in stem cell tracking offers the hope for the renewal, regeneration and replacement of damaged tissues/organs. Nanomaterials such as *Quantum dots*, *Dye-doped nanoparticles*, *Magnetic nanoparticles*, optically active nanoparticles can provide valuable tool to track, image and differentiate the host stem cells and transplanted stem cells, to drive their differentiation into specific cell lineages, and ultimately to understand their cell biology. In comparison to other modalities like magnetic resonance imaging, positron emission tomography and computed tomography, nanomaterial-based probes are advantageous in terms of the photo-stabilities and minimal effects on the cell phenotype. The applications of nanomaterial for tracking, sensing and controlling the stem cells can provide a prodigious and unthinkable probability to develop novel diagnostic and therapeutic modalities for human disease.

Key words : Nanotechnology , Biomedical treatment , nanomaterial based probe

BCDACPT/NS-120

**PARANORMAL EXPERIENCE AND THE CATECHOLAMINE METHYL
TRANSFERASE - DOPAMINERGIC RELATIONSHIP**

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Abstract:

Paranormal belief and suggestibility seem related. According to recent findings outlining a putative association between suggestibility and a specific dopaminergic genetic polymorphism, It has been hypothesized that similar exploratory genetic data may offer supplementary insights into a similar correlation with paranormal belief. With more affordable costs and better technology in the aftermath of the human genome project, genotyping is increasingly ubiquitous. Compelling brain theories guide specific research hypotheses as scientists begin to unravel tentative relationships between phenotype and genotype. In line with a dopaminergic brain theory, it has been

tried to correlate a specific phenotype concerning paranormal belief with a dopaminergic gene (COMT) known for its involvement in prefrontal executive cognition and for a polymorphism that is positively correlated with suggestibility.

Keywords: COMT gene, paranormal belief and suggestibility relationship, dopaminergic activity of brain.

BCDACPT/NS-121

A REVIEW ON PROBIOTICS

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Abstract:

The objective of this review is to outline the use of probiotics use in medicine and to give insight into the field for different applications. Latin preposition 'pro' means for, and the Greek adjective 'bios' means life. When a person takes antibiotics, both the harmful bacteria and the beneficial bacteria killed. A reduction of beneficial bacteria can lead to digestive problems, such as diarrhea, yeast infections and urinary tract infections. The use of probiotics in treatment regimen is increasing. Probiotics are live organisms and prebiotics are components essentially feed beneficial bacteria in gut. Probiotics can be formulated by many different type of products including drugs, foods, and dietary supplements. Species of lactobacillus and bifid bacterium are most commonly used as probiotics. Probiotics are intended to assist the body's naturally occurring gut mitochondria. Some probiotic preparations have been used to prevent diarrhea by antibiotics or as part of treatment for antibiotic related dysbiosis. Probiotics are advocated for a range of illness, starting from constipation to cancer treatment. Probiotics are now widely used in many countries by consumes and in clinical practice. Given the increasing widespread use of probiotics, a thorough understanding of their risks and benefits is imperative. In this article review the safety of probiotics and discuss areas of uncertainty regarding their use. In light of this ongoing trend and despite the strong scientific evidence associating these microorganisms to various health benefits, further research is needed in order to establish them and evaluate their safety as well as their nutritional aspects.

Keywords- Probiotics, lactobacillus, bifid bacterium.

BCDACPT/NS-122

INTERACTION OF ENGINEERED NANOPARTICLES WITH VARIOUS COMPONENTS OF THE ENVIRONMENT AND POSSIBLE STRATEGIES FOR THEIR RISK ASSESSMENT

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Abstract:

A remarkable progress has been noted in the area of nanotechnology in recent years as evident from its widespread use in textile, electronics, pharmaceuticals, cosmetics, foods and environmental remediation. Despite tremendous benefits, the inevitable release of engineered nanoparticles (ENPs) in the environment with the development of nanotechnology is a serious case of concern of environmental biologists worldwide. However, a few studies have already demonstrated the toxic effects of nanoparticles on various organisms, including mammals. But scanty and fragmentary information are available on probable inputs, fate and interactions of these nanoparticles with various components of the environment. Thus the present review is aimed to address the current understanding of the structure, fate, behaviour, ecotoxicity test methods and environmental risks assessment of ENPs. Though a detailed mechanism of toxicity caused by ENPs is not yet elucidated, a few mechanisms like damage to membrane integrity, protein destabilization and oxidation, damage to nucleic acids, production of reactive oxygen species, interruption of energy transduction, release of harmful and toxic components are likely involved in the damage caused by ENPs.

Key Words: Engineered nanoparticles, Toxicity, Risk assessment, nanotechnology.

BCDACPT/NS-123

SIGNIFICANCE OF TUMOUR MARKERS IN CANCER OF GALL BLADDER

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Abstract:

In India, GI tract cancer is one of the ten leading cancers. Among Indian males it stands second to oral cancer and in females, it shares the third place. Most common malignant disorder of GIT is seen in our country that of liver, bile, gall bladder, pancreas, bileduct and colorectal. Aim: To see the significance of tumour markers in gall bladder cancer. Materials and Methods: This study comprise 225 cases of GI tract cancers was carried for more than two years. Of these, 22 subjects had gallbladder cancer. Tumour markers viz. CA19-9, CEA and AFP were assayed pre and post-operative cases and their role in gallbladder cancer was evaluated. Results: It was observed that serum concentration of CA 19-9 increased with advancing stage, but the same is not true for AFP and CEA. Sensitivity of these markers AFP, CA 19-9 and CEA in the detection of gall bladder cancer was determined. CA 19-9 is the most sensitive of all the three tumour markers in the detection of gall bladder cancer. Conclusion: The combination of CA19-9 and CT (or US) is a reasonable, cost-effective, noninvasive approach to establishing the diagnosis of pancreatic, cholangitic, or biliary cancer in nonicteric patients.

Keywords: CA19-9; CEA; AFP; Gall Bladder Cancer

BCDACPT/NS-124

REVIEW ON FERROFLUIDS IN MAGNETIC HYPERTHERMIA

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Abstract

Ferrofluids are colloidal liquids made of nanoscale ferri/Ferro magnetic particles (particle size 10nm or less) in carrier fluids which become strongly magnetized in presence of magnetic field. Thorough surfactant coatings of particles prevent clumping. Large ferromagnetic particles are ripped out of homogeneous colloidal mixture, clumped into magnetic dust when exposed to magnetic fields. Ferrofluids usually don't retain magnetization in the absence of externally applied field, thus are called "superparamagnets". Magnetic hyperthermia is the name given to an experimental cancer treatment, although it has also been investigated for the treatment of other ailments, like bacterial infections. It's based on the fact that magnetic nanoparticles, when subjected to an alternating magnetic field, produce heat, if these are put inside a tumor and the whole patient is placed in an alternating magnetic field of well-chosen amplitude and frequency, the tumor temperature would rise.

Key Words: Ferrofluids, Alternating magnetic fields, Cancer treatment, Tumor.

BCDACPT/NS-125

COMMON AILMENTS IN PANTHERA TIGRIS (TIGER)

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Abstract

Panthera tigris consist eight subspecies, out of which four are already extinct. Tigers may live in wide range of environmental conditions, Basic requirements includes sufficient water, plant cover, and prey, connected forests with good prey and sufficient undisturbed breeding areas. Life span on an average of the species is 20-26 years, considered in wild and conservations. Mortality is high in first 2 years of life - up to 50% in wild, Cubs die of diseases, starvation, attack by predators, attack by male tigers, Juvenile males have higher mortality rate than females, likely due to independence at earlier age. More adult tigers are killed by humans than die by any other means, hunting injuries and infections from porcupine quills can lead to death in wild. Though disease does not appear to be a major cause of death in tigers in wild but in captivity is a worrisome factor of their death. Disease is rare but exposure to pathogens is common. Feline corona virus (FCoV), canine distemper virus (CDV), feline parvovirus (FPV), Rabies virus, H5N1 avian influenza virus and *Toxoplasma gondii* are the common infective agents. Other viral diseases in zoo tigers include feline herpes virus 1, hepatitis. Certain bacterial infections like *Escherichia coli*

plus *Clostridium perfringens*, Salmonellosis, *Mycobacterium bovis* and *Trypanosoma* infection were observed in captive species. These diseases are more likely to claim the life of the wild cat in their natural habitat, as opposed to in captivity, since they do not have access to medical care. Though vaccination is the key but therapy with supportive antibiotics, symptomatic drugs for a longer period is given in order to minimise fatal secondary infections.

Key words : *Panthera tigris*, good prey, breeding areas, Cubs, Feline corona virus, *Mycobacterium bovis*

BCDACPT/NS-126

**EVALUATION OF CNS DEPRESSANT ACTIVITY AND SEPARATION OF
PROTEIN FROM *Abroma augusta* LINN. BY GEL ELECTROPHORESIS**

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Abstract:

Herbal medicines are getting more importance in the treatment of various chronic and acute diseases. *Abroma augusta* Linn f. is one of Ayurvedic remedy that has been mentioned in Indian system of traditional medicine. The root of plant can be used to treat dysmenorrhoea, amenorrhoea and other menstrual disorder powdered roots act as an abortification, and antifertility agent. Leaves are useful in treating uterine disorder, diabetes, rheumatic pains of joints and headache with sinusitis. The aim of the present study was to isolate protein from the plant *Abroma augusta* through gel electrophoresis. After performing the experiment it has been found that *Abroma augusta* contained a protein of high molecular weight, as it is compared to BSA (standard protein, mol wt-68). Protein band of the sample appears above of the BSA band. Evaluation of antidepressant activity was conducted by using mice as an experimental animal in Actophotometer. This activity of the plant extract at the dose of 20 mg/Kg body weight was compared by taking a standard drug Diazepam (5 mg/Kg). The CNS depressant activity of the plant attributed to the presence of flavonoid, tannin and saponin phytoconstituents.

Key Words: *Abroma augusta* Linn., CNS depressant activity, Gel electrophoresis

BCDACPT/NS-127

A LITERATURE REVIEW ON " IMPORTANCE OF BIOTRANSFORMATION"

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Abstract:

Biotransformation is the enzymatic process in liver and other tissues that modify the chemical structure of xenobiotics, render them more water soluble, increase their elimination & decrease their half-life. Biotransformed metabolites are chemically different from the parent molecule. Possible consequences of biotransformation include the production of inactive metabolites (most common), metabolites with increases or decreases in potencies, metabolites with qualitatively different pharmacological actions, toxic metabolites & active metabolites from inactive drugs. Biotransformation reactions normally involve two phases, phase-I and phase-II. Enzymes catalyzing phase-I reactions include cytochrome P450, alcohol dehydrogenase etc. and enzymes catalyzing phase-II reactions include glucuronyl transferase, sulfotransferase etc. Xenobiotics may induce biotransformation reactions or inhibit them. Phase I reactions include reactions such as oxidation, reduction, and hydrolysis. Phase II metabolites are normally inactive. It may result in inactivation, activation, or no change in pharmacological potency / activity. Factors influencing xenobiotic biotransformation include species, strain and genetic variation, age, diet etc.

Key Words : Biotransformation, Xenobiotics, enzymatic process

BCDACPT/NS-128

NANOSPONGES A NEW ERA OF DRUG DELIVERY

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Abstract:

Nanosponges are the novel and emerging technology and one of the most promising fields of science because of its application in controlled drug delivery systems. These are tiny mesh-like structures with a size of about a virus, which can be filled with a wide variety of drugs. These tiny sponges can circulate around the body until they encounter the specific target site and stick on the surface and begin to release the drug in a controlled and predictable manner. Because the drug can be released at the specific target site, it will be more effective for a particular given dosage. Another important character of these sponges is their aqueous solubility; this allows the use of these systems effectively for drugs with poor solubility. This nanosized drug delivery has advantages because of its high stability, high carrier capacity and feasibility due to incorporation of both the hydrophilic and hydrophobic molecules. Conventional dermatological and personal-care products typically provide active

ingredients in relatively high concentrations within a very short duration of action but the nanosponges are the unique technology for the controlled release of topical agents of prolonged drug release and retention of drug form on skin. A wide variety of substances can be incorporated into a formulated product such as gel, lotion, cream, ointment, liquid, or powder to reduce the irritation and to get a release of drug in sustained manner.

Key words : Nanosponges , controlled drug delivery, hydrophilic , hydrophobic

BCDACPT/NS-129

PREPARATION AND EVALUATION OF ACYCLOVIR LOADED EUDRAGIT® RLPO NANOPARTICLES AS SUSTAINED RELEASE CARRIER

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Abstract:

The purpose of this work was to develop Eudragit® RLPO based nanoparticles of acyclovir in order to increase its efficacy because acyclovir has oral bioavailability of only 10 to 20 %. The nanoparticles were prepared by nanoprecipitation technique. Pluronic F68 was used as stabilizer. The nanoparticles were characterized by particle size, entrapment efficiency, DSC, SEM, and *in-vitro* drug release. It was found that as drug: polymer (Acyclovir: Eudragit®RLPO) ratio increased from 1:1.5 to 1:2, particle size was increased significantly and drug entrapment also increased but thereafter, further increase in drug: polymer ratio showed reduced or insignificant change in the drug entrapment efficiency. DSC results showed that in the prepared nanoparticles, the drug was present in the amorphous phase and may have been homogeneously dispersed in the polymer matrix. *In vitro* drug release study of formulations showed release in 32 h in the range 67.92% to 97.95%. The release was found to follow non-Fickian diffusion mechanism with first order drug release for all batches. These preliminary results indicate that acyclovir loaded Eudragit® RLPO nanoparticles could be effective in sustaining drug release for a prolonged period.

Key Words: Nanoparticle, Nanoprecipitation, Acyclovir, Bioavailability

BCDACPT/NS-130

A LITERATURE REVIEW ON "INSOMNIA AND ITS MANAGEMENT"

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Abstract:

Patients with insomnia most commonly described difficulty with falling asleep and, less commonly, difficulty maintaining sleep or a perception of unrefreshing sleep. Sleep is of two types, REM sleep and NREM sleep. During insomnia it is postulated that the duration of REM sleep decreases and the proportion of NREM sleep increases. Insomnia often results in day time fatigue, general malaise, and, in severe cases, cognitive and mood disturbances. More than 50% of elderly people have insomnia, it is typically undertreated and non-pharmacologic interventions are underused by health care practitioners. Medications such as steroids, bronchodilators and some antidepressants can cause insomnia. Chronic insomnia is often multifactorial, encompassing components related to psycho physiologic issues, drugs and maladaptive behaviors. Transient and short-term insomnias usually result from stress or the use of certain pharmaceuticals or drugs and may be managed by reduced caffeine use, behavioral means or pharmacologic treatment. Long term insomnia is often a symptom of a medical or psychiatric condition or a primary sleep disorder. A diagnostic workup is expected; treatment should focus on the causative condition as well as addressing the sleep problem itself. Established medications for the symptomatic treatment of insomnia include benzodiazepines, Zolpidem, Zaleplon and certain antidepressants or occasionally antihistaminic drugs.

Key words : Insomnia ,stress ,antidepressants , antihistaminic

BCDACPT/NS-131

THE POSSIBLE INTERACTION OF VITAMIN D AND OBESITY WITH REGARD TO TYPE II DIABETES AND INSULIN RESISTANCE

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Abstract:

The possible interaction of vitamin D and obesity with regard to type II diabetes and insulin resistance has not been well studied. The aim of the present study is to review the effect modification of obesity on the association between vitamin D and insulin resistance/type II diabetes. Vitamin D is thought to impact type II diabetes through various mechanisms, including impaired pancreatic beta-cell function and insulin resistance. Many of these pathways are biologically relevant to obesity as well, given that obesity is a risk factor for type II diabetes, insulin resistance and low serum vitamin D. These effects were observed in surveys conducted by the National Centre for Health Statistics (NCHS), part of the Centres

for Disease Control and Prevention. Survey participants from the U.S. non institutionalized civilian population were selected using a stratified multistage probability sample design. In order to increase the reliability and precision of estimates, participant recruitment included oversampling of adolescents, elderly persons, non-Hispanic blacks, Mexican Americans, and low-income, non-Hispanic whites. The bioavailability of vitamin D was decreased due to excess storage in body fat compartments; obesity may interact with vitamin D to synergistically influence the risk of insulin resistance and type II diabetes.

Key Words: Diabetes, Vitamin D, Obesity, Insulin resistance

BCDACPT/NS-132

PARKINSON'S DISEASE - A NEURODEGENERATIVE DISORDER

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Abstract:

Parkinson's disease is a common neurodegenerative disorder ,still now incurable .It appears when certain nerve cells of the brain, in a region called the substantia nigra ,die or become impaired .These nerve cells are responsible for producing DOPAMINE ,which enables smooth ,coordinated muscular motions throughout the body. This disease first identified in 1817 by Dr. James Parkinson. There are a wide range of drugs treatment for the disease i.e. amantadine ,anticholinergics ,levodopa are used .Some therapeutic interventions are use along with the drugs .Anticholinergics are the first widely accepted treatment for Parkinson's but not be used as first time treatment. The early stage patients considered for treatment with levodopa in combination with a dopa decarboxylase inhibitor & monoamine oxidase beta inhibitors. Amphetamine is a non ergot dopamine antagonist delivered subcutaneously for Parkinson's .Some oral supplements are alternative therapist as adjuvant to conventional treatment . Dementia depression and psychosis develop in Parkinson's disease .Rivastigmine available in both tablet and transdermal patch forms licensed treatment for Parkinson's .Vascular parkinsonism describes parkinsonism caused by cerebrovascular disease .limbs , trunk and face are indicates dyskinesia a symptoms which progresses Parkinson's disease .Slowness of initiations of voluntary movement are same symptoms like bradykinesia indicates also both progress .Rasagiline is not recommended for idiopathic parkinson's disease .The range of drugs involve & the difference in severity & frequently of adverse reaction make it difficult to present universal advice for limiting harm across all potential combination.

Key words: Neurodegenerative disorder ,Dopamine, Anticholinergic , Rivastigmine , Bradykinesia .

BCDACPT/NS-133

**DESIGNING PHARMACOSOME OF MODEL BCS CLASS II & CLASS III
DRUGS FOR SOLUBILITY AND PERMEABILITY ENHANCEMENT**

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Abstract:

In the recent advancement of nano-vesicular drug delivery system, phararmacocome plays a leading role in achieving solubility & permeation enhancement. Pharmacosomes are lipid based nano-vesicular drug delivery systems that are appropriately elaborated as the colloidal dispersion of drugs having a covalent bonding with lipids. Pharmacosomes may exist as ultrafine vesicular, micellar, or hexagonal aggregates depending upon the chemical structure of the druglipid complex. Any drug possessing an active hydrogen atom (-COOH, -OH, -NH₂) can be esterified with or without spacer chain to the hydroxyl group of a lipid molecule, leading to formation of an amphiphilic complex. Due to amphiphilicity, active loading of drugs, high and predetermined entrapment efficiency, improved stability over liposomes, niosomes & transferosomes, pharmacosomes become appropriate model for delivering drugs with precision and selectivity. Interaction of pharmacosomes with biomembranes can lead to change the phase transition temperature of biomembranes, improving the membrane fluidity leading to enhanced permeation. Due to mesomorphic behaviour of pharmacosome, the interfacial tension at higher concentration is greatly reduced, resulting an increase in the contact area, thereby increasing solubility and bioavailability of drugs. Pharmacosome hold great promise for reaching the goal to improve solubility and permeability of BCS class II and class III drugs. The preparation of pharmacosomes of Rosuvastatin (BCS Class II drug) demonstrates encouraging results of improved solubility & log P value. Similarly further experiments with formation of Pharmacosome of Metformin (BCS Class III drug) might show benefit in permeation improvement & reduction in dosage frequency.

Key words: Pharmacosome, Amphiphilic, Permeability, Bioavailability, phase transition temperature

BCDACPT/NS-134

**DEVELOPMENT AND EVALUATION OF GLIPIZIDE FLOATING BEADS FOR
ORAL DRUG DELIVERY SYSTEM**

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Abstract:

Oral controlled release drug delivery system has recently been gained huge potential in pharmaceutical field to achieve improved therapeutic advantage such as ease of dosing administration, patient compliance and flexibility in formulation. Over the last few decades

several gastro-retentive drug delivery approaches being designed and developed which includes high density (sinking system), low density (floating system) and mucoadhesive system. Drugs those are locally active in the stomach and/or have narrow absorption window in gastrointestinal tract are generally used in gastroretentive form. The aim of the present study was to formulate and evaluate the parameters like beads size, swelling index and density of glipizide microbeads. Gastro retentive glipizide beads were prepared using gellan gum; malic acid and magnesium stearate to control the release of glipizide. The beads size increases due to gellan gum as it is viscous in nature. The density of glipizide beads was less than 1 as gellan gum and magnesium stearate has low density. The swelling index depends upon the amount of magnesium stearate in the formulations due to its lipophilicity. The present study can be further extended to evaluate the bioavailability of the glipizide microbeads.

Key Words: Glipizide microbeads, Gastroretentive Drug Delivery Systems, Swelling Index, Bead Size, Density.

BCDACPT/NS-135

RECENT ADVANCES IN HERBAL MEDICINES FOR THE TREATMENT OF PARKINSON'S DISEASE

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Abstract:

Herbal medicines have attracted considerable attention in recent years, which are used to treat Parkinson's disease (PD). Parkinson's disease is a chronic neurological disorder. In ventral midbrain, particularly in substantia nigra pathological features show that dopaminergic neurons progressively degenerate, which causes a consequent reduction of dopamine (DA) levels in the striatum. The three main strategic developments that have led to progress in the medical management of PD have focused on improvements in dopaminergic therapies, the identification of non-dopaminergic drugs for symptomatic improvement and the discovery of compounds to modify the course of PD. The relevant compounds, herbal extracts and formulations belong to 24 genera and 18 families, such as *Acanthopanax*, *Alpinia* and *Astragalus* were reported to be effective on PD models by modulating multiple key events or signaling pathways implicated in the pathogenesis of PD. The plant species in these genera and families may be the most promising candidates for further investigation and deserve further consideration in clinical trials. The herbal medicines can be an alternative and valuable source for anti-Parkinsonian drug discovery. Active components in some of the herbal extracts and the compatibility law of herbal formulations remain to be further investigated.

Key Words: Parkinson disease, Dopamine, Herbal medicine.

BCDACPT/NS-136

ARTIFICIAL HEART

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Abstract:

End-stage heart failure represents a highly morbid condition for the patient with limited treatment options. From a surgical perspective, the treatment options for effective long-term survival are usually limited to heart transplantation, heart-lung transplantation or implantation of a destination mechanical circulatory support device. Assuming an advanced heart-failure patient is indeed deemed a candidate for transplantation, the patient is subject to shortages in donor organ availability and thus possible further decompensation and potential death while awaiting transplantation. Various extracorporeal and implantable ventricular-assist devices (VADs) may be able to provide temporary or long-term circulatory support for many end-stage heart-failure patients but mechanical circulatory support options for patients requiring long-term biventricular support remain limited. Implantation of a total artificial heart (TAH) currently represents one, if not the best, long-term surgical treatment option for patients requiring biventricular mechanical circulatory support as a bridge to transplant. The clinical applicability of available versions of positive displacement pumps is limited by their size and complications. Application of continuous-flow technology can help in solving some of these issues and is currently being applied in the research towards a new generation of smaller and more effective TAHs. In this review, we discuss the history of the TAH, its development and clinical application, implications for anesthetic management, published outcomes and the future outlook for TAHs.

Keywords: heart transplantation, heart-lung implantation, TAH, VAD

BCDACPT/NS-137

HEALTH BENEFITS OF GREEN TEA

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Abstract:

All true teas - as distinct from herbal and flower infusions, which tea lovers call tisanes - are made from the leaves of a magnolia related evergreen tree with the botanical name of *Camellia sinensis*, and also yields a variety of white, green and black tea. Tea is one of the most widely consumed beverages in the world, next only to water for enjoyment and health. The green tea is made from briefly steaming the just harvested unoxidised leaves. The reason why green tea has got more health benefits compared to black tea is because of its processing. Black tea is processed in such a way that fermentation is allowed where as in green tea processing fermentation is avoided. The major components of interest are the polyphenols which are responsible for the antioxidant and other health benefits of green tea. The major polyphenols in green tea are flavonoids. The major flavonoids in green tea are the

Catechins, Epicatechin (EC), Epigallocatechin(EGC), Epicatechin gallate(EGG) and Epigallocatechin gallate(EGCG). Green tea is the least processed and thus provides the most antioxidants polyphenols, notably a catechin called epigallocatechin-3 gallate(EGCG). Which is believed to be responsible for most of the health benefits linked to green tea. Much research is available depicting the health benefits of green tea for a wide variety of implications, including different types of cancer, heart disease, liver disease etc. There is also a wide range of uses for green tea in anti-viral and anti-bacterial, blood pressure, immunity, food poisoning, diabetes, weight loss, relieve depression and stress.

Key words: Green tea, Catechins, EGCG, Health benefits, Polyphenols.

BCDACPT/NS-138

MISUSE AND HARMFUL AFFECTS OF PHARMACEUTICALS/INDUSTRIAL PRODUCTS

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Abstract:

Most of the products which we use in our daily lives are included under pharmaceuticals. It includes different cosmetic products, antiseptics, disinfectants, food products and most importantly - the medicines. Medicines are used to save the lives of people. But their misuse may lead to severe harmful affects which may lead to death. The misuse can be both intentional and unintentional. The use of prescription drugs for committing suicide, consumption of expiry dated drugs(both willingly and unwillingly), addiction to various sedatives and narcotics, not understanding the labels written on the containers of drug, smuggling of narcotics outside the country are some of the examples of misusing the pharmaceuticals. Different medicines and their containers are thrown roadside, riverbanks, water bodies, toilets etc. which leads to the environmental pollution. It badly affects the aquatic animals and the street cows, dogs, cats and other animals menacing or roaming about the streets in search of food. People should understand about the harmful affects. Community pharmacists can alert people about the ill effects of the misusal and the harmful affects of the pharmaceuticals. Patient counseling can help those who wants to commit suicide. Disposal of the pharmaceuticals should be carried out in special ways. These products should not be disposed off with the normal municipal or solid wastes.

Keywords: Pharmaceuticals, Prescription drug, Sedatives, Narcotics, Pharmaceutical wastes, Community pharmacists, Patient counseling.

BCDACPT/NS-139

“DO'S AND DON'T'S FOR RETAIL PHARMACY”

Debabrata Ghosh*, Sanjiban U. Sarkar

Abstract :

Our society is going through a massive change in its health care needs and provisions. Pharmacy itself is a profession in transition. We are a profession in search of a savior. We are waiting for someone else to 'sell' our mission. Yet, experience tells us that no one would really care about pharmacy except pharmacists. Therefore, it is up to every pharmacist to market pharmaceutical care. Merely selling drugs will not keep pharmacists afloat. Almost all Pharmacists in India continue to merely sell medicines arguing that they have no time to do anything but selling. What has happened to the profession of pharmacy? How did we get here? How did we lose sight of what is truly important: the patient? Are we behaving morally and ethically as a profession? Good Pharmacy Practice Guidelines aim to set standards for practice of pharmacy as a profession in India. It is also an affirmative statement conveying that we ourselves control our profession's standards, not anyone else. Community Pharmacy is an important discipline to connect with the community at large via a Retail Pharmacy unit. As per our local survey, we documented that most of the establishments lacks a qualified person or a Registered Pharmacist. Thus, we went for documentation, explanation and distribution of few Do's and Dont's in the practice of community pharmacy to the proprietors of the establishments. Our efforts were universally accepted by the Retailers. I think it's high time some initiatives are to be taken for updating the knowledge of the retail businessmen in Pharmaceutical field, else patient will soon become customers, who are and will be the end losers.

Key words: Pharmacy, Good Pharmacy Practice (GPP), Community Pharmacy, Retail Pharmacy, Registered Pharmacist

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