



FACULTY OF PHARMACY

organises

# PHARMA ENCLAVE 1.0

## NATIONAL CONFERENCE



“Current Scenario and Innovation  
in Pharma Industry for  
Drug Discovery and Development”  
on  
24th November, 2022

National Conference on “Current Scenario and Innovation in Pharma Industry for Drug Discovery and Development”, 24 November 2022

# Message from Chairman



On behalf of the organising committee of the Pharma Enclave 1.0 National Conference on "Current Scenario and Innovation in the Pharma Industry for Drug Discovery and Development," I am truly honoured and delighted to invite delegates from all around the world to this conference at Kalinga University. It gives me immense pleasure and privilege to serve once as the Chief Patron of this premier conference in this region. A number of peculiar traits that the pharmaceutical industry possesses, both in terms of its organisational structure and the nature of its commercial operations, are rarely understood outside the industry yet have a significant impact on the process of getting new drugs to patients. The chances of a new medicine becoming successful are exceedingly slim, and the process is very time-consuming, expensive, and risky. The research and development process is discussed, along with all of the difficulties it faces, including environmental ones. Many strategies are used to find chemical compounds that could be developed and marketed. A crucial step in the process of discovering and developing new drugs is screening chemical compounds for potential pharmacological effects. In 2022, the Pharma Enclave 1.0 National Conference on "Current Scenario and Innovation in the Pharma Industry for Drug Discovery and Development" will serve as a national platform for exchanging the most recent research findings in the fields of current drug discovery and translational medicine. The conference will give recognition to the outstanding work of the selected participants and their sharing of expertise. It has been our greatest hope that this conference will function as a national platform to explore potential collaborations in the future. I wish the National Conference all success.

**With Best wishes**

A handwritten signature in black ink, appearing to read 'Rajeev Kumar', written in a cursive style.

**Dr. Rajeev Kumar**

**Chairman & Chief Patron**

# Message from Chancellor



It is my great pleasure and privilege to warmly invite you to the Pharma Enclave 1.0 National Conference on "Current Scenario and Innovation in the Pharma Industry for Drug Discovery and Development," organised by the Faculty of Pharmacy, Kalinga University, New Raipur. The conference is designed to provide and share the latest information and developments in the field of drug discovery and development in the pharmaceutical sector, which has been fundamental to the field of pharmacy. The events of the last decade, which include more innovation steps through safety preclinical and clinical study documentation and reviews for drug discovery and approvals, as well as increased warnings and awareness about its development, have elevated the pharmaceutical industry to the forefront of consumer concerns, and regulators were delighted to invite you to this intellectual summit. We look forward to welcoming you to this enriching conference and meeting all of you in person for a fruitful outcome. My best wishes for a successful conference.

**With Best Wishes**A handwritten signature in blue ink, appearing to read 'S. Arora', with a long horizontal line extending to the left.**Dr. Sandeep Arora****Chancellor & Chief Patron**

**National Conference on "Current Scenario and Innovation in Pharma Industry for Drug Discovery and Development", 24 November 2022**

# Message from Vice Chancellor



As a Patron I am honoured and pleased to welcome you to the Pharma Enclave 1.0 National Conference on "Current Scenario and Innovation in Pharma Industry for Drug Discovery and Development," to be held on 24<sup>th</sup> November 24–25, 2022, organised by the Faculty of Pharmacy, Kalinga University in New Raipur. The conference is timely given the pharmaceutical industry's enormous importance in drug discovery and development, particularly with regard to drug manufacturing and surveillance. Saving lives has always been associated with the pharmaceutical sector. As a result, it has always been highly valued because it has an impact on people's lives. The high expense of medicine development and research, growing consumer costs, and product recalls being done, unfavourable side effects, and more customer knowledge, vigilance, and awareness have all damaged the industry's reputation. The average price paid and the length of time required to get a new medicine to market are roughly \$1 billion and 15 years, respectively. Therefore, it is crucial that the business discovers ways to save time and expense of medication research by creating target-specific medications with few side effects while also conducting pharmacological development. Pharmaceutical industries are accepting and confronting complex challenges. My best wishes for a successful conference.

**With Best wishes**

A handwritten signature in black ink, appearing to be 'R. Shridhar'.

**Dr. R. Shridhar**

**Vice Chancellor & Patron**

**National Conference on “Current Scenario and Innovation in Pharma Industry for Drug Discovery and Development”, 24 November 2022**

# Message from Director General



Dear all, on behalf of the Pharma Enclave 1.0 National Conference on "Current Scenario and Innovation in the Pharma Industry for Drug Discovery and Development" on November 24, 2022, organising committee, I am extremely delighted to welcome all the experts and academics from all over the world. While much encouragement and progress are going on these days in Pharmaceutical Industries it becomes important to understand the theme of the Conference which focuses on Drug Discovery and Development and its key components which includes a series of experimental discovery, reporting, and approval and can drive competitive advantage by developing a stronger benefit profile. In future Pharmaceutical Industries must achieve global coverage and meet market-specific regulatory frameworks. As the Patron it's my pleasure and privilege to welcome you to the wonderful and dynamic campus of the University.

**With Best wishes**

A handwritten signature in blue ink, appearing to be 'Byju John', written in a cursive style.

**Dr. Byju John**

**Director General & Patron**

# Message from Registrar



Greetings! As Patron it is with great pleasure that I welcome you to the Pharma Enclave 1.0 National Conference on "Current Scenario and Innovation in Pharma Industry for Drug Discovery and Development," "24<sup>th</sup> November 2022 hosted by the Faculty of Pharmacy, Kalinga University. I would also like to thank all of you who have worked on putting this successful summit together. The conference's theme will emphasise the fact that drug development takes time. Finding and creating innovative, safe, and efficient medications is a long, expensive, and complicated process. Pharma companies have used a traditional strategy for medication discovery: a series of preclinical tests with safety tests are performed on the drug in question, followed by a lengthy and extremely expensive series of clinical trials involving humans and animals. At the conclusion of this nearly ten-year medication development procedure, they are crossing their fingers that their medication will receive Federal Drug Administration approval. (FDA). The conference looks forward to be filled with enlightening interactive sessions on the topic by bringing together renowned speakers and scientists across the globe, which will surely make it a memorable event. I am extremely thankful to the organising committee for this wonderful and enriching event. My best wishes for a successful conference.

**With Best wishes**

A handwritten signature in blue ink, appearing to read 'Sandeep Gandhi'.

**Dr. Sandeep Gandhi**

**Registrar & Patron**

# Message from Director IQAC



It's my warm wishes and pleasure to welcome all delegates from around the world to the Pharma Enclave 1.0 National Conference on "Current Scenario and Innovation in Pharma Industry for Drug Discovery and Development" on 24<sup>th</sup> November 2022. The conference's goal is to highlight how important the pharmaceutical profession is in providing patients with the medications they require to recover. it aids in the discovery and development of novel medications that save many lives. Recently, there is a lot of advancements in Drug Discovery and development in the pharmaceutical sciences; therefore, there is a need for the transformation of knowledge and technology for all pharmacy students and research scholars. I congratulate you all on your participation in this conference and extend my best wishes from Patron.

With Best wishes

A handwritten signature in black ink, which appears to read 'Vijayalaxmi Biradar'.

**Dr. Vijayalaxmi Biradar**

**Director IQAC & Patron**

# Message from Dean Academic Affairs



Dear all, as a Patron I welcome all the experts and academics from all over the world to Pharma Enclave 1.0 National Conference on "Current Scenario and Innovation in Pharma Industry for Drug Discovery and Development" on 24<sup>th</sup> November 2022. This conference will assist delegates in better understanding the complex steps of pharmaceutical discovery and development. Preclinical research using cell-based and animal models, human clinical trials, and finally securing regulatory approval to market the treatment are all steps in developing and discovering new drugs. As the Patron it's my pleasure and privilege to welcome you to the wonderful and dynamic campus of the University.

**With Best wishes**

A handwritten signature in blue ink, consisting of stylized, overlapping loops and lines.

**Mr. Rahul Mishra**

**Dean Academics Affairs & Patron**



# Message from Chief Guest



As Director & Founder of Ethix Pharma, I am delighted to welcome all knowledge heads to the forthcoming PHARMA ENCLAVE 1.0 National Conference on “Current Scenario and Innovation in Pharma Industry for Drug Discovery and Development” dated on 24<sup>th</sup> November 2022. The conference will witness eminent researchers all over the world and will aim to provide a unique opportunity for researchers, policy makers, and development practitioners to answer some of the challenges in the respective field of drug discovery and development and to outline new solutions for developing them. The conference is organized around a competitive call for sessions and papers. The main theme of the Conference includes interrelated issues, each of them calling for a variety of disciplinary approaches. We are excited and honored to have a chance to work with all the co-hosts, discussants, chairs, and moderators of this conference. I hope that this unique National and multidisciplinary conference will provide our participants with a truly transformative experience through a variety of knowledge and perspectives so that the complex problems in our society can be improved.

All the best!!!!

**Dr. Yogendra Choudhary**

**Director & Founder of Ethix Pharma**

**Chief Guest**

**National Conference on “Current Scenario and Innovation in Pharma Industry for Drug Discovery and Development”, 24 November 2022**

## Keynote Speakers of Pharma Enclave 1.0



**Dr. K. V Kanna Rao**  
Senior expert Science &  
technology Novartis,  
Hyderabad, India



**Dr. Rishi Palliwal**  
Assistant Professor IGTU,  
M.P, India

# Message from Principal, Faculty of Pharmacy



Dear all, on behalf of the organizing committee, I welcome all Pharmacy professionals to the signature event of the year; Pharma Enclave 1.0 National Conference on “Current Scenario and Innovation in Pharma Industry for Drug Discovery and Development “on 24<sup>th</sup> November 2022. The theme for the National Conference is a breakthrough for Pharmaceutical field as it reflects serious concern on the Drug Discovery and Drug Development. Finding a therapeutically effective molecule for the treatment and cure of disease is the goal of drug discovery. The selection of candidates, synthesis, characterisation, validation, optimization, screening, and tests for therapeutic efficacy are all parts of this process. It takes time and effort to develop a drug that can be sold. A million molecules are typically tested, but only one is examined in advanced clinical trials and ultimately made available to patients. My best wishes for the successful and fruitful meet and my sincere regards to the organizers. Good luck to all!!!!!!!.

With Best Wishes

**Dr. Sandip Prasad Tiwari**

**Convenor**

**Principal**

**Faculty of Pharmacy**

# Message from Co-convenors



Dear Colleagues, we are honored and delighted to welcome you to the Pharma Enclave 1.0 National Conference on “Current Scenario and Innovation in Pharma Industry for Drug Discovery and Development” on 24<sup>th</sup> November 2022 hosted by the Faculty of Pharmacy, Kalinga University. The process of finding new drugs and developing them has taken a long time. Pharmaceutical firms that focus on research are dedicated to improving knowledge and providing patients with novel treatments. The development of safer and more affordable drugs may benefit from increased government and organisation assistance. We are extremely happy that the Conference will offer a comprehensive range of sessions on Drug Discovery and Development and its wider scope in the Pharmaceutical Industry. We hope you to enjoy arrange of illuminating sessions to connect with expertise from scientific and pharmaceutical community along with influential entrepreneurs through their lectures and presentations who will put forward many thought provoking strategies and innovations on the topic. We are looking forward to meet all of you in Kalinga University for this wonderful session.

**Mr. Pranjul Shrivastava**

**Co-Convenor**

**Assistant Professor**

**Faculty of Pharmacy, Kalinga University**

**Ms. Khushboo Gupta**

**Co-Convenor**

**Assistant Professor**

**Faculty of Pharmacy, Kalinga University**

# Message from Organizing Committee



Mr. Sudeep Mandal  
Assistant Professor



Mr. Saurabh Sharma  
Assistant Professor



Ms. Rajni Yadav  
Assistant Professor



Ms. Jayshree Swarnkar  
Assistant Professor



Mrs. Srishti Namdev  
Assistant Professor

It is a matter of great pleasure for giving this message for a one day National Conference on "Current Scenario and Innovation in Pharma Industry for Drug Discovery and Development" on 24<sup>th</sup> November 2022" Organized by Faculty of Pharmacy, Naya Raipur, This is great opportunity for students, research scholars and academicians to present their innovative ideas and research work on National platform. We are glad to be the part of hybrid mode conference, providing insights on Drug Discovery and Development. This hybrid mode conference will add on in understanding this current status. We wish the National hybrid mode conference all success.

**National Conference on "Current Scenario and Innovation in Pharma Industry for Drug Discovery and Development", 24 November 2022**

# Advisory Committee

- Dr. Amit Roy, Professor & Principal, Columbia Institute of Pharmacy, Tekari, Raipur, India
- Dr. Chanchaldeep Kaur Professor & Principal, Rungta College of Pharmaceutical Sciences and Research, Raipur, India
- Dr. Ravindra Pandey Professor, Columbia Institute of Pharmacy, Tekari, Raipur, India
- Dr. Shiv Shankar Shukla Professor, Columbia Institute of Pharmacy, Tekari, Raipur, India
- Dr. Satyabrata Bhanja Principal, RITEE College of Pharmacy, Mandir Hasaud, Raipur, India
- Dr. Trilochan Satapathy, Associate Professor, Institute of Pharmacy, Pt. Deendayal Upadhyay Memorial Health Sciences, Raipur, India
- Dr. Shekhar Verma Professor & Principal, University Institute of Pharmacy, Pt. Deendayal Upadhyay Memorial Health Sciences, Raipur, India
- Dr. Deepak Dash Professor & Principal, Royal College of Pharmacy, Raipur, India
- Dr. Shruti Rathore Professor & Principal, LCIT School of Pharmacy, Bilaspur, India
- Dr. Surendra Saraf, Principal, Columbia College of Pharmacy, Raipur, India
- Dr. Shivani Paliwal Assistant Professor, GGU, Bilaspur
- Dr. Vijay Singh Professor & Principal SRSU, Raipur
- Dr. Anshita Gupta Soni Principal & Associate Professor, SRIP, Raipur

# About the Conference

The Conference entitled “Current scenario and innovation in the pharma industry for drug discovery and development”. The main objective of the conference is the Pharmaceutical Profession plays a significant part in providing patients with the medications they need to recover. It aids in the discovery and development of novel medications that save many lives. The pharmaceutical sector will be greatly impacted by a number of technological innovations and the latest developments. Recently there is a lot of advancements have occurred in Drug discovery and development in Pharmaceutical sciences therefore there is a need for transformation of the knowledge and technology for all the pharmacy students & research scholars.

# About Kalinga University

Kalinga University, Raipur is a NAAC accredited University with Grade B+ and the Only Private University in Chhattisgarh ranked in Top 101-150 Universities in NIRF Ranking 2022 and has emerged as a centre of excellence of higher education in Central India. Strategically located in the Smart City of New Raipur, this University has started carving a niche for itself in the education domain and is rising as a shining star on the horizon of quality education.

**Infrastructure** – Kalinga offers World Class Infrastructure and student facilities with student centric approach. Highest attention is paid to hands on learning approach and students are encouraged to come up with innovative ideas for projects and practical's. The University has more than 90 laboratories and workshops, all well equipped with the latest, state of the art apparatus and tools. Special emphasis is given to the development of communication skills through the language lab. More than 1000 computers are available for the use of the students.

**Establishment** – Established in 2013, this University has been able to win the confidence of over 8000 students. Meritorious students from all over the country and various foreign countries like Afghanistan, Angola, Bangladesh, Cameroon, Gambia, Ivory Coast, Kenya, Lesotho, Liberia, Malawi, Namibia, Nepal, Nigeria, Papua New Guinea, South Sudan, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe, etc have chosen this University for their education and career.

**Schools of Excellence** –Currently the University is serving the student community through various UG and PG programs namely Engineering, Law, Pharmacy, Arts & Humanities, Science, Commerce & Management, Biotechnology, Information Technology, Library Science, Fashion Design & Interior Design.



# About Faculty of Pharmacy

Our mission as Faculty of Pharmacy of Kalinga University is to raise qualified pharmacists and scientists, who have conceived principles and ethical concepts of the pharmacy profession, have owned a top-level international fit -out that can serve as a first-step health advisor in community health, and have earned the property of pursuing the latest scientific and technological progress in this profession. To contribute to scientific research in our scope at universal and regional levels. To use the obtained knowledge for benefit of the community through pharmacy professional service. To become the best and most respected faculty of pharmacy in our region under the roof of a faculty which is able to pass on the knowledge necessary for obtaining employment in the international drug industry and the other branches of this profession. Our vision is to grow excellent individuals, who are appropriate to universal criteria of the pharmacy profession, respectful to his/her job, conscientious, helpful to society, owning analytical thinking, inclined to teamwork, and who have earned internationally top-level education and instruction in the scope of pharmaceutical sciences, as well as to serve to an exact science and community health. The faculty has student laboratories equipped with the latest technological and educational infrastructure necessary for pharmaceutical sciences.

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# Abstract

PE 1.0/NC 001

## FUNDAMENTALS OF DRUG DESIGN AND DISCOVERY

Ajay Mahavir Annadate, Heena Bholaram Choudhary, Rohan Rajkumar Patekar, Mithun Rudrapal\*, Sanjay G. Walode

Rasiklal M. Dhariwal Institute of Pharmaceutical Education and Research, Chinchwad, Pune

### Abstract:

The term "drug design" really refers to "ligand design" i.e., design of a small molecule that will bind tightly to its target. Rational drug design is also known as "Rational design" involves a systematic procedure for discovering novel medications based on biological target information. It involves the designing of small molecules with comparable shapes and charges to the complex target. Drug discovery is a process by which a drug molecule is identified and partially validated for the treatment of specific disease. Over the last few years, computer aided drug design (CADD) also recognized as *in silico* screening has become a powerful technique. CADD works with collaboration between structure biologists, biophysicists and computational scientists for discovery of new chemical entities. CADD and bioinformatics tools provide benefits like cost saving, time to market, and in-sight knowledge of drug receptor interactions.

**Keywords:** Drug design, Drug discovery, Lead discovery, Rational drug design, CADD, Molecular docking

PE 1.0/NC 002

## AN UPDATED REVIEW ON SOLID DISPERSION

Sukh Pal Kashyap\*, Sobhna Singh

Department of Pharmacy, MJP Rohilkhand University, Bareilly

### Abstract:

Solid dispersion is a dispersion of one or more active ingredients in an inert carrier. The solubility and dissolution rate are the major issues of the poor aqueous soluble drugs. Cefuroxime Axetil is an antibiotic drug which is used in the treatment of bronchitis, gonorrhoea, Lyme disease and infections of the skin, ears, throat tonsils and urinary tract. Cefuroxime Axetil is soluble in acetone, ethyl acetate, and methanol. To overcome the same issue, solid dispersions are demonstrated by using various carriers such as polyvinyl pyrrolidone (PVP), Poly ethylene glycol (PEG) etc. In this review, the basic knowledge, classification, methods of preparation, evaluations or characterization and applications of the solid dispersion have been described.

**Keywords:** Solid dispersion, Cefuroxime Axetil, Antibiotic, Solubility, Dissolution rate, Acetone, Ethyl acetate, Methanol, polyvinyl pyrrolidone (PVP), Poly ethylene glycol (PEG).

**PE 1.0/NC 003****SIGNIFICANCE OF MEDICATED CHEWING GUM AS IN DRUG DELIVERY SYSTEM**

Jinendra Kr. Kochar Jain\*, Soma Das, Arnab Bagchi, Sudip Das.  
Department of Pharmaceutics, Himalayan Pharmacy Institute, Majhitar

**Abstract:**

Medicated Chewing Gums (MCGs) represents a unique oral mobile delivery system for different sort of drugs. It is defined as solid single-dose formulation, which may contain more than one active ingredient with base consisting of gum that has to be easily chewed for a predetermined amount of time. Primary goal is to give an overview of various methodologies and evaluation parameters. Additionally, there aren't many evaluation parameters available because the official Pharmacopoeias have only recommended a small number of tests. Therefore, this presentation will mostly address several types of methodologies and evaluation factors.

**Keywords:** Medicated Chewing Gum, Methods, Evaluation Parameters, Applications.

**PE 1.0/NC 004****NOVEL FORMULATION OF NON- IONIC SELF EMULSIFYING DRUG DELIVERY SYSTEM FOR IMPROVING BIOAVILBILITY OF DRUG**

Nisha Limboo\*, Satyam Pradhan, Dr. Pragya Baghel, Dr. Srijita Chakrabarti,  
Himalayan Pharmacy Institute, Majhitar, Rangpo

**Abstract**

The present research aimed to develop a self-micro emulsifying drug delivery system (SMEDDS) to increase the dissolution rate and oral bioavailability of lipophilic as well as hydrophilic drugs. The oral delivery of lipophilic drugs presents a major challenge because of the low aqueous solubility of such compounds. Self-micro emulsifying drug delivery systems (SMEDDSs) have gained exposure for their ability to increase the solubility and bioavailability of poorly soluble drugs. SMEDDS comprises of an isotropic mixture of natural or synthetic oil (castor oil), surfactant (Tween 80), and co-surfactant (span 20). SMEDDS can be orally administered in soft or hard gelatin capsule form and which upon dilution with aqueous media spontaneously forms fine o/w Microemulsions with less than 200 nm in droplet size. The effectiveness of the drug compound's oral absorption from the SMEDDS is influenced by several formulation-related factors, including the concentration of the surfactant, the ratio of oil to surfactant, the polarity of the emulsion, and the size and charge of the droplets, all of which, in essence, determine the ability to self-emulsify. Thus, only very specific pharmaceutical excipients combinations will lead to efficient self-micro-emulsifying systems. Although many studies have been carried out, there are few drug products on the pharmaceutical market formulated as SMEDDS confirming the difficulty of formulating hydrophobic drug compounds into such formulations. These medicinal molecules have all shown a significant improvement in oral bioavailability. Since over 40% of the new therapeutic compounds have hydrophobic properties, it is likely that SMEDDS studies will continue and that more medicinal compounds created using SMEDDS will eventually be available on the pharmaceutical market.

**Keywords:** SMEDDS, Oral bioavailability, Solubility, Lipophilic compound, Non-ionic surfactant.

## PE 1.0/NC 005

**A FACILE SYNTHESIS OF BIS(INDOLYL)METHANES CATALYZED BY VANADIUM-SUBSTITUTED MOLYBDOPHOSPHORIC ACID UNDER ULTRASONIC IRRADIATION**Laxmikant D. Chavan<sup>a</sup>, Sunil G. Shankarwar<sup>b\*</sup><sup>a</sup>Department of Chemistry, Jawaharlal Nehru Engineering College, MGM University, Aurangabad<sup>b\*</sup>Department of Chemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad**Abstract**

A mild and efficient method catalyzed by 10-molybdo-2-vanadophosphoric acid ( $H_5PMo_{10}V_2O_{40}$ ) was developed for the synthesis of bis(indolyl)methanes via electrophilic substitution reactions of indole with various aromatic aldehydes under ultrasound irradiation. 10-molybdo-2-vanadophosphoric acid was synthesized and characterized by FT-IR spectroscopy, thermal analysis and XRD analysis techniques. There are several distinct advantages to this protocol, including high yields, short reaction time, operational simplicity and a facile work-up procedure.

**Keywords:** Bis(indolyl)methanes, Heteropoly acids, 10-molybdo-2-vanadophosphoric acid, ultrasonic irradiation.

## PE 1.0/NC 006

**HIGHLY EFFICIENT ONE-POT SYNTHESIS OF 1,8-DIOXO-OCTAHYDROXANTHENES USING LANTHANUM CHLORIDE AS A CATALYST UNDER SOLVENT-FREE CONDITIONS**Surekha N. Deshmukh<sup>a</sup>, Murlidhar S. Shingare<sup>b\*</sup><sup>a</sup>Department of Chemistry, Jawaharlal Nehru Engineering College, MGM University Aurangabad<sup>b\*</sup>Department of Chemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad**Abstract**

In this study, 1,8-dioxo-octahydroxanthenes were prepared via cyclo-condensation of 5,5-dimethyl-1,3-cyclohexanedione and aromatic aldehyde by using lanthanum chloride heptahydrate as a catalyst under solvent-free conditions. The reaction was carried out without using any solvents and process subscribes to the principles of green chemistry. Moreover, the present protocol offers several advantages such as simple workup, readily available catalyst, eco-safe reaction, excellent yields in short reaction time.

**Keywords:** 1,8-Dioxooctahydroxanthenes, Dimedone, Aromatic aldehydes, Solvent-free conditions.



**PE 1.0/NC 007**  
**NAIL TARGETED DRUG DELIVERY SYSTEMS**

Neha Srivastava

SRMIST Modinagar College of Pharmacy, Delhi NCR Campus, Ghaziabad (U.P)

**Abstract**

Common diseases of nails are leuconychia, onychomycosis, tinea unguis, onychatrophia, onychogryposis, onychorrhexis, psoriasis and paronychia. Nail delivery also known as transaungual drug delivery system refers to drug delivery over the nail, which is considered to be highly desirable to treat disorders of nail due to their localized effects and improved adherence which results in minimal adverse systemic events. Treatment of fungal infections of nails such as onychomycosis, nail psoriasis involves oral administration of antifungals, but it is associated with systemic side effects such as liver toxicity and bioavailability problem due to first pass metabolism and drug interactions. Topical therapies for nail diseases are limited by keratinized cells in the human nail plate. Topical therapies which have been tried so far are Lacquers, gels/solutions, creams / pastes, colloidal system/ liposomes, powders, aerosols /foams/ sprays. This review focuses on presenting an overview of nail delivery systems, recent advances, current challenges and therapies, future prospective.

**Keywords:** Transaungual delivery, nails, topical therapy.

**PE 1.0/NC 008**  
**NANOSPONGES EFFECTIVE TARGETED DELIVERY SYSTEM OVERVIEW**

Namrata Mishra\*, Vijeta Banerjee, M. Alagusundaram

Department of Pharmaceutics, ITM University School of Pharmacy, Gwalior

**Abstract**

The recent advance in nanotechnology has led to the development of targeted drug delivery systems in recent scope and technologies which are also expected to have major objectives in diseases, therapeutics, and diagnostics. These nanosponges are effective targeted drug delivery system has been dreamed of for a long time but it has been largely frustrated by the complex chemistry that is involved in the development of new systems. The invention of nanosponges has become a great step in overcoming certain problems such as drug toxicity, poor bioavailability, and the release of drugs in a foreseeable fashion as they can fit in with both hydrophilic and hydrophobic drugs. Nanosponges are tiny sponges with a size of about a virus (250nm-1m) which can be filled with a wide variety of drugs. They play a vital role in targeting drug delivery in a controlled manner. Nanosponge technology occurs survey widely for the delivery of drugs for oral administration, topical administration, and parental administration. Nanosponges can also serve as an effective carrier for enzymes, proteins, vaccine, and antibodies.

**Keywords:** Nanosponges, preparation of nanosponges, polymers used, applications, factors in the field of drug delivery, characterization.

## PE 1.0/NC 009

**SURFACE FUNCTIONALIZATION OF 5-FU LIPOSOMAL GEL FOR TARGETED DRUG DELIVERY**R Rajagopalan<sup>1\*</sup>, Sanjay K Jain<sup>2</sup>, Piyush Trivedi<sup>3</sup>, R Senthamarai<sup>1</sup><sup>1</sup>Department of Pharmaceutics, Periyar college of Pharmaceutical Sciences, Tiruchirappalli,<sup>2</sup>Department of Pharmaceutics, Dr. Harisingh Gour University, Sagar (Madhya Pradesh)<sup>3</sup>Department of Pharmaceutics, School of Pharmaceutical Sciences, Rajiv Gandhi Technological University, Bhopal**Abstract**

5-Fluorouracil (5-FU) is a potent chemotherapeutic agent frequently used in combination therapy for the treatment of diversified cancers. However, it possesses poor permeability and a short half-life. For the first time, the synthesis of gallic acid-stearyl amine (GA-SA) conjugate combined with 5-Fluorouracil (5-FU) for the treatment of actinic keratosis in A431 epidermal carcinoma cells by the development of surface modified liposome gel for deeper skin penetration, higher retention in targeted site and reduction in systemic toxicity. Combination therapy of 5-FU and GA-SA were studied using A431 cancer cells and HaCaT normal cells. Totally 04 formulations were prepared by varying the soya lecithin and cholesterol viz. 9:1, 8:2, 7:3, 6:4. The 5-FU liposomal gel was prepared and viscosity, spreadability, *ex-vivo* skin permeation, the flux and skin deposition were determined and compared with marketed one. The results of cytotoxicity activity show that the optimized gel formulation possesses an anti-cell proliferation activity of 50 % better than plain 5-FU. The ability of the vesicle preparation to deposit skin was confirmed by confocal laser scanning microscopy. The gamma scintigraphy images noted that significant radioactivity was noted in the targeted area (skin) for the liposomal gel in comparison to marketed one, in accordance with our distribution studies. The study exhibited enhanced and biocompatible potential for the treatment of actinic keratosis in comparison to marketed one by application on the mice model.

**Keywords:** Fluorouracil, Cancer, Gallic acid, permeation, Nano technology

## PE 1.0/ NC 010

**TO STUDY ANTIDIABETIC EFFECT OF POLYMERIC MICROSPHERE FORMULATION OF GLIBENCLAMIDE USING ALLOXAN-INDUCED DIABETES MELLITUS MODEL IN RATS.**

Sunil Patil\*, Sunil Pawar

P.S.G.P.Mandal's College of Pharmacy Shahada, Dist. Nandurbar, 425409, Maharashtra,

**Abstract**

This study was designed to provide information on effect of Glibenclamide microsphere formulation and to examine therapeutic effect in SD rats. Formulation of test item was administered through intra-muscular route for single dose. SD rats were randomized in 5 subgroups. Diabetes in rats was induced by single dose of Alloxan. After 48 hours, diabetes was confirmed by the determination blood glucose level. Test compound, standard drug & drug solution were administered in single dose to different treatment group; blood glucose level was measured up to 9 day after dose administration. Glibenclamide microsphere formulation group

significantly decrease the blood sugar level from 4th hour to 9th day after administration of formulation. Glibenclamide microsphere formulation was decreased blood sugar level consistently up to 9th day; it means that drug release from microsphere formulation was in controlled manner up to 9th day. Based on the results, it could be concluded that Glibenclamide microsphere formulation shows antidiabetic effect when administered through intramuscular route. Based on the findings, single dose administration of 'Glibenclamide microsphere formulation' normalized blood sugar level in rats.

Keywords: Glibenclamide, Diabetes, Microsphere, Alloxan

#### PE 1.0/NC 011

### ION ACTIVATED *IN-SITU* GEL OF FEXOFENADINE HCL FOR NASAL DELIVERY

Sandip Amarsing Tadavi

Research Scholar, P. S. G. V. P. Mandal's College of Pharmacy, Shahada, Maharashtra

#### Abstract:

Purpose of this study was to formulate & evaluate in-situ nasal gel of Fexofenadine Hydrochloride for nasal delivery using polymers possessing insitu gelling properties. Formulation containing Gelerite &  $\beta$ -cyclodextrin were used to formulate insitu nasal gel. Formulations were liquid before administration & underwent rapid gelation upon nasal administration. FT-IR Studies of drug, polymer & their physical mixture of drug -polymers were carried out. The result of these studies revealed that there are no significant changes obtained in the bands of drugs with respect to pure drug. Hence FT-IR study revealed that formulation doesn't having any drug & polymer interaction. In order to evaluate rheological studies, viscosity of the formulation was evaluated using Fungilab Brookfield viscometer. It showed that viscosity was found to be decreased at increasing shear stress, exhibiting shear thinning behavior and increase in viscosity was observed with increase in concentration of polymer. In-vitro diffusion study of fexofenadine HCl of all formulation was carried out which will indicate the effect of variables on the mechanism and kinetics of drug release from formulation.

Keywords: In-situ-gel, gellan gum, gelation, Ion-activated.

#### PE 1.0/ NC 012

### AN OVERVIEW ON THE HYDROPHILIC INTERACTION LIQUID CHROMATOGRAPHY (HILIC)

Prince Thakur\*, Amar Deep Ankalgi, M.S Ashawat

Laureate Institute of Pharmacy, Kangra

#### Abstract

Hydrophilic interaction liquid chromatography (HILIC) is a most popular technique for the separation of polar compounds that are poorly retained by Reverse Phase Liquid Chromatography (RPLC). Hydrophilic interaction liquid chromatography provides approach to effectively separate small polar compound on polar stationary phases. Andrew Alpert introduced the term "Hydrophilic interaction liquid chromatography in year 1990 where polar analytic solute separated on polar stationary phase with polar solvent such as water as a minor constituent of mobile phase. The advantages of HILIC include the ability to retain polar and ionic solutes

that elute too readily in reversed-phase (RP) analysis, and the often different selectivity that is obtained in comparison with RP-LC. HILIC mobile phases typically contain high concentrations of acetonitrile (60-97%) and low concentrations of water (3-40 %), resulting in the advantages of low viscosity and small back pressures, even with relatively long columns. Reversed-phase (RP) separations technique using hydrophobic stationary phases with polar mobile phases so, RP HPLC separations has some limitations such as analyzing highly polar compounds. Even some polar compounds are very difficult to analyze because they require high concentrations of aqueous buffer. HILIC technique is used for the separation of both small and large hydrophilic and very polar molecules, which include, carbohydrates, amino acids, peptides and proteins, glycoproteins, nucleosides, vitamins, phenols, pesticides, toxins and hydrophilic metabolites occurring in food, water, human fluids and human tissues extracts.

**Keywords:** HILIC, RPLC, Buffer pH value, Hydrophilic compounds, Oligosaccharides.

### PE 1.0/ NC 013

## APPLICATION OF SILVER NANOPARTICLE AS AN ANTICANCER AGENT

Deepshika Pradhan

Himalayan Pharmacy Institute, Majhitar, East Sikkim

### Abstract:

Cancer is a complex, multifactorial disease which has the characteristic feature of the uncontrolled growth and spread of abnormal cells, and it is treated by various treatments including chemotherapy, hormone therapy, surgery, radiation, immune therapy, and targeted therapy. Therefore, the challenge is to identify effective, cost-effective, and sensitive lead molecules that have cell-targeted specificity and increase the sensitivity. Recently, AgNPs have been shown much interest cells. Nanomedicine is one of the fast developing and promising strategies to combat cancer using metallic nanoparticles. Current treatment for cancer, such as chemo- and radiation therapy, has limitations due to unexpected drug-associated side effects, lack of specificity of low drug concentrations at the tumor target site, and the development of chemo-resistance. Nanoparticle-mediated therapy is the best, most suitable, and alternative therapeutic strategy in cancer therapy. Nanoparticles (NPs) have the ability to target through passive or active targeting of particular diseased cells or tumor tissues by the encapsulation of therapeutic agents with nanoparticles and they have been used as drug delivery systems. AgNP has been formulated using extract of *T. baccata* plant, which showed better anticancer activity than the previously reported ones due to the synergistic role of Taxus compound in the nanoparticle cytotoxicity. It was concluded that the biogenic synthesis of AgNPs in combination with targeted therapy of tumours may give rise an alternative approach for efficient treatment of cancers with fewer side effect.

**Keywords:** Nanoparticles, Silver nanoparticles, Chemo-resistance, Cancer therapy, Synergistic

**PE 1.0/ NC 014****BILAYER TABLETS TECHNOLOGY-AN OVERVIEW**

Satyam Pradhan\*, Nisha Limboo, Dr. Pragya Baghel, Dr. Srijita Chakrabarti,  
Himalayan Pharmacy Institute, Majhitar, Rangpo, East Sikkim

**Abstract**

The present research is aimed to formulate and evaluate the Bilayer tablet for the treatment of hypertension. With the introduction of the bi-layer tablet, a new era in the development of controlled release formulation and the addition of several qualities to successfully distribute pharmaceuticals has begun. A bi-layer tablet is appropriate for the sequential release of two medications in combination. It is also appropriate for tablets with sustained release, where the first layer is for immediate release as the initial dose and the second layer is for maintenance dose. Bi-layer tablets are now being developed by a number of pharmaceutical companies for a range of purposes, including patent extension, therapeutic use, marketing, lowering capital expenditure, etc. The drawbacks of single-layered tablets are being overcome by the advancement of useful technology in bilayer tablets. For each technical stage, a careful selection of excipients and manufacturing conditions is required. High blood pressure patients frequently struggle or fail to control their BP with a single medication. To achieve treatment objectives, the majority of hypertension patients will require the use of two or more antihypertensive medications. When treating hypertension in patients whose blood pressure cannot be well controlled with monotherapy, combinations of antihypertensive medications from different categories can be demonstrated to be more successful than either of the medication.

**KEYWORDS:** Bilayer tablet, Hypertension, Sustained release, immediate release, Maintenance dose

**PE 1.0/ NC 015****IN-SITU GELLING SYSTEM FOR OPHTHALMIC DOSAGE FORMS**

Tanuja Luitel (Sharma)\*, Anjali Basnett, Dr. Srijita Chakrabarti, Sudip Das  
Department of Pharmaceutics, Himalayan Pharmacy Institute, Majhitar, East Sikkim

**Abstract**

In-situ gels are systems which are applied as solutions or suspensions and are capable of undergoing rapid solution to gel transformation triggered by external stimulus such as temperature, pH etc on instillation. The low therapeutic efficacy exhibited by conventional ophthalmic solutions owing to precorneal elimination of the drug, drainage by gravity, nasolacrimal drainage, conjunctival absorption and the absence of controlled release can be overcome by the use of in-situ gelling systems. In in-situ gelling system liquid phase allows the formulation to spread over a larger area than solid forms resulting in a larger absorption surface. On the other hand, the gel phase allows prolonged residence time of the formulation on the ocular surface. Thus in-situ gelling systems exhibit the main requirements of a topical ophthalmic dosage form along with appropriate release properties and extended residence time on the ocular surface and better bioavailability of drug can be achieved by formulating in situ gel. Therefore this presentation will mainly address approaches of in-situ gels and its evaluation parameters.

**Keywords:** In-situ gels, Therapeutic efficacy, Instillation, Controlled release, ophthalmic dosage

**PE 1.0/ NC 016****COMPARATIVE STUDY OF DIFFERENT BINDER CONCENTRATION OF ALOES AS NATURAL BINDER IN THE PREPARATION OF PARACETAMOL TABLET**

Soutik Sarkar\*, Sudip Das

Department of Pharmaceutics, Himalayan Pharmacy Institute, Majhitar, East Sikkim

**Abstract**

Natural binders like different starches, gums, mucilages dried fruits possess binding capacity and are much safer and economical than polymers like PVP. The aim of the work was to compare different concentration of Aloe vera mucilage as a binder for preparation of Paracetamol tablet. The results of the study revealed that 5% aloes mucilage concentration shows good drug release pattern for conventional oral tablets of Paracetamol. Thus, it can be concluded that 5% Aloe vera mucilage may be used as a binder in tablet formulation and possess a high potential for substitution for other more expensive binders.

Keywords: Aloe Vera, Mucilage, Paracetamol, Binder, Economical

**PE 1.0/ NC 017****A PROMISING TOOL FOR PERSONALIZED MEDICINE: 3D PRINTING**

Indrani Saha\*, Ankita Singh, Sudip Das, Pragya Baghel, Dr. Sanjib Bahadur.

Department of Pharmaceutics, Himalayan Pharmacy Institute, Majhitar, Sikkim.

**Abstract**

With the aim of customising medication to a specific individual by taking into account that person's physiology, drug reaction, and genetic profile, personalised medicine has the potential to transform the healthcare industry. There are several three-dimensional (3D) printing is the key technology driving this paradigm change from traditional "one size fits all" to individualised medicine. 3D printing is the process of building a three-dimensional object layer by layer using different computer software. Construction of a variety of objects can be done using 3D printing. Pharmacological dosage forms come in a variety of shapes, medication combinations, and release profiles. The primary 3D printing technological platforms being investigated in the pharmaceutical industry include selective laser sintering, fused filament fabrication, inkjet printing, and binder jetting, pressure-assisted microsyringes and stereolithography. In the future, this technology might be used in clinical settings to deliver medications in accordance with patient needs. By customising the dose, it also demonstrates its promise in personalised treatment. It also gives some insight into how it affects different populations. It also highlights a method for using it in a clinical environment. Additionally, a number of difficulties that must be overcome for this technology to be successful in personalised medicine.

Keywords: 3D printing, personalized medicine, dosage forms, clinical practice.

**PE 1.0/ NC 018****A NOVEL APPROACH IN DRUG DELIVERY SYSTEM: GRDDS**

Shiwangi Periwal\*, Soma Das, Sudip Das, Arnab Bagchi, Dr. Sanjib Bahadur, Dr. Pragya Baghel.  
Department of Pharmaceutics, Himalayan Pharmacy Institute, Majhitar, Sikkim.

**Abstract**

In the field of controlled release solid oral dosage forms, significant technological advancements have been made, and new ideas have been developed recently, particularly for products where a prolonged time of release is accompanied with an extended gastric retention duration. GRDDSs are a cutting-edge strategy in this field (Gastro Retentive Drug Delivery System). By constantly releasing the drug for a long time before it reaches its absorption window, GRDDSs can enhance the controlled administration of medications with an absorption window site. Many efforts have been made in recent years to increase the bioavailability of medications when taken orally. A noteworthy example is the development of drug delivery systems, which were created to increase the bioavailability and effectiveness of medications with a limited window of absorption in the upper gastrointestinal tract and/or to stimulate local activity in the stomach and duodenum. In order to prolong the stomach residence period. Here, the number of techniques employed in GRDDS; including bioadhesive or mucoadhesive systems, expandable systems, high-density systems, floating systems, superporous hydrogels, and magnetic systems have been discussed.

**Keywords:** Gastro retentive drug delivery system, floating system, swelling, expanding system, bio/mucoadhesive system, high density system.

**PE 1.0/ OP 19****CHEMICAL CHARACTERIZATION AND STANDARDIZATION OF AN SIDDHA  
HERBO-MINERAL PREPARATION- SANTHA CHANDRODAYA MATHIRAI**

Shree Devi MS<sup>1\*</sup>, Sathiyarajeswaran P<sup>1</sup>, Kirubakaran N<sup>1</sup>

<sup>1</sup>Siddha Central Research Institute (CCRS), Ministry of AYUSH (Govt. of India), Chennai

**Abstract:**

Santha Chandrodaya Mathirai (Cāntacantirōtaya mātīrai) (SSM) is a classical tablet formulation in Siddha medicine used in various types of fevers. Because of limited research validation in terms of the product compactness, quality and safety, the present study focuses on the formulation, characterization and standardization of the Tablet dosage. To prepare SSM as per SoPs mentioned in classical text and to characterize it chemically using modern analytical techniques. The Tablet dosage were prepared from the In-house R&D GMP Pharmacy facility of Siddha central research Institute and validated through analytical measures like Pre-compression, Post-compression parameters, Physiochemical analysis, analytical studies like HPTLC, SEM with EDAX, FTIR and UV- AS. As per the reference standards, the mean flow property of the Tablet granules (31°) was fair enough, the mean compressibility index (17.3%) and Hausner's ratio (1.452) indicates its good flow character. The tablet passed the USP standards of weight variation in %. The friability test reported the maximum weight loss to be 0.06 %, a good acceptable value. The highest disintegration time was observed at 60 mins. The samples were

devoid of Heavy metals, microbial and aflatoxin contamination. At short UV of 254 nm, long UV of 366 nm, and post derivatized plate in white light there were observation of 6 spots, 8 spots and 12 spots respectively in TLC photo documentation. EDAX reported the presence of Carbon, Oxygen, Sodium, Chlorine, Potassium, and Niobium molecules in the sample with no traces of heavy metals. FTIR spectra showed three high peak areas that corresponds to carboxylic acid, alkane bond, and  $\alpha$ ,  $\beta$ -unsaturated ester. The In-house samples of SSM reported standard values in terms of quality, and safety. Further clinical trials are warranted to validate its efficacy.

**Keywords:** Siddha Tablet, Santha Chandrodaya Mathirai, standardization, PLIM, international guidelines

**PE 1.0/ OP 20**

## **INDIAN HERBAL PLANTS FOR THE TREATMENT OF CANCER**

Satyam Singh

Faculty of Pharmacy , Kalinga University, Naya Raipur

### **Abstract**

Cancer is the second leading cause of death worldwide. Although great advancements have been made in the treatment and control of cancer progression, significant deficiencies and room for improvement remain. Ayurveda originated in India more than 5000 years ago and recommends a number of herbs for preventing cancer and there is a growing body of scientific studies that backs this ancient knowledge of various herbs on people with cancer. Some remedies have been shown to reduce side effects of cancer treatment they are produced from all parts of a plant including the roots, leaves, berries and flowers. Aim and Objective: The aim of this study is to find out of the most effective herbs present in our India which will be profitable for Indian people. Result: study was found that Indian herbs may contain active ingredients that can cause chemical changes in the body and treat the cancerous cell also balance auto-immune system which is responsible for cancer disease .Conclusion: Here are some common herbs which are proven to have anti-cancer properties like amla, garlic, turmeric, ashwagandha, Holi basil, ginger. Other than these common herbs, many medicinal plants also available for example Colchicum, Birch, Marijuana, Yew, periwinkle have properties to treat cancer disease.

**Keywords:** Cancer, garlic, holi basil, colchicum, birch.



**PE 1.0/ NC 021****ANTIBACTERIAL ACTIVITY OF COW'S MILK SILVER NANOPARTICLES AGAINST THE MULTI DRUG RESISTANT (MDR) CLINICAL ISOLATES**

Akshata G Athreya, Ismail Shareef M, S M Gopinath

Department of Biotechnology, Acharya Institute of Technology, Acharya (PO), Bangalore-560

**Abstract**

Resistance profile of bacteria to different kinds of antibiotics (Multi Drug) is an increasing global threat. One of the most exhaustive official studies of AMR commissioned by the UK government- concluded in 2016 that, globally, 7,00,000 deaths each year could be attributed to AMR. Therefore, development of alternate strategies and novel antimicrobial compounds against MDR bacteria is a priority research area. In this background, a great potential in nanotechnology has been realized due to effectiveness of various nanomaterials, especially silver as effective antimicrobial agents. The present study aims to evaluate the antibacterial activity of silver nanoparticles (AgNPs) synthesized from nontoxic, eco-friendly source such as pasteurized cow's milk against the gram positive and negative MDR bacteria isolated from the clinical samples. Obtained AgNPs were characterized by UV-visible spectroscopy, which revealed surface plasmon absorbance peaks, ranging between 400 and 450 nm. Transmission electron microscopy revealed spherical particles ranging between 20 and 200 nm. Fourier transform infrared spectroscopy showed the presence of characteristic C=O and O-H bonds. Scanning electron microscopy-energy-dispersive spectroscopy revealed peak at 3 keV confirming the presence of AgNPs. MDR isolates were identified using 16s r-RNA method and were identified as *P. aeruginosa*, *E.coli*, *K.pneumoniae* and *S.aureus*. Antibiotic sensitivity tests revealed that the MDR's were resistant to 25-26 antibiotics tested. Amongst these, five antibiotics specific for each organism (clinically used) were chosen for antibacterial studies using the disc diffusion method. The AgNPs exhibited effective inhibition zones ranging between 9-14 mm against the isolated MDR's at concentrations (v/v) 50  $\mu$ l and 75  $\mu$ l vis-à-vis negative control (Milk-no inhibition zones recorded) and chosen antibiotics (positive control-no inhibition zones recorded). The combined effect of Antibiotics with AgNPs exhibited a greater inhibition zones in isolated MDR's than AgNPs alone. Thus the present study indicated AgNPs from pasteurized milk as a potential antibacterial agent against the MDR's. Synergistic effect of AgNPs with antibiotics was well observed in case of MDR and these AgNPs could perhaps be used as an alternative to conventional antibiotics.

**PE 1.0/ NC 022****M-RNA VACCINES - NEW ERA OF VACCINOLOGY**

Harshada Kishor Mankar, Prof. Rahul V. Jadhav, Dr. Nitin B Kohale

Kamalprakash Pharmacy College and Research Center Kherda

**Abstract**

Vaccination is one of the major success stories of modern medicine, greatly reducing the incidence of infectious diseases such as measles, and eradicating others, such as smallpox. Conventional vaccine approaches have not been as effective against rapidly evolving pathogens like influenza or emerging disease threats such as the Ebola or Zika viruses. RNA based vaccines

could have an impact in these areas due to their shorter manufacturing times and greater effectiveness. Beyond infectious diseases RNA vaccines have potential as novel therapeutic options for major diseases such as cancer. Unlike a normal vaccine, RNA vaccines work by introducing an mRNA sequence (the molecule which tells cells what to build) which is coded for a disease specific antigen, once produced within the body, the antigen is recognised by the immune system, preparing it to fight the real thing. RNA vaccines are faster and cheaper to produce than traditional vaccines, and a RNA based vaccine is also safer for the patient, as they are not produced using infectious elements. Production of RNA vaccines is laboratory based, and the process could be standardised and scaled, allowing quick responses to large outbreaks and epidemics. Most current research is in to RNA vaccines for infectious diseases and cancer, for which there are several early-stage clinical trials, there is also some early research into the potential of RNA vaccines for allergies. There is still a lot of work to be done before mRNA vaccines can become standard treatments, in the meantime, we need a better understanding of their potential side effects, and more evidence of their long term efficacy.

**Keywords:** mRNA vaccine, immunity, clinical trials

### PE 1.0/ NC 023

#### NANOMEDICINE: NANOTECHNOLOGY AND MEDICINE

Pratiksha D. Sendhavkar

Kamal Prakash Pharmacy College and research centre, Kherda

#### Abstract:

This review paper focuses on the introduction of nanomedicines in the pharmaceutical market, and all the controversy associated to basic concepts related to these nanosystems, and the numerous methodologies applied for enhanced knowledge. Nanomedicine is the application of nanotechnology to achieve innovation in healthcare. Over the last years, nanotechnology has been introduced in our daily routine. From diagnosis to disease monitoring, going through surgery and chemotherapy or regenerative medicine, nanotechnologies virtually impact all fields of current medicine. This review will focus on the development of nanoscale drug delivery mechanisms. The early genesis of the concept of nanomedicine sprang from the visionary idea that tiny nanorobots and related machines could be designed, manufactured, and introduced into the human body to perform cellular repairs at the molecular level. Nanomedicine today has branched out in hundreds of different directions, each of them embodying the key insight that the ability to structure materials and devices at the molecular scale can bring enormous immediate benefits in the research and practice of medicine. Nanostructured drug carriers allow for the delivery of not only small-molecule drugs but also the delivery of nucleic acids and proteins. Delivery of these molecules to specific areas within the body can be achieved, which will reduce systemic side effects and allow for more efficient use of the drug. It expected to have an impact on all industries including semiconductors, manufacturing, and biotechnology.

**Keywords:** Biotechnology, Regenerative medicine, Nanomedicine, Semiconductors, Healthcare

**PE 1.0/ NC 024****EMERGING STRATEGIES IN DRUG DELIVERY TARGETING BRAIN DISORDERS**

Nivya R. M.,

APJ Abdul Kalam Technological University of Kerala, Department of Biotechnology  
Engineering,

Sahrdaya College of Engineering and Technology, Thrissur, Kerala.

**Abstract**

The ameliorating incidence of neurological disorders worldwide is going up day by day, even in such scenario the drug development for various regimes of neurological disorders remains challenging. Especially the disorders concerning central nervous system which is comprised of brain and spinal cord. The most prominent reason for the high failure rate of brain targeting drugs is the difficulty in crossing Blood Brain Barrier (BBB). BBB is a highly protective physiological barrier which is unique and they selectively segregate the brain from circulating Blood. BBB protects brain against the dangerous substances present in the blood stream and balances the nutrients delivery to the brain. However, the presence of BBB largely hurdles the delivery of drugs to targets inside Brain. Hence the major mission in drug delivery to brain, is to deliver therapeutically active molecules across the BBB for the purpose of treating respective brain disorder. Various novel strategies to overcome these limitations and successfully deliver drugs to the brain are being studied and developed like neuroinfuse™ implants, nanomedicine, receptor vector mediated carriers, prodrugs etc. to treat diseases like Meningitis, Alzheimer's disease, Brain abscess, frontotemporal dementia, Parkinson's disease, amyotrophic lateral sclerosis, Epilepsy, Huntington's disease etc. This work studies over varying novel and emerging technologies enabling drug delivery targeting brain disorders.

**Keywords:** Blood Brain Barrier, Drug Delivery, Neurological Disorders, targeted therapeutics, prodrugs

**PE 1.0/ NC 025****GREEN SYNTHESIS AND CHARACTERIZATION OF SILVER NANOPARTICLES USING DESMOSTACHYA BIPINNATA LEAF EXTRACT FOR THE ANTI-MICROBIAL EFFICACY**

Dr. Nitya K

Saveetha Dental College, Chennai, Tamil Nadu

**Abstract:**

The green synthesis of silver nanoparticles is a non-toxic, cost effective and environmentally friendly method for the synthesis of nanoparticles. Silver nanoparticles are being used efficiently due to their antibacterial, anti-fungal, anti-inflammatory and anti-cancer properties. *Desmostachya bipinnata* (Dharbai grass) is a valuable medicinal plant with innumerable medicinal properties. They also possess anti-oxidant, anti-diuretics, anti-cancer, anti-microbial activities. Hence our study aims to assess the therapeutic uses of Db conjugated Silver nanoparticles. The fresh leaves were collected and air-dried. To this, solvents such as Water,

ethanol, methanol, chloroform and acetone were added. The Silver nitrate solution dissolved in distilled water is then added to the above extract and studied for various properties. The results from the UV Spectroscopy showed the presence and uptake of silver nanoparticles in various solvents. SEM-EDS revealed morphometry analysis and to determine the elemental composition of the extract. FTIR done to know the functional groups of the extracted solvents with Db AgNP and NMR to study the phytochemical analysis. Anti-microbial activity were also assessed using Bio-film and microbial colony assay.

### PE 1.0/ NC 026

## PHYTOCONSTITUENTS FOR TARGETED DRUG DELIVERY FOR THE TREATMENT OF RHEUMATOID ARTHRITIS AND CARPEL TUNNEL SYNDROME – AN OVERVIEW

Bhattacharya Vijeta\*, Mishra Namrata M. Alagusundaram  
ITM University, Gwalior

### Abstract:

Rheumatoid Arthritis is a common autoimmune disorder that can cause painful joints with swelling along with bone and cartilage damage. RA is the most common type of Arthritis nowadays. There are various factors are there which are responsible such as age, body mass index, and other disease activities. 0.75% of the Indian population is suffering from arthritis among these the most common is Rheumatoid Arthritis and Osteoarthritis. Nowadays scientists and researchers are more focused on nanomedicine for the treatment of arthritis. They are aiming for synthetic drugs loaded in nanoparticles to easily target the arthritic site in the patient suffering from Arthritis. But the nanoparticles loaded with synthetic drugs have some drawbacks such as drug adverse effects. To overcome these limitations plant-based medicines have received a lot of attention in recent years. The current review work on herbal drugs has mostly focused on different phytoconstituents which can be used for the targeted drug delivery for the treatment of Rheumatoid Arthritis and Carpel Tunnel Syndrome.

**Keywords:** Phytoconstituents, Rheumatoid Arthritis, Carpel Tunnel Syndrome, Targeted drug delivery, Nanoparticles, Nanomedicine.

**PE 1.0 / NC 027****REVIEW ON UTERINE CANCER DUE TO USE OF HAIR PRODUCTS**

Savan Y. Purohit , Dr. Sabera Bijani

Marwadi University, Rajkot

**Abstract**

Around 1.6 million people die from cancer every year worldwide. Numerous factors, including smoking and interaction with carcinogenic substances, can result in cancer. This essay's subject is cancer resulting from the use of hair products. Cancer linked to hormones is caused by routine hair product use. There are numerous dangerous compounds used in hair products, many of which are carcinogenic. When we use chemical relaxers, hair straightener, dyes etc. It can cause hormone-related cancer. One of the hormone-related cancers is uterine cancer, which can be brought on by a variety of factors, including endometrial hyperplasia, beginning periods before the age of 12, never having children, being overweight, having high blood pressure or diabetes, and having a family history of ovarian cancer. According to the findings of the most recent 10-year survey, uterine cancer patients who use hair products frequently (hazard ratio: 1.80, 95% chance) are more likely to develop the disease incidentally. Range of the confidence level: 1.12 to 2.88.

**Keywords:** Uterine Cancer, Hair Products, Hormones, Carcinogenic**PE1.0 / NC 028****A REVIEW ON ANTI-CANCER DRUG FROM MARINE SOURCES**

Sanjana Kumari Sinha\*, J. P. Mohanty, Pallab Ghosh, Chandrika Sharma, Rajat Das

Department of Pharmacognosy, Himalayan Pharmacy Institute, Sikkim

**Abstract**

Cancer is a group of diseases involving abnormal cell growth. A lump, unusual bleeding, a persistent cough, unexplained weight loss, and a change in bowel habits are all potential warning signs and symptoms. These signs of cancer may be present, but there may be other causes as well. Tumors can move to distant parts of the body to produce new tumors, invade neighboring tissues, or both (a process called metastasis). Malignant tumors are another name for cancerous tumors. Malignancies of the blood, including leukemia, seldom develop solid tumours although many other cancers do. Noncancerous tumors do not penetrate or spread to neighboring tissues. Benign tumors typically don't come back after removal, however malignant tumors can. However, benign tumors can occasionally grow to be quite enormous. Some, like benign brain tumors, can have grave side effects or even be fatal. Marine natural products are currently recognized as the most significant source of bioactive compounds and therapeutic candidates. More than 90% of all oceanic biomass is made up of marine flora and fauna, including algae, bacteria, sponges, fungi, seaweed, corals, diatoms, ascidian, and others. They offer a remarkable possibility for the development of new anti-cancer compounds since they are taxonomically distinct, have enormous production potential, and possess novel chemical signatures that are pharmacologically active. In this review we have taken 20 different plants from 15 different families and enlisted their mode of preparations and parts used for anti-cancer activity.

**Keywords:** Marine source, Malignancies, Cancer, Tumors, Benign

**PE 1.0/ NC 029****FORMULATION OF METFORMIN HYDROCHLORIDE TABLET BY USING FENUGREEK SEED MUCILAGE**

Subrata Ghosh\*, J.P Mohanty, Pallab Ghosh, Rajat Das, Chandrika Sharma, Sanjib Bahadur  
Department of Pharmacognosy, Himalayan Pharmacy Institute, Majhitar, Sikkim.

**Abstract:**

This research work aims to develop Metformin Hydrochloride tablet using fenugreek seed mucilage. We used Fenugreek seed because it has antidiabetic activity and It also contains a major proportion of mucilage. The mucilage was extracted by soaking the powdered seed into water for 12-14 hours then, after filtration the filtrate was mixed with ethanol and the precipitated mucilage was dried and grounded into powder. The tablet utilizing the mucilage as excipient was prepared by wet granulation method. The tablets were subjected to various tests. The evaluatory parameters of tablets were found to be within the limits as per Indian Pharmacopoeia.

**Keywords** - metformin hydrochloride, mucilage, antidiabetic, wet granulation.

**PE 1.0/ NC 030****NANOMEDICINE IN DRUG DELIVERY SYSTEM**

Nikita Ghosh\*, J.P Mohanty, Pallab Ghosh, Rajat Das, Chandrika Sharma  
Department of pharmacognosy, Himalayan pharmacy institute, Majhitar, Sikkim  
**Email:** nikitaghoshbdn2017@gmail.com

**Abstract**

Nanomedicine is the medical application of nanotechnology and it is used as the diagnostic instruments or to deliver therapeutic compounds to specific targeted regions in a controlled manner in nano delivery systems, which is a relatively young but fast emerging discipline. Nanotechnology is currently essential to electronics, biology, and medicine. Its use can be evaluated because it calls for the atomic and molecular level design of the materials. Nanomedicine have been demonstrated to be reliable drug delivery systems due to the benefit of their size(1-100nm), and they may be beneficial for encapsulating pharmaceuticals and permitting more accurate targeting with a controlled release. So in this review we have included information regarding the trends of nanomedicine in drug delivery system.

**Keywords:** nanomedicine, nanotechnology, nano-delivery system, encapsulating

**PE 1.0/ NC 031****A REVIEW ON LOTUS SEED (*Nelumbo nucifera*)**

\*Prodipto Roy, Sayan Sarkar, Chandrika Sharma, Dr. Jyochhana Priya Mohanty  
Department of Pharmacognosy, Himalayan Pharmacy Institute, Majhitar, Sikkim, 737136

**Abstract:**

Lotus seeds, also known as *Nelumbo nucifera*, are edible and been used as a traditional medicine to treat a variety of illnesses. Lotus seeds are exceptional in their lifespan. Hepatoprotective, hypo-glycemic, immunomodulatory, anti-analgesic, anti-perkinsonian, antifertility, anti-dermatophytic, and psychopharmacological qualities were discovered through research. It can be used as a cheap supplement for protein and energy. Commercial dried lotus seeds come in two varieties: brown peel and white peel. White lotus seeds are deshelled and de-membraned. Brown peel lotus seeds are brown because the ripened seed has adhered to its membrane. This review aims to summarise all the information that is currently known about *Nelumbo nucifera* seeds, including its traditional usage, chemical composition, physical and chemical properties, phytoconstituents, and a variety of physiological, psychological, and therapeutic effects. To cure a variety of illnesses such tissue inflammation, cancer, diuretics, skin problems, and as a poison antidote, seeds are used as the primary ingredient in Ayurvedic and folk medicines. The mature Lotus seeds green germ, also known as fang, Lien Tze Hsin, and Lian xu, is rich in substances including alkaloids (demethylcolaurine, isoliensinine, liensinine, Lotusine, methylocrypalline, neferine, nuciferine, and pronuciferine), flavonoids (galuteolin, hyperine, rutin), and some microelements [Zn, Fe, Ca and Mg]. Lotus seeds have been found in studies to be a promising source of biofuel. Large-scale lotus farming, seed processing, and storage of seeds should all be prioritised in order for the general populace to consume lotus seeds as a cheap source of nutrient-rich food and as a cheap source of medication for the treatment of illnesses.

**Keywords:** Traditional medicine, Immunomodulatory, Anti perkinsonian, Psychopharmacological

**PE 1.0/ NC 032****UNRAVELLING THE BINDING MECHANISM OF PHENYL ISOTHIOCYANATE WITH LYSOZYME: SPECTROSCOPIC AND COMPUTATIONAL APPROACH****\*Irfan Hussain and Mohammad Tabish**

Department of Biochemistry, Faculty of Life Sciences, A.M.U, Aligarh

**Abstract:**

Phenyl isothiocyanate (PT) is a phytochemical present in mustard family. PT and its substituents are found to be protective against various carcinogenesis and also antimicrobial against several bacteria in vitro. Lysozyme (Lyz) is a small monomeric globular protein having many physiological and pharmaceutical functions like antimicrobial, antiviral, anti-inflammatory, anticancerous and antineoplastic. It also serves as a transport protein for many small molecules like hormones, fatty acids, metal ions, medicinal drugs etc. Protein-ligand binding studies are of great significance in unraveling the mechanism of their binding. Interaction studies of PT with lysozyme (Lyz) were performed using multi-spectroscopic and in silico approaches. UV absorption and steady-state fluorescence spectroscopy confirmed the formation of Lyz- PT complex with a binding constant in the order of  $10^3 \text{ M}^{-1}$ . The different temperature-based fluorescence experiments supported the static mode of fluorescence quenching during the binding process. The synchronous fluorescence experiment revealed the microenvironmental changes in Lyz. The changes in Lyz conformation upon binding with PT were confirmed by circular dichroism and 3D fluorescence studies. Molecular docking analysis corroborated the results of in vitro experiments.

**Keywords:** Lysozyme, Phenyl isothiocyanate, Antibacterial, Spectroscopy, Docking**PE 1.0/ NC 033****PHYTOCHEMISTRY AND PHARMACOLOGICAL ACTIVITIES OF ANNONA SQUAMOSA: REVIEW****Jagriti Mishra, Sandeep Prasad Tiwari, Rajni Yadav**  
Kalinga University, Faculty of Pharmacy, Naya Raipur**Abstract:**

This review covers the pharmacological properties of different parts of *Annona squamosa* and biologically active constituents responsible for treatment potentials. A considerable attention to the benefits of biologically active chemicals could attribute to the development of potent drugs to certain pathologies. In various indigenous and traditional sources of medicine plants have been extensively used for Treatments. Various parts of plants such as the leaves, fruits, the barks, roots and even the seeds are being used for preparation of medicine. The leaves of the plants have been used as insecticide, anthelmintic, and styptic, externally used as suppurant. Unripe and dried Fruit work as antidiarrheal. Bark is used as powerful astringent, antidiarrheal and vermifuge.

**Keywords:** - Cultivation, treatment, production, anti-cancer, medicinal properties.



**PE 1.0/ NC 034****SYNTHESIS OF SILVER NANOPARTICLES BY GREEN METHOD USED IN TRIDAX PROCUMBENS LEAF EXTRACT AND THEIR CHARACTERIZATION**

Milind C. Nagare

PG Dept. of Chemistry, MSG College Malegaon Camp Dist. Nashik

**Abstract**

Plant-mediated synthesis of nanomaterials has been increasingly gaining popularity due to its eco-friendly nature and cost-effectiveness. In the present study, we synthesized silver (Ag) nanoparticles using aqueous extracts of fresh leaves tridax procumbens and medicinal plants as bio reducing agents. This method allowed the synthesis of nanoparticles, which was confirmed by ultraviolet-visible (UV-Vis) spectrophotometry and transmission electron microscopy (TEM). UV-Vis spectra and visual observation showed that the color of the fresh leaf extracts of tridax procumbens turned into grayish brown and brownish yellow, respectively, after treatment with Ag precursors. In addition, TEM analysis confirmed that AgNO<sub>3</sub> solutions for all concentrations produced Ag nanoparticles and their average size was less than 24 nm. Moreover, aqueous leaf extracts of tridax procumbens were separately tested for their antimicrobial activity.

**Keywords-** Nanomaterial, Tridax procumbens extract, Silver nitrate, Spectroscopy**PE 1.0/ NC 035****ASSESSMENT OF ANTIDIABETIC POTENTIAL OF NEROLIDOL ON ALLOXAN INDUCED DIABETIC RATS**Pavan B. Udavant<sup>\*1</sup>, MusabTanzeel R.Ahmed<sup>2</sup>, Gayatri N.Kanade<sup>2</sup>, Naveed R.Ahmad<sup>2</sup>,  
Simona D'Souza<sup>2</sup><sup>1\*</sup> Associate Professor, Department of Pharmacology, MET's Institute of Pharmacy, Bhujbal Knowledge City, Adgaon, Nashik, Maharashtra, India 422003.<sup>2</sup> Research Fellow, Department of Pharmacology, MET's Institute of Pharmacy, Bhujbal Knowledge City, Adgaon, Nashik, Maharashtra, India 422003.**Abstract**

Diabetes is one of the most important health issues of the 21st century, with 8.8% of the adult population affected. India has earned the title of 'Diabetes Capital of the World' due to its 20% share of the worldwide diabetes burden. Accordingly, diabetic animal models serve as a crucial research tool that enables us to avoid pointless and morally dubious human subject investigations while also obtaining a thorough scientific insight of the condition. Nerolidol (NRD), from *Ferula Fukanensis*, is a plant-based strong antioxidant. NRD's antioxidant properties may help in protection of the cells from oxidative damage to lipids, proteins, and DNA. The main objective of the current experiment is to assess NRD's antidiabetic capability against alloxan-induced diabetes mellitus. For this purpose, the study was designed & conducted into six groups, from Group I to VI. Each group was of six animals. Alloxan (120 mg/kg i.p) was given to all groups, except the control group (Group I), in order to induce diabetes. Only distilled water was given to the control

(group I) orally, while the Standard Group (Group III) received Glibenclamide (2.5 mg/kg i.p). Similarly Nerolidol 100 mg/kg, 200 mg/kg and 300 mg/kg were administered to the test groups of IV, V, and VI respectively through the i.p route after 72 hrs of alloxan administration for 14 days. Disease control (Group II) left untreated. NRD's antioxidant characteristics, which protect from pancreatic damage, may be the mechanism of action. Treatment with NRD drastically lowered fasting blood sugar levels in diabetic rats & can be used for the treatment of diabetes and other oxidative stress-related diseases.

**Keywords:** Alloxan Monohydrate, Biomarkers, Blood Glucose Level, Diabetes, Nerolidol, OGTT

### PE 1.0/ NC 036

## NATURAL PRODUCTS FOR DRUG DISCOVERY: INNOVATIONS FOR NOVEL DRUG DISCOVERY

Sweta Rai<sup>1</sup>, Prashant Kumar<sup>2</sup>, Prakash Chandra Gupta<sup>1\*</sup>

Email:Swetarai1988@gmail.com

<sup>1</sup>School of Pharmaceutical Sciences, Chhatrapati Shahu Ji Maharaj University, Kanpur

<sup>2</sup>Department of Bioinformatics, Kalinga University, Raipur, Chhattisgarh

### Abstract

Since the beginning of time, people have understood the healing advantages of plants. Plant based medicines have been used to treat a wide range of medical disorders. These medications are taken as concentrated plant extracts or mixtures without separating the active ingredients. In modern medicine, it is required to isolate and purify one or two active molecules. However, there are several global health problems for which no effective medicines are available today, including diabetes, HIV/AIDS, cancer, and degenerative disorders. The chemical has frequently lost its 'active compound' making it ineffective. Evaluating various aspects of natural and artificial drugs is required to choose the best treatment options, including pharmacokinetics, effectiveness, and safety. Automation is now a part of drug research thanks to the development of cutting-edge technologies like artificial intelligence, 'organs-on-chip' and microfluidics that improve drug design ideas. This has sped up drug discovery and the assessment of candidate compounds's safety, pharmacokinetics, and efficacy while enabling fresh approaches to drug design and manufacturing based on natural molecules. These have created new opportunities for processing complicated natural products and using their structures to create novel medications. Indeed, computational molecular design as it relates to natural products is in its infancy. The identification of molecular targets for natural compounds and their derivatives has been made possible in part by predictive computational software. In the future, a few false positive leads in drug development will result from the use of quantum computing, computer software, and databases in modelling molecular interactions and forecasting features and parameters required for drug development, such as pharmacokinetics and pharmacodynamics. This article examines the development of drugs from plant-based natural products and the role that cutting-edge technology plays in discovering new drugs.

**Keywords:** Natural products, Drug design, Innovation, Computational software, Precision medicine, Omics, Global health

**PE 1.0/ NC 037****ARTIFICIAL INTELLIGENCE IN PHARMACEUTICAL INDUSTRIES**

Sunil Sahu

Faculty of Pharmacy, Kalinga University, Naya Raipur)

**Abstract:**

Artificial intelligence is branch of Computer Science, which has percolated to all the arenas of science and technology, from modern engineering to modern Medicine/Biotechnology. Artificial Intelligence (AI) is like a simulation of human brain Behavior in Programmed form in the Computer/Machine, in such way they are programmed to think like Humans brain, like a Logical thinking .In the mid-1950s, Mc Carthy coined the term “Artificial Intelligence”. According to McCarthy AI is “The science and engineering of making intelligent machines” Artificial intelligence is being used in Pharmaceutical industries to drugs discovery, drugs trials, drug’s data managements, drugs formulation, improved design techniques in pharmaceutical industries, to discover unknown chemical molecules for drugs designing. Artificial intelligence is able to design the new drugs formulas. Using AI to make sense of clinical data and to produce better analysis, faster clinical trials to the patients. In manufacturing process Automated machines are used in manufacturing the drug, but in the most of cases it is processed manually by man power which can be act as source of error and leads to contaminate the drugs/final product.AI can be used to avoid such kind of error in manufacturing process by designing/Programming the AI to act as intermediate between manufacturing process and final product. Artificial intelligence can be use as error/Impurity free process in manufacturing process in pharmaceutical industries. By Introducing automated machine and robots in pharmacies Shops to file the prescriptions, to dispense the medicines to patients, marketing, logistics and supply chain. Many AI based software are used in pharmaceutical industries to manage the data of known chemical molecules or discovered compound & data of drugs discovery, data analysis, Pre-clinical Trials and many mores. Many sophisticated instruments are there in pharmaceutical industries which are used in drug formulation or making process, some instruments are lit with AI technologies. Artificial Intelligence can also reduce the production costs and discover or create the new drugs molecules, to deliver effective treatments to particular disease in Targeted Parts and helps us to save the lives of patients. Right now, many biotechnology companies are also started to adopt these technologies of Artificial intelligence in the fields of Genetics, genome research and Developments of the New Drugs Formulation.

Keywords: Artificial intelligence, Drugs design, Pharmaceutical industries, Drug Discovery, Genetics, Biotechnology, Clinical Trials, Genome.

**PE 1.0/ NC 038****A BRIEF REVIEW OF MEDICINAL PROPERTIES OF *ADHATODA VASICA*  
(*JUSTICIA ADHATODA*)**

Shalini Nanda\*, Rajni Yadav, Sandip Prasad Tiwari

Faculty of Pharmacy, Kalinga University, Naya Raipur, Chhattisgarh, India.

**Abstract**

Day by day various diseases are occurring worldwide. In this, we have mentioned the geographical region as we found that this plant grows all over the world we have focused on the lesser Himalayas and Nepal. For the curing of these diseases, we go for medicinal herbs that contain various physiochemical properties. So it is necessary to demonstrate plants and their active compounds. *Adhatoda vasica* is a well-known medicinal plant. So we have collected the data from Google scholar to focus on their chemical constituents, pharmacological properties, and their advantages. According to various sources, we come to know about pharmacological activities i.e anti-bacterial, anti-microbial, anti-tussive, anti-diabetics, anti-tuberculosis, etc. A very important chemical is present vasicine, vasicinone they are used to expel sputum from the body. Kan Jang® oral solution (KJ) used to treat URIS This plant *Adhatoda vasica* also contains food values like Na, Ca, and Mg. it is also used in a pandemic novel coronavirus (COVID-19). therefore it is a very useful herb for providing a novel drug against various diseases.

**Keywords:** *Adhatoda vasica*, Anti-Tussive, food value, Geographical region, Kan Jang®, anti-diabetics, vasicine, vasicinone, (COVID-19).

**PE 1.0/ NC 039****AN OVERVIEW ON HERBAL PLANTS USED FOR ANTI AGEING EFFECT**

Rahul Kumar Jain\*, Rajni Yadav, Dr. Sandeep Prasad Tiwari

Faculty of Pharmacy, Kalinga University, Naya Raipur.

**Abstract**

Nowadays the pharmaceutical sciences have led to huge and creative evaluation in the field of medicines and cosmetics. Various types of formulation like face packs, creams, lotion etc are used for multiple purposes like altering appearance, creating a glowing effect and also for anti-ageing effect. In the recent times, many pharmaceutical industries are creating this substance by using both i.e, natural substances and also artificial synthesis substances in higher rate but more inclined towards producing with natural and ayurvedic substances or in simple terms with herbal medication because the demand of herbal cosmetic is growing in an alarming rate. Many natural substances and herbs which are widely available are used in different concentration and for different purposes like sandal wood, turmeric, aloe vera, nutmeg, tulsi, mushroom, papaya. Anti-ageing is nowadays one of the biggest effects that every industry is targeting or focusing to achieve. Ageing is nowadays one of the biggest issues faced by specially women all over the world and its onset is around when they reach the age over 40. The need for creating substances with anti-ageing effects is because the life style nowadays people are maintaining is not good for them which can lead to earlier health issues like denaturation of collagen which helps in maintaining the elasticity property of the skin and the need for going to create with natural substances is because they have got least side effects and almost no toxicological effects. There are various types of pre-formulation consideration and different evaluation parameters for

creating this medication or preparation. In this article, the readers will get to know about all the information which could be helpful to them and would create a sense of knowledge inside them. In this current review the authors have focused on different causes leading to ageing affects as well as various herbal drugs giving potential activity as an anti-ageing drug.

**Keywords:** Anti-ageing, herbal preparation, cosmetic preparation, pharmaceutical.

### PE 1.0/ NC 040

## IMMUNOTHERAPEUTIC STRATEGIES AGAINST PATHOGENS.

Haliru Usman

Faculty of Pharmacy, Kalinga University, Naya Raipur.

### Abstract

Immunotherapeutic Strategies against Pathogens. Immunotherapy is a type of cancer treatment. It uses substances made by the body or in a laboratory to boost the immune system and help the body find and destroy cancer cells. What are immunotherapeutic Strategies against Pathogens? How does immunotherapy work against cancer? The dominant explanation for this trend is increased by the increase in new research methods, Immunotherapy is used to upregulate or downregulate the immune system to achieve a therapeutic effect in immunological mediated disorders, including immunodeficiencies, hypersensitivity reactions, autoimmune diseases, tissue and organ transplantations, malignancies, inflammatory disorders, infectious diseases, and any other disease, where immunotherapy can improve the quality and life expectancy. I use data from different aspects and pathways in my research to explore therapeutic methods and personal skills that help to prevent people against cancer before reaching the Doctor's. Contrary to what has often been assumed, Almost 40 percent of men and women will be diagnosed with cancer during their lifetime. Thankfully, in this day of medical advancements and innovation, cancer is no longer a certain death sentence. More than 15.5 million people lived beyond a cancer diagnosis as of Jan. 1, 2016, and that number is expected to surpass 20 million by 2026. The goal in cancer treatment now is to target care more precisely to patients through individualized health care. This is called precision medicine, and it is an especially welcome change for cancer patients who traditionally have been exposed to treatment such as chemotherapy and radiation that attacks their cancer but often damages healthy tissue in the process.

**Keywords:** Anti Pathogen agents, self-medication; Student, Attitude of Health Personal, Health Occupation.

**PE 1.0/ NC 041****AN OVERVIEW ON THERAPEUTIC ROLE OF COMBINATION OF PROBIOTICS IN TREATING PEPTIC ULCER**

Mona Motallebi, Surya Narayan Das, Lisa Nayak, Santoshi Gope, Smitarashmi Sinha,  
Yennana Jaya Vijaya  
Gayatri College of Pharmacy, Sambalpur

**Abstract:**

Peptic ulcer is a chronic gastrointestinal disorder characterised by localised erosion in the stomach lining those results in to abdominal pain, hyper acidity, bleeding, nausea, bloating or diarrhoea. The most common cause of peptic ulcer is infection due to Helicobacter pylori or prolonged use of Non-Steroidal Anti-Inflammatory (NSAID) drugs. This review aims to provide an overview on the combination of different strands of Lactic Acid Bacteria (LAB) and bifidobacteria involving mechanisms that protects the gastric mucosal layer, helps in upregulation of prostaglandin for improving stomach lining, anti-inflammatory property of probiotics in peptic ulcer caused due to pro-inflammatory cytokines.

**Keywords:** Peptic ulcer, lactobacillus, NSAID, TNF- $\alpha$

**PE 1.0/ NC 042****KITCHEN SPICES USED IN COVID-19 PANDEMIC**

Sanchita Sahoo, Simran Rajput, Monalisa Biswal, Kruti rekha Kar, Mousumi Besan\*, Surya  
Narayan Das  
Gayatri college of pharmacy Sambalpur

**Abstract:**

A Severe acute respiratory syndrome is an unusual type of contagious pneumonia that is caused by SARS coronavirus. In 2019, the whole world was trying to combat this coronavirus disease. Scientist and Pharma industries were putting rigorous efforts to develop vaccines against that virus. However, there were only a few specific medical treatments available for SARS Cov-2. Apart from other public health measures taken to prevent this virus; we can boost our immunity with natural products like Clove, ginger, cinnamon, turmeric, black pepper against corona virus. In this article, we have highlighted the uses of common spices found in kitchen as anti-bacterial, anti-viral and immunity boosters. According to a questionnaire based on online survey during Covid - 19 among a wide range of peoples (n- 531) of different age groups (13-68 year) various countries , it was concluded that 71.8% of people were benefitted by taking kadha for combating infection and boosting immunity and that kadha is being prepared from decoction of clove, ginger, cinnamon, turmeric, black pepper .Total 93.6% of people thought that spices were helpful in curing corona virus or other viral infection as well as boosting immunity. Therefore we conclude from the survey and available literature that kitchen spices plays a significant role against viral infections.

**Keyword:** Antiviral, Coronavirus Immunity booster, spices, SARS-COV-2, antibacterial

**PE 1.0/ NC 043****A REVIEW ON THE EFFECT OF COMBINATION DRUG THERAPY IN INTERLEUKIN MEDIATED ASTHMA.**

Mona Motallebi, Surya Narayan Das, Padmaja Boxy, Sarbani Roy  
Gayatri College of Pharmacy, Sambalpur

**Abstract:**

Asthma is a respiratory disorder characterised by hyper-responsiveness to a variety of stimuli, causing narrowing of air tubes accompanied by increased mucus production in the airways due to production of interleukin especially IL-4, IL-5, IL-13, IL-25 and immunoglobulin E causing allergic response. It is followed by symptoms such as cough and wheezing. The aim of this review is to document the role that combination drug therapy plays in treating asthma and preventing frequent attacks. This review focuses on the effect of combination of anti- cholinergic and beta agonist drugs used to reduce inflammation and mucus production in the airways. The inflammatory mediators play a critical role in narrowing of airways. This paper also tells an overview of effect of various interleukins resulting inflammation causing asthma condition.

**Keywords:** Asthma, anti-cholinergic, beta agonist, Interleukin (IL), IL-4, IL-5, IL-6, IL- 13, IgE

**PE 1.0/ NC 044****TYPE-IV HYPERSENSITIVITY REACTION A POTENT CAUSE OF INFLAMMATORY BOWEL DISEASE: A REVIEW**

Mona Motallebi<sup>1</sup>, Bipin Bihari Panda<sup>1</sup>, Durga Madhab Kar<sup>2</sup>  
<sup>1</sup>Gayatri College of Pharmacy, Sambalpur  
<sup>2</sup>Siksha 'O' Anusandhan University

**Abstract:**

Inflammatory bowel disease (IBD) is an auto immune disorder resulting into chronic inflammation causing abdominal pain, diarrhea, indigestion, rectal bleeding, and weight loss. Although the etiology of IBD is unknown, but persistent intestinal inflammation is seen in patients suffering from IBD. The two sub types of IBD are ulcerative colitis and Chron's disease. The immune responses are the main cause for secretion of harmful cytokines that deplete the epithelium layer of the gastrointestinal tract leading to severe inflammation condition. Interleukin-22 and excessive interleukin-17 production is involved in the progression of IBD. Type IV hypersensitivity is an overreaction of T- cells to an antigen. When an antigen is detected by memory T-cells, it provokes clonal expansion of the T-cell, and large numbers of cytotoxic T-cells are released to eliminate the antigen. Usually this system is controlled and the T-cell response is appropriate. If not, the actively aggressive cytotoxic T-cells damage normal tissues. This review gives an overview on the functional role of T-cells that also regulate IL-22 which is associated with Inflammatory Bowel Disease (IBD) susceptible genes that regulate inflammatory mediators in tissues.

**Keywords:** IBD, Ulcerative colitis, Interleukin (IL)-22, IL-17, T-cells, immune responses

**PE 1.0/ NC 045****A COMPARISON STUDY BETWEEN ORLISTAT AND MORINGA OLEIFERA AS APPETITE SUPPRESSANT IN CASE OF OBESE PATIENTS**

Preetesh Kumar Panda, Soumya Kanta Mishra, Mona Motallebi  
Gayatri College of Pharmacy, Sambalpur

**Abstract:**

Obesity is a disease in which excess accumulation of fat occurs in the adipose tissues of the body. Obesity is the main cause of many diseases such as type- 2 diabetes, cardiovascular diseases, and mental health disorders such as depression. In recent studies, Moringa oleifera have been found to have antilipidemic activity by reducing the levels of total cholesterol, triglycerides and low density lipoprotein. This review compares the therapeutic effect of herbal drug to orlistat, a lipase inhibitor. The mechanism of action of Orlistat is to prevent the intestinal absorption of fat present in food resulting into excretion of the unabsorbed fat from the body in the stool.

**Keywords:** Obesity, appetite suppressant, M. oleifera leaves, lipid profile, anti-obesity

**PE 1.0/ NC 046****SYZYGIUM CUMINI A WONDER PLANT USED IN THE TREATMENT OF VARIOUS AILMENTS**

Aditi Das, Alibha Naik, Archana Guria, Mousumi Besan, Surya Narayan Das  
Gayatri College of Pharmacy, Jamadaripali, Sambalpur

**Abstract**

Nature itself, is the best medicine prescription for our whole being. The use of medicinal plants developed from informal experimentation over, many generations and was handed down orally from person to person in traditional culture. Jamun (Biological name: *Syzygium cumini*, Family:- Myrtaceae) is a popular indigenous fruits of India. It has got very valuable place in ayurvedic medicines. Jamun production in India is unorganised and scattered one and there is huge loss of this fruit every year. It is believed to be a boon for diabetic patients. Jamun fruits and seeds is universally accepted to be very good for medicinal purposes especially for curing diabetes (anti diabetic) because of it's effect on pancreas. The leaves of the tree are useful for teeth and gum disease. The bark of the tree prevents gingivitis (gum inflammation). The preclinical studies have also shown it to possess chemopreventive, radioprotective, and anti-neoplastic properties. It is a very good source of carotene, iron folic acid, calcium, potassium, magnesium, phosphorus, sodium, glycoside, ellagic acid. The jamun is propagated both by seed and vegetative methods. Jamun requires dry weather at the time of lowering and fruit setting. There are some indications that this neglected fruit may be processed into various products for its gainful utilization by poor rural masses and health prone metro population.

**Keywords:** Chemo-preventive, radioactive, anti-neoplastic, anti-diabetic



**PE 1.0/ NC 047****UV SPECTROPHOTOMETRIC METHOD FOR SIMULTANEOUS ESTIMATION OF EBASTINE AND MONTELUKAST IN PHARMACEUTICAL DOSAGE FORMS**

Soumya Ranjan Das, Pratik Dash\*, Dr. Mousami Besan  
Gayatri College of Pharmacy, Jamadarpali, Sambalpur, Odisha

**Abstract**

Ebastine, a piperidine derivative, is a long-acting, nonsedating, second-generation histamine receptor antagonist that binds preferentially to peripheral H1 receptors and it has antihistaminic, anti-allergic activity. Also, Montelukast is an orally active compound that binds with high affinity and selectivity to the CysLT1, receptor and used in long-term treatment of asthma. In the present work, a simple, sensitive and accurate spectrophotometric method has been developed for estimation of Ebastine and Montelukast in pharmaceutical dosage forms. An absorption maximum was found to be at 252 nm for Ebastine and 344.0 nm for Montelukast respectively with the solvent system of methanol: water. The drugs follow Beer's law limits in the range of 5- 25 µg/ml with correlation coefficient of 0.998 and 0.999. Results of the analysis were validated for accuracy, precision, linearity and were found to be satisfactory. The proposed method is simple, rapid and suitable for the routine quality control analysis.

**Keywords:** Ebastine, Montelukast, Tablets, UV spectrophotometry, Sedatives, Histamines

**PE 1.0/ NC 048****FRUIT SUGAR (FRUCTOSE) A PRINCIPAL DRIVER FOR REVERSING TYPE-2-DIABETES**

Ashish Sharma, Shubhansu Sekhar Saraf, Dillip Kumar Mohapatra<sup>#1</sup>, Mausumi Besan<sup>#2</sup>,  
Surya Narayan Das<sup>#3</sup>  
Gayatri College of Pharmacy, Sambalpur, Odisha

**ABSTRACT:**

Effects of fructose on long-term glucose metabolism (glycosylated haemoglobin) in type 2 diabetes more insulin is needed than the pancreas can produce. Therefore, foods that need lower secretion of insulin, i.e. foods that have a lower glycemic index, are known to be beneficial for glucose metabolism. The aim of this research study is to elucidate the role of fructose metabolism in type 2 diabetes and other metabolic diseases. The objective of this study was to review to show some evidence that the short term replacement of other carbohydrate sources in the diabetic diet with fructose is known to improve short-term glycemic control, but there is also evidence of more prolonged improvement in glucose metabolism. We searched the e- Library; a literature search was performed as appropriate for narrative reviews, including electronic databases of PubMed, EMBASE, and Google Scholar MEDLINE, and clinicaltrials.gov databases with no time or language restrictions. The date of the last search was 26 April 2022. Most people think of fructose as a natural fruit sugar. After all, it's one of the main sugars (along with glucose and sucrose) in fruits. In fact, the amount of fructose in most fruits is relatively small, compared with other sources. Fruit also contains a host of great nutrients, including fiber,

which slows the absorption of sugars. The fructose found in processed foods, however, is another story. Between 1980 and 2000, Americans decreased their intake of sucrose (table sugar), but the amount of fructose consumption more than tripled. The reason for this was that food makers replaced sucrose (table sugar) with high-fructose corn syrup (HFCS) to sweeten foods and beverages. Also, people with diabetes were told that because fructose doesn't raise blood glucose levels, it was a good alternative to sugar. Therefore, they began using fructose-rich agave nectar under the mistaken assumption that it posed no diabetes-related risk. Therefore, the available studies show some evidence that the replacement of other carbohydrate sources in the diabetic diet with fructose may improve the prolonged glycaemic control, although more research is needed to reach more precise conclusions.

**Keywords:** Glycosylated haemoglobin, Glycemic index, HFCS, DNL(De Novo Lipogenesis)

### PE 1.0/ NC 049

## ANTIMICROBIAL POTENCY OF EXTRACTS OF CLITORIA TERNATEA

Mousumi Besan<sup>1\*</sup>, Manoj K. Gautam<sup>2</sup>, Surya Narayan Das<sup>1</sup>

<sup>1</sup>Gayatri College of Pharmacy, Sambalpur, Odisha, India.

<sup>2</sup>University Institute of Pharmaceutical Sciences, Panjab University, Chandigarh, 160014, India.

### Abstract:

*Clitoria ternatea* L. (CT), belongs to family Fabaceae is a very well-known Ayurvedic medicine used for different ailments, which has been investigated scientifically in considerable detail. CT is commonly called butterfly pea or conch flower or shankapushpi and in Indian traditional medicine is known as Aparajit (Hindi). Butterfly pea flowers are rich in anthocyanin compounds called ternatins, which give the plant its vibrant hue. Test-tube studies suggest that ternatins can alleviate inflammation and may prevent cancer cell growth additionally; the plant contains several other antioxidants, including Kaempferol. Some research suggests that p-coumaric acid could have anti-inflammatory, antimicrobial, and antiviral effects, which may help protect against disease. The preliminary phytochemical screening study revealed that the leaf of *C. ternatea* contains moderate level of tannin, cardiac glycosides and steroids and mild level of alkaloids. There were no phytochemicals noted in the stem. Both the flowers and seeds of *C. ternatea* contain phlobatannin, flavonoid, and terpenoid at moderate levels. In addition, the seeds contain moderate presence of alkaloid and mild presence of volatile oil. The roots contain small amount of flavonoid, volatile oil and terpenoid. We found that phytochemical evaluation of the ethanolic extract of *C. ternatea* showed a considerably high content of phenols (102.37 mg GAE/g<sub>280nm</sub> and 28.8 mg GAE/g<sub>750nm</sub>), flavonoids (35.73 mg QE/g), and anthocyanins (2.88 mg ME/g and 2.72 mg CE/g) when measured using standard methods. The extracts were tested against Gram-positive bacteria included *Bacillus cereus*, *Bacillus subtilis*, *Bacillus thuringiensis*, *Staphylococcus aureus*, *Streptococcus faecalis*; Gram-negative bacteria included *Escherichia coli* and *Klebsiella pneumonia*.

**Keywords:** Antimicrobial, Butterfly pea, Anthocyanins, Flavonoids, Ethanolic extracts

**PE 1.0/ NC 050****CUBOSOMES: A POTENTIAL CARRIER FOR DRUG DELIVERY**

Soumya Kanta Mishra, Dr. Subhendu S. Mishra  
Gayatri College of Pharmacy, Gayatri Vihar, Sambalpur, Odisha.

**Abstract:**

Cubosomes are the square and round shaped particles with having internal visible cubic lattices. Cubosomes are submicron, nanoshapes particle of bicontinuous cubic liquid crystalline stages. Cubosomes are thermodynamically stable and their structure similar to the “honeycomb” through bicontinuous domains of water and lipid. Innerside of the surfactant cubosomes assembled into bilayers and wrapped into a three dimensional, periodic and minimal surface, forming a strongly packed structure. Cubosomes shows different internal cubic structure and construct with maximum drug loading technique. Due to its high internal surface area and cubic crystalline structure satisfactory formulation process, encapsulating hydrophobic, hydrophilic and amphiphilic substances, targeting and sustained release of bioactive agents. Cubosomes retain their stability even at high dilution which is not possible with other liquid crystalline systems because they transform into micelles. Thus, being incorporated into formulations easily. Cubosomes are biocompatible drug delivery system and it is a novel approach. Cubosomes have become an attractive vehicle for in-vivo drug delivery due to their low cost, versatility, and potential for controlled release and functionalization. Cubosomes are also used in various areas like drug release, melanoma therapy, vaccine delivery, protein delivery and cosmetology. The cubosomes are proposed for a novel carrier for drug delivery system. Their unique solubilizing, encapsulating, transporting and protecting functionality make them an appealing for in-vivo drug delivery.

**Keywords:** Cubosomes, hydrophobic, amphiphilic, controlled release, drug delivery system.

**PE 1.0/ NC 051****3D PRINTING**

Ashley Christeena Thomas  
Faculty of Pharmacy, Kalinga University, Naya Raipur.

**Abstract:**

With the increase in the number of health issues there have been an increase in the demand of medical and pharmaceutical devices for increasing the recovery rate. One of them is the 3d printing, the most revolutionary and the most powerful tool serving the countries for developing several dosage forms, tissue engineering and disease modelling. Its current achievement include personalised dosage form implant and phantoms receptive to the anatomy of peasant on the basis of sell-based material for regeneration of medicine. The main benefit of 3d printing is the medicines can be produced in small batches with tailored dosage, specific shape and sizes and releases the exact characteristics hence giving a reality check on the concept of personalised medicines

**Keyword-** 3d printing, manufacturing medical devices pharmaceuticals

**PE 1.0/ NC 052****EMULGELS**

Swati Mahakul

Faculty of Pharmacy, Kalinga University New Raipur

**Abstract:**

In this growing and developing Era of pharmaceutical industries and drug discoveries, topical form of drug delivery is found to be one of the most convenient and easiest way to dispense drugs for the treatment of localized infections. Various types of dosage forms are introduced under topical medications, such as ointments, creams, gels etc. One of the emerging dosage form under topical medications is the Emulgel. The formulation of emulgel possess many promising factors such as they are easily spreadable, can be removed easily, free of stains and they even have a longer shelf life. The most captivating characteristic of emulgel is that it causes lesser amount or nearly negligible amount of side effects which makes it perfectly fit for dermatological medications. Consistency of emulgel is light and transparent. Formulation of emulgels varies according to the requirements of the scientist using various active pharmaceutical ingredients but most of them are hydrophobic in nature. Regarding the above information and data found it can be concluded that emulgels have been showing excellent results in various aspects like the rate of penetration of drug into the skin, therapeutic response of the drug and appearance as well.

Keywords: Emulgels, Dermatology, Skin problems, Topical delivery

**PE 1.0/ NC 053****IMMUNOLOGY ANTIGEN PROCESSING AND PRESENTATION**

Sanskriti Pandey, Khusboo Gupta

Faculty of Pharmacy, Kalinga University

**Abstract:**

Antigen presentation is a process where the antigens get prepared to present themselves to special types of cells called T lymphocytes. Before antigens are presented, they must be processed from proteins into antigenic peptides. Due to the fact that T cells can only recognize antigens or peptide fragments displayed on the surface of the cells with the help of Antigenpresenting cells (APCs), antigen processing and presentation aids them in recognition and forming adaptive immune responses. Major Histocompatibility Complex (MHC) molecules deliver the antigens to the surface of APCs. The different classes of MHC includes MHC class I and MHC class II. The T Cells use antigen-specific T cell Receptors TCR, recognizing only specific antigens when they are present with a specific MHC molecule, the action called as MHC Restriction. Like TCR, one more molecule required for antigen recognition is known as co-receptor, which is either a CD4 molecule that is present on the T helper cells or CD8 molecule that is present on cytotoxic T cells.

Keywords: CD4 cells, Antigen presenting cell, Histocompatibility complex, T helper cells

**PE 1.0/ NC 054****REVIEW ON RECENT ADVANCEMENT IN TREATMENT AND DIAGNOSIS OF ATTENTION DEFICT HYPERACTIVITY DISORDER (ADHD)**

Saloni Saw\*, Sudeep Mandal, Dr. Sandip Prasad Tiwari  
Faculty of Pharmacy, Kalinga University, Naya Raipur

**Abstract**

ADHD is a common neurodevelopmental disease that is frequently accompanied by various psychiatric comorbidities, functional limitations, and adverse long-term results. This chosen review's goal is to explain recent developments and difficulties in the identification and management of ADHD. The condition has neurological roots and is quite varied in terms of symptom patterns, cognitive deficits, and neurobiological and hereditary characteristics. Short-term pharmacological treatments have been shown to be effective and safe across the life cycle, but more study is required to examine long-term treatment, the effects of medication on preschoolers, and non-pharmacological interventions. Future studies are required to combine clinical and neurobiological data, examine understudied populations, and create innovative therapies in order to better understand the neurodevelopmental processes of the condition. This article focused on the prevalence of the disease and the reason in growth of the prevalence rate across the globe. The data were compiled from various articles from SCI and SCOPUS indexed journals.

**Keywords:** ADHD, Hyperactivity, Impulsivity, Neurotransmitter, Serotonin, Dopamine

**PE 1.0/ NC 055****REVIEW ON MONKEYPOX VIRUS AND THEIR IMPACT ON HUMAN HEALTH**

\*Prince Kumar Jha<sup>a</sup>, Pranjul Shrivastava, Saurabh Sharma, Dr. Sandip Prasad Tiwari  
Faculty of Pharmacy, Kalinga University, Naya Raipur.

**Abstract**

Emerging and re-emerging infections continue to be the leading cause of death and suffering among human and animal populations, having a significant impact on the global economy, despite extraordinary and exceptional advances in the development of drugs and vaccines, cutting-edge diagnostic facilities in health care settings, and strategies in disease prevention and control. Through international travel and the movement of animals from endemic areas to susceptible people, the viral disease monkey pox has the potential to spread throughout the world. A zoonotic illness called monkey pox that is likely acquired through breathing resembles smallpox clinically but differs from it physiologically and epidemiologically. Of all these differences, the most crucial one is that human-to-human transmission is quite rare. Experimental monkey pox infections have shown infectivity and pathology after infection by aerosol, intranasal inoculations, or parenteral administration in a variety of species of animals, including nonhuman primates. Numerous diseases and other illnesses can resemble human monkey pox by causing papulovesicular and vesiculopustular eruptions. Renovating hospital facilities is necessary, as is preparing for potential outbreaks, especially in developing nations with subpar healthcare delivery systems. Before the virus spreads further, scientists and researchers should

concentrate on creating vaccines, treatments, and preventative measures. Article focused on various symptoms, causes, epidemiology and treatment approaches that could help in exploring the approach in handling of the disease condition.

**Keyword:** Monkey pox, Covid, Health care, Immunity, Vesiculopustular eruption

**PE 1.0/ NC 056**  
**E PRESCRIPTION**

B.Meenal

Faculty of Pharmacy, Kalinga University, Naya Raipur

**Abstract:**

Can u imagine going to a pharmacy and not seeing any "human" pharmacists? Imagine a robot giving you your medicine, helping you in your treatment, curing you. That sounds completely opposite of how robots are portrayed in movies right? But in some countries, this image has been made into reality. Have you ever wondered about a world where robots treat you? Dispense medicines? Imagine going to a pharmacy shop and being greeted not by humans but by human-made robots! Electronic prescribing is the alternative to the traditional method of manually written prescriptions in hospitals. Chances of errors are very less in e prescribing. It's more reliable source as it saves staffs time and errors. E prescription will be very helpful in hospitals as changes of errors are very less in e-prescribing. It's more reliable source as it saves staffs time and errors. To make prescribing more accurate and error free is an important element in improving the quality of patient care.

Keywords: Healthcare, Pharmacist, E-Prescription, Error Management, Medical adherence

**PE 1.0/ NC 057**  
**REVIEW ON TREATMENT AND PREVENTION OF COPD**

Jagpreet Kaur Sandhu

Faculty of Pharmacy, Kalinga University, Naya Raipur

**Abstract**

Chronic Obstructive Pulmonary Disease (COPD) is the second most fatal, life-threatening disease worldwide. It affects the cells of our lungs and causes difficulty in respiration. Which results in insufficient oxygen supply to the organs. COPD is increasing day by day as there has been a considerable increase in harmful particulate matter in the atmosphere due to increasing pollution and increased trend of smoking tobacco among the young adults. This article focuses on Causes of COPD, Drugs used for Treatment, Pharmacology of the drugs, Preventive and precautionary methods. COPD is mostly the result of careless human activities and behaviours and it is utmost important to have a knowledge of how it harmful to humans and for the future generations.

Keywords: COPD, Respiratory problems

**PE 1.0/ NC 058****DRUG DELIVERY SYSTEMS FOR TUMOR THERAPY**

Priyata Roy\*, Rajni Yadav, Dr. Sandip Prasad Tiwari  
Kalinga University, Faculty of Pharmacy, Naya Raipur, 492010

**Abstract**

Tumor is an abnormal growth of body tissue that affects human health in a very drastic way. In recent years, though there are many developments in the field of cancer treatment but the success rate of tumor therapy is still low. The current problem lies in the therapeutic agents which are lacking selective targeting of tumor and causing intolerable side effects by affecting normal cells.

In order to solve the problems researchers developed more effective medicines, nanomedicine to fabricate smart drug delivery systems. In recent years, novel inorganic nano-materials, liposomes, exosomes, dendrimers, metallic and non-metallic nanoparticles, have shown promising results in drug loading capacity, stability, and biocompatibility. Another drug delivery system is Targeted Drug Delivery Systems (TDDSs) have been showing promising therapeutic action for tumor therapy.

This review highlights the preparation, characteristics, and applications of several delivery carriers and delivery systems and explains the antitumor mechanism of different antitumor drugs in delivery carriers application of personalized cancer nanomedicine in the future. Also readers will get to know about some TDDSs that are under testing in preclinical/clinical trials and have shown promising results for the use of tumor therapy in future.

**Keywords:** Drug delivery systems, Nanoparticles, tumor therapy, cancer, antitumor drugs

**PE 1.0/ NC 059****CURRENT SCENARIO AND INNOVATION IN PHARMA INDUSTRY FOR DRUG DISCOVERY AND DEVELOPMENT**

Akash Polman\*, Rajni Yadav, Dr. Sandip Prasad Tiwari  
Kalinga University, Faculty of Pharmacy, Naya Raipur

**Abstract**

Pharmacology has been classified basically into two types pharmacodynamics and pharmacokinetics. The term pharmacokinetics can be defined as the study of dynamic movements of foreign chemicals throughout the body and which includes various kinetics of absorption, distribution, biotransformation or metabolism and excretion (ADME). It simply describes how the body handles the foreign chemicals. Pharmacokinetics uses models (mathematical equation) to understand the effect of time of action of ADME. It helps to understand the nature and biological effect of the foreign chemicals (xenobiotics). It helps to determine the rate of flow of xenobiotics in the tissue. It provides important data of the molecule's behaviour within organisms. A brief introduction as to why knowledge of the PK properties of an NCE (New Chemical Entity) is critical to its selection as a lead candidate in a drug discovery program and/or its use as a functional research tool, the present article presents an overview of PK principles, including practical guidelines for conducting PK studies as well as

the equations required for characterizing and understanding the PK of an NCE and its metabolite(s). A review of the determination of in vivo PK parameters by non-compartmental and compartmental methods is followed by a brief overview of allometric scaling. Thus, the reader will get a nice knowledge of pharmacokinetics basics, pk models, parameters and the general principles in this article.

**Keywords:** Pharmacokinetics, absorption, distribution, metabolism, excretion, pk models, parameters

#### PE 1.0/ NC 60

### AN OVERVIEW ON SICKLE CELL ANEMIA

Komal Bhawnani, Rajni Yadav, Dr. Sandip Prasad Tiwari  
Faculty of Pharmacy, Kalinga University, Naya Raipur

#### **Abstract:**

A condition known as sickle cell anaemia (SCA) is brought on by the creation of aberrant haemoglobin. This faulty haemoglobin links to other defective haemoglobin molecules inside the red blood cell, causing the cell to rigidly deform. This deformity makes it difficult for the cell to move via tiny vascular channels, which may lead to sludging and congestion of the vascular beds and tissue ischemia and infarction. The earliest clinical symptom of SCA, the acute pain crisis, which is assumed to be caused by marrow infarction, is caused by infarction, which is widespread throughout the body in SCA patients. Such injuries eventually lead to epiphyseal osteonecrosis and medullary bone infarcts. White matter and grey matter infarcts are observed in the brain, which lead to cognitive dysfunction and functional neurologic impairments. Common lung complications include infarcts, emboli (from marrow infarcts and fat necrosis), and a significantly higher risk of pneumonia. Infarction can occur in the kidney, liver, and spleen as well. Sequestration syndrome, a rare but potentially fatal consequence of SCA, occurs when a sizable portion of the intravascular volume is concentrated in one organ (often the spleen), leading to vascular collapse.

**Key words:** sickle cell anemia, Deformity, Grey, Sequestration syndrome.

#### PE 1.0/ NC 061

### AN OVERVIEW ON TOPICAL GELS OF CAMPHOR OR EUCALYPTUS

Vishal raj\*, Rajni Yadav  
Faculty of Pharmacy, Kalinga University, Naya Raipur

#### **Abstract:**

Across all over the world, the science of pharmacy and pharmaceuticals lead to an evolution in a very large aspect. The pharmaceutical industries of many countries with good economical background produces and develops really good medicinal products originating from both natural and artificial sources and one of the product which is highly used by the pharmaceuticals as well as by the cosmetic industries is topical gels. These products along with some other preparations has up lifted the pharamaceutical industries to a new level in the last 2-3 decades. As we know that these gels are applied on the upper most layer of skin so that it can get absorb to the downmost layer to reach the systemic circulation by penetrating and crossing the by lipid layer.



These gels come with various functionalities like to alter the appearance, for healing factor as well as for making the skin hydrated and filled with collagen again many pharmaceutical industries nowadays create these gels mostly with natural substances so that they can get more positive and beneficial effects and the least amount of adverse effects and almost no toxicological effects.

**Keywords:** Topical gels, pharmaceuticals, eucalyptus, Skin Hydration, Collagen

**PE 1.0/ NC 062**  
**EXTRACTION AND PHYTOCHEMICAL SCREENING OF SOME LOCAL ANALGESIC PLANTS.**

Ghanshyam Pathak\*,  
Faculty of pharmacy, Kalinga University, Naya Raipur

**Abstract**

This study addresses the phytochemical screening of the available parts (mainly leaves and stems) of 12 medicinal plants from 4 different families. Test plants were extracted by cold and hot extraction methods using methanol, petroleum ether, and water to extract carbohydrates, alkaloids, aganoids, proteins, radians, anthocyanins, saponins, steroids, starches, tannins, glycosides, we screened for the presence of phenols, and terpenoids. We have found that selected plants are excellent sources of various phytochemicals. This study demonstrates the presence of various biologically active secondary metabolites that help prevent chronic diseases. We can use local analgesic plant in different purpose like a post-surgical, acute pain, period pain, headache, toothache, sprains and strains, broken bones, burn, bites or stings. it is also use chronic pain like fibromyalgia, arthritis, cancer, neuropathy, etc. And other hand local analgesic is used in as homeopathic. Sometime local people also can treatment with the help of analgesic plant of some disease. There are many local analgesic plants which is used in spicy like cloves, ginger, turmeric etc. Non-standard extraction techniques could cause the phytochemicals in plants to deteriorate, which would then cause plant variations and the absence of reproducibility. To the greatest extent possible, efforts should be made to design and adhere to the optimum extraction procedure as well as to create batches that are high-quality and consistent. Phytochemical screening of prepared extracts was performed using various qualitative tests to identify the presence of chemical constituents. Tests were carried out using the following chemicals and reagents. carbohydrates by molar test, glycosides by water and caustic soda, saponins with foaming ability, steroids by chloroform and sulfuric acid, flavonoids by mg and HCL, ferric chloride Tannin solution with iron, gum with marsh- reagent and concentrated sulfuric acid. Alkaloids were tested with Mayer, Hager and Dubendorf reagent and identified by their characteristic color change using stander method.

**Key words:** Phytochemical, extraction of phytochemical, Phytochemical screening, types of local analgesic plants, conclusion.

**PE 1.0/ NC 063****NANOTECHNOLOGY IN CANCER DIAGNOISIS AND TREATMENT**

Binod kumar sah\*, Rajni yadav

Faculty of pharmacy, Kalinga University, Naya Raipur

**Abstract**

Uncontrolled cell division of aberrant cells in a body part results in cancer, a disease. They develop into an unceasing mass of cells known as a tumour. Prostate, Leukemia, Pancreatic, Breast, Liver, Lung, and more types of cancer exist. The breakthroughs in nanotechnology utilised to treat a variety of cancers. In order to improve treatment for prostate cancer, carbon nanotubes are combined with laser irradiation. With the help of nanopore, which uses the fluorescent anisotropic technique, leukaemia can be detected more easily. Iron oxide and gold nanoparticles can be added to materials to aid in the imaging of pancreatic cancer. Antibodies are combined with gold nanocrystals to identify breast carcinoma cells. Super magnetic iron oxide nanoparticles are employed in CT imaging as a contrast agent to improve the carcinoma of the liver imaged. The delivery of several medications used to target tumour cells in lung cancer can be accomplished through hybrid nanoparticles. The use of nanoparticles in various cancer kinds and their advancement in comparison to other cancer treatments are discussed in this review article. The term "nanotechnology" refers to atomic, molecular, and macromolecular size research and technology development that enables the controlled manipulation and study of structures and devices with length scales between one and one hundred nanometers. The features and functions of objects at this scale, such "nanoparticles," are unique and very different from those of objects at a larger scale. For biologists, the nanoparticles' tiny size, capacity to customize their surfaces, increased solubility, and multifunctionality present a wide variety of new study opportunities. There are two types of nanoparticles: organic nanoparticles like carbon nanotubes and dendrimers and inorganic nanoparticles like gold nanoparticles. Nanocrystals, liposomes, polymeric nanoparticles, dendrimers, quantum dots, and superparamagnetic nanoparticles are a few examples of diverse types of nanoparticles that have shown promise as cancer imaging and therapeutic agents.

**Key words:** Nanotechnology, cancer, nanoparticles, toxicity, Nano diagnostics, Imaging, Drug delivery, cancer therapy, hyperthermia.

**PE 1.0/ NC 064****PHARMACOLOGICAL ACTIVITY OF SOME CONVENTIONAL PLANTS**

Akansha Singh, Rajni Yadav, Dr. Sandip Prasad Tiwari  
Faculty of pharmacy, Kalinga University, Naya Raipur

**Abstract:**

Nature has been the source of medicine for thousands of years, and many modern medicines have been isolated from natural sources. Conventional medicine is an important source of new compounds potentially useful in the development of chemotherapeutic agents. Although important meanings and uses of several plants have been developed and published, many remain unknown today. Therefore, there is a need to conduct studies of its usefulness and conduct pharmacological and pharmacological studies to determine the effectiveness of the drug. *Tridax procumbens* (L.) is an annual herbaceous plant commonly found throughout India, but unfortunately it is one of the neglected plants. Thus, this review aims to expand the medical use of *Tridax procumbens* (combination) in various diseases and discover new ways to increase the value and awareness of increasing resources, as well as to attract scientific attention to anti-diabetic medicinal plants. This review is based on *Tridax procumbens* (L.). A study that revealed the anticancer properties and pharmacological activity of *Tridax procumbens* against PC 3 prostate epithelial cancer cells, such as hepatoprotective activity, antidiabetic activity, anti-inflammatory activity, wound healing activity, antidiabetic activity, antihypertensive effect, immunomodulatory properties and inflammation of the nose, prevents dysentery, diarrhea and hair loss, promotes hair growth and It has an antibacterial effect against gram-positive and gram-negative bacteria.

**Keywords:** *Tridax procumbens*, antioxidant, anti-inflammatory, antirheumatic, antibacterial, antidiabetic, anticancer, antihypertensive, immunomodulatory agent, wound healing, mosquito control, nanoparticles, wastewater treatment.

**PE 1.0/ NC 065****A REVIEW ON HERBAL FORMULATION AS AN IMMUNITY BOOSTER DURING COVID19 PANDEMIC**

Dushyant Sahu\*, Pranjul Shrivastava, Dr. Sandip P. Tiwari  
Faculty of pharmacy, Kalinga University, Naya Raipur

**Abstract**

A severe acute respiratory pattern is an unusual type of contagious pneumonia that's caused by SARS corona virus. At present, the whole world is trying to combat this corona virus complaint and scientific communities are putting rigorous sweats to develop vaccines. Still, there are only a many specific medical treatments for SARS- CoV- 2. Piece meal from other public health measures taken to help this contagion, we can boost our immunity with natural products. In this composition, we have stressed the eventuality of common spices and sauces as antiviral agents and immunity boosters. A questionnaire- grounded online check has been conducted on home

remedies during COVID- 19 among a wide range of peoples( n- 531) of different age groups( 13 – 68 times) from colorful countries. According to the check, 71.8 of people are taking kadha for combating infection and boosting immunity. Most people (86.1) suppose that there's no side effect of kadha while 13.9 suppose vice versa. An aggregate of 93.6 of people suppose that spices are helpful in curing corona virus or other viral infection as well as boosting immunity. Most people are using vitamin C, tulsi drops, and chyawanprash for boosting their body immunity. Thus, we conclude from the check and available literature that spices and sauces play a significant part against viral infections.

**Keyword: Covid -19, Herbal formulation, Pandemic, Immunity, Natural Product**

**PE 1.0/ NC 066**

**REVIEW ARTICLE ON RARE CONSEQUENCE OF A COMMON SYMPTOM:  
DIABETIS MYONECROSIS AND CHALLENGE IN DIAGNOSIS AND TREATMENT  
OF LONG -TERM DIABETES.**

Abhishek Gaurav\*, Pranjul Shrivastava, Dr. Sandip Prasad Tiwari  
Faculty of pharmacy, Kalinga University, Naya Raipur

**Abstract**

A rare consequence of diabetes mellitus called diabetic myonecrosis most commonly affect those with poorly managed insulin - dependent diabetes. Its origin is uncertain, but many believe microvascular constriction to be the key contributor to skeletal muscle necrosis. Diabetes mellitus is associated with microvascular and macrovascular complications; the most commonly recognized ones include diabetic nephropathy, retinopathy, and neuropathy. Less well-known complications are equally important, as timely recognition and treatment are essential to decrease short- and long-term morbidity. Even if the long-term prognosis is dismal, patients typically experience microvascular problems. We present data on four cases of diabetic myonecrosis that were treated in a tertiary care facility.

**Keyword: Diabetes myonecrosis, Retinopathy, Nephropathy, Microvascular, Diabetes Mellitus.**

**PE 1.0/ NC 067**

**REVIEW ARTICLE ON ROBOTICSIN HOSPITAL PHARMACY**

Satyam Roy\* Pranjul Shrivastava,  
Faculty of pharmacy, Kalinga University Naya Raipur

**Abstract**

To explore factors influencing hospital pharmacy staff acceptance of a pharmacy robotic dispensing system during implementation and over time. A single centered, prospective, longitudinal cohort quantitative study was conducted in an Australian tertiary public hospital using the Extended Technology Acceptance Model (ETAM). Staff were surveyed during the implementation of a pharmacy dispensing robot (May 2016) and again after working with the system for fifteen months (August 2017). Fishers exact test and correlation analysis of paired responses were used to identify significant factors influencing use of the system between the two

time points. Sixty four respondents completed surveys during implementation (n=64) and 34-paired surveys were collected fifteen months later. Respondents were predominantly young, female with a tertiary qualification. Initial perceptions did not change over time, with the exception of reliability. Departmental leaders had greatest influence on technology acceptance during implementation and over time. Other key factors correlating with acceptance included: how useful the robot was perceived to be; ease of use and how relevant the robot was for an individual role. Higher levels of education had a negative association with usage during implementation and age was not a factor.

**Keyword-** Robotics, Implementation, Education, Technology,

### PE 1.0/ NC 068

## REVIEW ON TRANSDERMAL PATCH: A UNIQUE APPROACH FOR PAIN MANAGEMENT

Karnam Verma\*, Pranjul Shrivastava

Faculty of pharmacy Kalinga University, Naya Raipur

### Abstract

However, the oral and parenteral routes of administration of these substances are restricted due to their low bioavailability, quick metabolism, poor absorption, first-pass impact, and severe side effects. In this situation, a transdermal administration system makes sense because it has the ability to get around problems with the oral and parenteral routes. Many therapeutic drugs have been delivered transdermally thanks to the development of various augmentation techniques, offering an amazing method to treat RA. The current article sheds light on the pathophysiology and etiology of RA. The difficulties with the transdermal route are outlined, along with the solutions. The most recent developments in boosting the transdermal effectiveness of RA medications are presented. The merits and disadvantages of the cutting-edge transdermal delivery technology are also outlined, along with its prospects for the future.

### PE 1.0/ NC 069

## REVIEW ARTICLE ON ANTI-DIABETIC ACTIVITY OF CYANADON DOCTYLON

Ayush Gupta\*, Pranjul Shrivastava

Faculty of pharmacy, Kalinga University, Naya Raipur

### Abstract

Cyanodondactylon (Poaceae) is a well-known traditional plant used as a folk remedy in treatment of many symptoms and diseases like cramps, measles, tumors, wounds, warts, fever and rheumatic affections. In this study, the antimicrobial activity of the plant crude extract from three different extraction (hot and cold aqueous extraction, methanol extraction) was investigated against some of the gram positive bacteria (Staphylococcus epidermidis, Bacillus cereus) and gram negative bacteria (Escherichia coli, Pseudomonas aeruginosa, Salmonella typhi, Shigella dysenteriae) using disc diffusion method. Amoxicillin and Gentamicin were taken as positive

control. The diameter of the clear zone of inhibition surrounding the disc was measured. The aqueous extract of Cyanodondactylon had antimicrobial activity against all the test organisms indicating broad spectrum activity of the extract for both gram positive and gram negative bacteria. No clear zone formed with methanol extract. It can be concluded that aqueous extract of whole plant of Cynodondactylon may be considered as an antibacterial agent and can be used to source antibiotic substances for possible treatment of bacterial infections.

**Keywords-** Cyanodondactylon, Aeruginosa, Anti-bacterial agent.

#### PE 1.0/ NC 070

### REVIEW ON RECENT ADVANCEMENT IN THE FORMULATION AND EVALUATION OF HERBAL FACE CREAM

Dhiraj Kumar Yadav\*, Sudeep Kumar Mandal  
Faculty of pharmacy, Kalinga University, Naya Raipur  
Email: saikoatma@gmail.com

#### Abstract

Aloe vera, amla and cucumber strip are restorative plant they are utilized as generally from old year in different natural prescriptions such as Ayurveda, Siddha, and Homeopathic. Beauty care products what's more, a few restorative items are made up from the adhesive tissue in the focal point of aloe vera leaf what's more, called Aloe vera gel. Aloe vera gel contains no Antraquinone. Which are liable for the solid purgative effects of aloes. In any case, complete leaf concentrate might contain Antraquinone. Aloe vera contains 75 possibly dynamic constituents like Vitamins, Chemicals, Minerals, Sugars, Saponins, Amino acids. Amla contains Amino corrosive like glutamic corrosive, proline, and Aspartic acids and so forth. Protein, Minerals. Cucumber strips are wealthy in fiber what's more, contain minerals like magnesium, potassium, what's more, silica. The silica is a fundamental part to keep your muscles, bones, and ligaments sound. It additionally hydrates our skin, further develops appearance and vision.

**Keyword:** Aloe vera, Amla, Cucumber peels, face cream, Evaluation.

#### PE 1.0/ NC 071

### VIEW ON HERBAL PLANT USED IN TREATMENT OF ASTHMA

Kanha Shukla\*, Sudeep Kumar Mandal  
Faculty of pharmacy, Kalinga University, Naya Raipur

#### ABSTRACT

Asthma a chronic inflammatory disease is a consequence of complex gene-environment interactions, with heterogeneity in clinical presentation and the type and intensity of airway inflammation and remodeling. The prevalence of asthma is on the rise worldwide, with industrialized countries with the highest levels of a disease. The major signs of asthma include airway blockage, inflammation and airway irritability. Asthma has major types include allergic, non-atopic and mixed types. Stress, extreme cold or heat, exercise, and infections are just a few of the many triggers of asthma. The goal of asthma treatment is to achieve good asthma control

i.e., to minimise symptom burden and risk of exacerbations. Anti-inflammatory and bronchodilator treatments are the mainstay of asthma therapy and are used in a stepwise approach yet treatment by Natural products have been extensively used as a complementary therapy for asthma therapy. The development of new therapeutic approaches or complementary therapies to the current asthma therapy thus will become a critical and essential strategy when you consider the therapies present available, their side effects, and their high cost.

**Keywords:** - asthma, allergic, non-atopic, bronchodilator, heterogeneity

#### **PE 1.0/ NC 072**

### **BREAST CANCER: BRIEF OVERVIEW INTO ITS AETIOLOGY, CLASSIFICATION, RISK FACTOR, MANAGEMENT, PSYCHOSOCIAL AND PHARMACIST ROLE**

Abdul Wahid Khamis, Sudeep Mandal

Faculty of Pharmacy, Kalinga University, Naya Raipur

#### **Abstract**

Breast cancer is the heterogenous non infections disease, according to the WHO more than 2.5 million women were diagnosed breast cancer in the year of 2020.it can be with it clinical manifestation or without the clinical sign. Family and hereditary pattern of the cancer genes play an important role. Chemotherapy, radiotherapy are among the systematic treatment in breast cancer, also surgery is also in the line of treatment. Pharmacist may play an important role in the adherence of cancer medication to the patient

**Keywords** breast, cancer, BRCA1, BRCA2, Post mastectomy

#### **PE 1.0/ NC 073**

### **REVIEW ON RECENT ADVANCEMENT IN TREATMENT AND DIAGNOSIS OF ATTENTION DEFICT HYPERACTIVITY DISORDER (ADHD)**

Saloni saw\*, Sudeep Kumar Mandal

Faculty of Pharmacy, Kalinga University, Naya Raipur

#### **ABSTRACT**

ADHD is a common neurodevelopmental disease that is frequently accompanied by various psychiatric comorbidities, functional limitations, and adverse long-term results. This chosen review's goal is to explain recent developments and difficulties in the identification and management of ADHD. The condition has neurological roots and is quite varied in terms of symptom patterns, cognitive deficits, and neurobiological and hereditary characteristics. Short-term pharmacological treatments have been shown to be effective and safe across the life cycle, but more study is required to examine long-term treatment, the effects of medication on preschoolers, and non-pharmacological interventions. Future studies are required to combine clinical and neurobiological data, examine understudied populations, and create innovative therapies in order to better understand the neurodevelopmental processes of the condition. This article focused on the prevalence of the disease and the reason in growth of the prevalence rate

across the globe. The data were compiled from various articles from SCI and SCOPUS indexed journals.

**Keywords:** ADHD, Hyperactivity, Impulsivity, Neurotransmitter, Serotonin, Dopamine

#### **PE 1.0/ NC 074**

### **LUNG CANCER DISEASE AND TREATMENT**

Tarun Kumar Sahu, Sudeep Kumar Mandal

Faculty of Pharmacy Kalinga University, Naya Raipur

#### **Abstract**

Lung most cancers remains the main reason of cancer mortality in males and females within the U.S. And world wide. About ninety% of lung cancer instances are as a result of smoking and the use of tobacco merchandise. The countrywide cancer Institute of these days sponsored three massive-scale, randomized managed trials of screening for early lung cancer. Contributors were centre-aged and older men who were continual heavy cigarette smokers and for this reason at excessive threat of growing lung most cancer.

**Keywords:** Lungs cancer, smoking, EGFR mutation, tobacco, air pollution , surgery for carcinoma , the bloody cough , bronchial dysplasia.

#### **PE 1.0/ NC 075**

### **A REVIEW ON CATHARANTHUS ROSEUS PLANT**

Prakash Kumar\*, Sudeep Kumar Mandal

Faculty of Pharmacy, Kalinga University, Naya Raipur

#### **Abstract**

The traditional Indian medical system known as Ayurveda is centered on the healing properties of plants. One plant with a good reputation in Ayurveda is *Catharanthus roseus*. It is well recognized for having anti-diabetic, antitumor, anti-microbial, anti-oxidant, and anti-mutagenic properties. It is an evergreen shrub that was initially discovered on the islands of Madagascar. The blooms' colors can range from pink to purple, and the leaves are placed in pairs across the blossom. It yields almost 130 alkaloids, primarily ajmaline, Vincete, risperidone, vincristine, vinblastine, and raubasin. Various cancers, including Hodgkin's disease, breast cancer, skin cancer, and lymphoblastic leukemia, are treated with vincristine and vinblastine. Since it is an endangered species, methods like micropropagation must be used to protect it. It has significant medical potential that should be thoroughly investigated. Although they have relatively similar chemical structures, vinblastine and vincristine have quite distinct activity spectra and side effects. Vinblastine is effective against Hodgkin's disease, choriocarcinoma, and other cancers, while vincristine is primarily used to treat acute leukemia in children. While vincristine is hazardous to the nervous system, vinblastin exhibits bone marrow toxicity.

**Keywords:** *Catharanthus Roseus*, anticancer, alkaloids, vinblastine, vincristine.



**PE 1.0/ NC 076****APPROACHES TOWARDS AYURVEDIC TREATMENT FOR FEMALE INFERTILITY LINKED TO POLYCYSTIC OVARIAN SYNDROME (PCOS)**

Asmina parven\*, Sudeep Kumar Mandal  
Faculty of Pharmacy, Kalinga University, Naya Raipur

**Abstract**

Poly Cystic Ovarian syndrome (PCOS) is the most widely recognized endocrinopathy in ladies of regenerative age, coming about because of insulin opposition and the compensatory hyperinsulinemia. This outcomes in unfavorable impact on various organ frameworks and may bring about change in serum lipids, anovulation, unusual uterine draining and fruitlessness. As per Ayurvedic view PCOS can be corresponded with Aarthava Kshaya. It was uncovered that the vast majority of subfertility patients who were introduced Osuki Ayurveda Center experienced the PCOS. In this manner the current review was completed for the clinical assessment of the adequacy of Ayurveda treatment routine on subfertility with PCOS. All out 40 patients were chosen by utilizing purposive testing strategy. As per the Ayurveda hypotheses of Shodhana, Shamana and Tarpana, the treatment was led in 3 phases however long a half year would last. The reaction to the treatment was recorded and helpful impacts were assessed by indicative alleviation and through Trans Vaginal Sweep and LH, FSH chemical levels. This paper focused on various Ayurvedic method as approach in the treatment of PCOS. The data were compiled from various research and review article of legitimate source.

**Key words:** Aarthava kshaya, subfertility, poly cystic ovarian syndrome (PCOS).

**PE 1.0/ NC 077****REVIEW ON NEW APPROACH FOR TREATMENT OF HEPATITIS C**

Anjali Singh \*, Srishti Namdev  
Faculty of Pharmacy, Kalinga University, Naya Raipur

**Abstract**

Chronic liver disease is caused mostly by Hepatitis C. It has been identified as a global health issue. One of the biggest causes of liver-related death is chronic HCV infection, which in many nations is the main driver of liver transplantation. Unsafe injectable medication usage and sterile medical procedures (iatrogenic infections) in nations with high HCV incidence are major risk factors for this blood-borne viral infection. Testing for serum HCV antibodies, HCV RNA, viral genotype and subtype, and, more recently, evaluation of resistance-related substitutions are all diagnostic methods. The primary goal of antiviral therapy is to get rid of the virus. New drugs known as direct acting antivirals (DAA) were created in 2011. The Direct-acting antiviral (DAA) pills are used to treat Hepatitis C. DAA pills are the most effective and safest drugs for treating hepatitis C. They are extremely efficient in eradicating the illness in over 90% of persons. The pills must be taken for 8 to 12 weeks. This article covers the development and benefits of DAA in the treatment of chronic hepatitis C and medication resistance.

**Keywords:** Hepatitis C, Iatrogenic infections, Antivirals, medication resistance.

**PE 1.0/ NC 078****NANOTECHNOLOGY DRUG DELIVERY SYSTEM IN DIABETES**

Shivam Kumar Yadav\*, Srishti Namdev

Faculty of Pharmacy, Kalinga University, Naya Raipur

**Abstract**

Diabetes mellitus (DM) has been recognised by mankind for over 2000 years. A complete lack of insulin, a relative lack of insulin, or insulin resistance are all symptoms of diabetes mellitus (DM), a set of metabolic illnesses. Age, ethnicity, and manner of life are three causes of the rise in diabetes prevalence. The best use of currently available medications is one of the current issues in the management of diabetes, as it's important to maintain optimal glucose, blood pressure, and cholesterol control while minimizing complications. The use of nanotechnology is emerging as the most alluring and promising of these approaches. Nanoparticles have the potential to be employed as efficient drug delivery systems in situations where there are barriers or unfavorable environments for macromolecules because of their shape-dependent properties, especially when at least one of their dimensions is smaller than 100 nm. Diabetic patients can get insulin orally, with advantages that reflect both the physiological fate of the hormone as well as the discomfort and suffering brought on by injections. This article provides a brief overview of the subject, with appropriate references to original research articles and review articles on previous and current research findings about nanotechnology applications, as well as their current and future prospects.

**Keywords:** Macromolecules, Diabetic patients, Nanotechnology, Insulin.**PE 1.0/ NC 079****AN OVERVIEW ON ALZHEIMER'S DISEASE AND MANAGEMENT**

Rajaneesh Kumar Pandey\*, Srishti Namdev

Faculty of Pharmacy, Kalinga University, Naya Raipur

**Abstract**

The progressive degeneration of any organ or any cell is a major issue. That is now scene worldwide at an alarming rate. disorder related to the brain and the whole nervous system is nowadays going at an equal rate with cardiac issues the most widely shown disorder which is displayed in the records of the hospitals are the neurodegenerative disorders Alzheimer's disease. and there is a progressive degeneration of the nerve cells of the central nervous system which leads to many complications. These neurodegenerative disorders can be treated in earlier stages which involves different medications and therapies for better results. The paper below mainly focuses and targets on the different types of behavior activities that are related to the central nervous system by which medication designed for the treatment of these types of disorders is. used for in vitro and in vivo studies in the field of pharmacology and preclinical studies.

**Keywords:** Alzheimer's, Neurodegeneration, Preclinical studies**PE 1.0/ NC 080**

## RECENT ADVANCMENT IN THE TREATMENT OF GENTIAL CANCER IN FEMALE

Harish Bhawnani, Mrs. Srishti Namdeo  
Faculty of pharmacy, Kalinga University, Naya Raipur

### Abstract:

From couple decades, steps have been made in the improvement in the treatment of gynecological cancer in women. With the combination of drugs and so many different types of therapies, it becomes possible to cure cancer. Still the clinical trials is going on, progress is getting better and updated in the field of cancer. Modern method of treatment includes radiotherapy, chemotherapy, even the novel method like monoclonal antibody. Women above 55 years old, heavy drinkers, even those with family history are on the risk factor of developing genital cancer. Furthermore many new drugs have been brought to the market. Majorly treatment works by working in the cancerous tissue either by cytotoxic or physical ablative mode of action. It seems that the situation of affected women is being improved.

**Keywords:** Genital Cancer, Monoclonal antibody, Cytotoxic, Ablative mode, Chemotherapy

### PE 1.0/ NC 081

## GOLD NANOPARTICLES DRUG DELIVERY SYSTEM

Mohammed Faiz\*, Khushboo Gupta, Pranjul Shrivastava  
Faculty of Pharmacy Kalinga University

### ABSTRACT

Nanotechnology provides a gateway of possibilities for scientists to explore their ideas in the biomedical field. One of the greatest challenges facing chemotherapy today is developing drug delivery Systems (DDSs) that are efficacious and have therapeutic selectivity. The application of gold nanoparticles (AuNPs) as a DDS is a rapidly expanding field. The biomedical use of metallic nanoparticles, especially AuNPs, has peaked interests over the past decade knowing its Properties that can be used directly or indirectly for the treatment and Diagnosis of disease. Potential applications of AuNPs have been recently studied and administrated in phase I & II clinical trials for cancer treatment. The ease of tailoring Aunts' into different size, shape, and decorations with different functionalities encourages the researchers to explore the ultimate potentials Of AuNPs for biomedicinal purposes, especially for drug delivery and imaging. The spherical AuNPs size (10 nm) has a characteristic UV absorbance at 520 nm, and the increase or decrease in sizes corresponds to Red or blue shifts. As for gold nanorods (AuNPs), the

absorbance will skew towards near infra-red range (690 nm–900 nm). These intrinsic optical properties provide the opportunity for AuNPs as composite theranostic agents in clinic.

**Keywords** - Gold Nanoparticles, Drug and gene delivery, Drug and gene release, Surface modification

#### PE 1.0/ NC 082

### REVIEW ARTICLE ON COMPARISON OF AGARICUS BISPORUS AND PLEUROTUS OSTREATUS: APPLICATION IN PHARMACEUTICAL SECTOR

Falguni Patel\*, Khushboo Gupta, Dr. Sandip Prasad Tiwari  
Kalinga University, Naya Raipur

#### Abstract

The white button mushroom, *Agaricus bisporus*, is a highly valuable culinary mushroom. The white button mushroom's beneficial characteristics and chemical makeup. The white button mushroom's beneficial characteristics and chemical makeup. The white button mushroom's fruiting bodies have a high nutritional content, according to the most recent scientific studies. They come packed with high-quality proteins, vital unsaturated fatty acids, fibre, a few vitamins, and a tonne of minerals. The white button mushroom contains hepatoprotective, anti-atherosclerotic, anti-cancer, anti-inflammatory, anti-microbial, and anti-fungal properties. While the oyster mushroom possess various nutritional and medicinal values. The fruit bodies of *Pleurotus* are rich in unique flavor and nutrients such as carbohydrates, protein, vitamins, minerals and dietary fibers. Bioactive compounds such as lectin, proteoglycans, laccase, lovastatin, phenols and uridine present in *Pleurotus* have shown some anti-tumor, anti-cancer, anti-bacterial, anti-fungal, anti-viral, anti-inflammatory, genoprotective, anti-oxidant, immunomodulatory, anti-diabetic, anti-allergic, anti-mitogenic, anti-hypertensive and anti-hypercholesterolemic properties. This review study compares the fundamental differences between button and oyster mushrooms in terms of their medicinal and nutritional benefits.

**Keywords:** *Agaricus Bisporus*, *Pleurotus ostreatus*, nutritional value, immunomodulating activity, antimicrobial activities, fruiting body, anticancer activity, anti-aging activity.

#### PE 1.0/ NC 083

### RECENT ADVANCEMENT IN VALIDATION ASPECTS: PHARMACEUTICAL VALIDATION

Saurav Priyadarshi\*, Khushboo Gupta, Dr. Sandip Prasad Tiwari  
Faculty of pharmacy, Kalinga University, Naya Raipur

#### Abstract

Validation is the establishment of recorded proof that offers a high level of assurance that a particular process regularly results in a product fulfilling its set specifications and quality characteristics. When an analytical procedure is used to obtain results for the quality of materials related to medicine, it is essential that the results be trusted. The requirements of good manufacturing practice (GMP) laws are observed to in the pharmaceutical industry's validation policy, which is documented for how to do validation. Validation is important for the proper

performance of pharmaceutical enterprises. . According to GMP, validation studies are a crucial component of GMP and must be carried out in accordance with established protocols. The bare minimum that needs to be verified are processes, testing, and cleaning, which is why such control procedures are used. Establish systems to keep an eye on production and validate any manufacturing procedures that might be to blame for the unpredictability of the pharmaceutical product.

**Keyword:** Validation, pharmaceutical Validation, Responsible Authorities.

#### PE 1.0/ NC 084

### **INNOVATIVE IMMUNITY BOOSTER: SMART VACCINE**

Ayush Jaiswal\*, Khushboo Gupta, Pranjul Shrivastava, Dr. Sandip Prasad Tiwari

Faculty of Pharmacy, Kalinga University

#### **Abstract**

Smart vaccines are the types of vaccine which are designed to deliver more accurate dose of drugs to the targeted location. All vaccines have the same goal, disease prevention. But different vaccines have their own ways to handle the disease. That's why Smart vaccine are designs in such way to deliver more accuracy in drugs delivery. Bacterial polysaccharides can be conjugated to immunogenic carrier proteins, or vaccines can be developed based on DNA, RNA, or proteins. Since the traditional vaccine development and they were unable to meet the rapidly growing COVID-19 vaccine demand, production, and distribution of COVID-19 vaccines in a large scale with lightning speed. This triggered the transition towards the smart vaccine manufacturing using in novel viral vector Technology and Biotechnology Methods. Nanobots are tiny biological machines that can deliver drugs to the target location or in particular place inside the cell, to make them more efficacious and reduce side effects, these are the biggest challenges of drug delivery.

**Keywords:** Biotechnology, Automation, Nanobots, Immunogenic protein.

#### PE 1.0/ NC 085

### **NOVEL APPROACHES FOR SKIN DRUG DELIVERY SYSTEM: CUBOSOMES**

Ishan Nagwanshi\*, Pranjul Shrivastava, Khushboo Gupta, Dr. Sandip Prasad Tiwari

Faculty of Pharmacy, Kalinga University, Naya Raipur

Ishannagwanshi2003@gmail.com

#### **Abstract**

Cubosomes are square and rounded particles having visible cubic lattices on the inside .cubosomes are highly Stable nanoparticles formed by hydrating a surfactant or polar lipid that generated a cubic phase and the dispersing a solid like phase in small particles. Cubosomes discovery is a fascinating narrative that involves food science ,differential geometry Biological membrane and digestive processes .The structure Provide a significant proteins and small drug molecules that liposomes .Cubosomes are nanostructured liquid crystalline nanostructured liquid crystalline particles that self-assemble and have a different internal cubic structure and content .

Cubosomes application include treatment of hair, skin, and other body tissue using cubosomes like vehicle activity of biological substance, regulated release of solubilized chemicals

**Keywords:** Lipid, Nanocarriers , Cubosomes, self-assembled particles

### PE 1.0/ NC 086

#### ADVANCEMENT IN PHARMACEUTICAL WORLD

Rajnish Kumar Singh\*, Pranjul Shrivastava, Khushboo Gupta, Dr. Sandip Prasad Tiwari  
Faculty of Pharmacy, Kalinga University, Naya Raipur  
**Email:** ds1703619@gmail.com

#### Abstract

Affordable healthcare is a basic human need which must be ensured by the governments. The problems gets worse when many pharma Giants with uncontrolled profit motive in pharmaceutical Industry start creating their own monopoly through their own patented products. During 1950s and 1960s, even in India, western multinational pharma had mono polished India's drug market. Even then India pharma Industry there has been such a revolutionary change in multinational dominance started ending.

The Industry worth \$ 43 Billion, including medicines and medical devices. According the world's third-largest manufacturing by volume, India has one of the lowest manufacturing costs globally. About one in three pills consumed in the U.S and one in four in the U.K are made in India. India's \$ 43 billion pharmaceutical sector overdependence China of Active Pharmaceutical Ingredients (API). API is a major challenge of the sector or API chemicals that are responsible for the Therapeutic effects of drugs.

According to a government report, India imports about 68% of its APIs from China as its cheaper option than manufacturing the domestically. In 1991, India imported only 1% of its APIs from China profit. India also imports \$ 1.5 billion of medical equipment from China in technology or machines to perform magnetic resource and other types of sophisticated scans. My point of view to this topic to aware the people on dependence on China for API and for imports the supply of raw materials for the production of drugs. Under a government has launched to year ago 35 APIs began to be production at 32 plants across India. This is expected to reduce dependence on China by up to 35% before the end of the decade.

**Keywords:** Pharmaceutical, Patented, Sophisticated

### PE 1.0/ NC 087

#### A REVIEW PAPER ON PHARMACOLOGICAL ACTIVITIES OF *OCIMUM SANCTUM* LINN (KRISHNA TUSSI)

Ahmad Husain Jolha\*, Khushboo Gupta, Vinay Kumar Mishra, Dr. Sandip Prasad Tiwari  
Faculty of Pharmacy, Kalinga University, Naya Raipur

#### Abstracts

Ocimum sanctum (Tulsi), popularly known as "Holy Basil," has long been regarded as sacred in India. It is a member of the Lamiaceae family. One of the key plants in the Indian system of herbal medicine is Ocimum sanctum, also known as tulsi or holy basil. The Tulsi plant has been credi

ted with a number of medicinal qualities not only in Ayurveda and Siddha but also in Greek, Roman, and Unani systems of medicine. The Ayurvedic medical system has prescribed *Ocimum sanctum* Linn. in many forms (leaves, stems, flowers, roots, seeds, and even the complete plant) for the treatment of bronchitis, malaria, diarrhoea, dysentery, skin conditions, arthritis, eye conditions, bug bites, and other ailments. Additionally, it has been hypothesised that *Ocimum sanctum* Linn. Contains adaptogenic, analgesic, antispasmodic, anticancer, anti-diabetic, anti-fertility, antifungal, and antibacterial properties. Different plant parts contain different concentrations of components. 0.7% of the volatile oil found in leaves is composed of 71% eugenol and 20% methyl eugenol. There are numerous medicinal and pharmacological uses for Krishna Tulsi. The active ingredient discovered in *Ocimum sanctum* Linn, eugenol, has been found to be substantially in charge of the plant's therapeutic potentials. This article's primary goal is to present the most recent analysis of medical activity against various diseases that has been scientifically proven.

**Key words:** Holy basil, Lamiaceae, eugenol, anti-diabetic, *Ocimum sanctum* Linn.

**PE 1.0/ NC 088**

## **CURRENT STATUS AND FUTURE PROSPECTS OF PHARMACOVIGILANCE IN NEPAL**

Vinay Kumar Mishra\*, Ahmad Husain Jolha, Khushboo Gupta, Dr. Sandip Prasad Tiwari  
Faculty of Pharmacy, Kalinga University, Naya Raipur

### Abstract

The science and activities surrounding the identification, evaluation, comprehension, and prevention of adverse reactions or any other issues pertaining to medications or vaccinations are known as pharmacovigilance. Before they are approved for use, all medications and vaccines go through thorough clinical trials to test their safety and efficacy. Medical personnel such as doctors, pharmacists, nurses, health assistants, and others in Nepal voluntarily report adverse drug reactions (ADRs). The nation's pharmacovigilance programme is still in its early stages; it has a small scope and underreporting is frequent. Worldwide efforts are being made to build effective pharmacovigilance systems, whereas the vast majority of affluent nations have put in place pharmacovigilance systems that are well-organized.

The necessary infrastructure for establishing such a system is still lacking in poorer nation. The discussion focuses on Nepal's need for pharmacovigilance, as well as its existing state and emerging developments.

**Keywords:** Pharmacovigilance, clinical trials, detection, evaluation, and understanding of adverse drug reactions (ADRs), Nepal.

**PE 1.0/ NC 089****NOVEL APPROACH IN INSTRUMENT OF RHEUMATOID ARTHRITIS THROUGH  
TRANSDERMAL PATCH**

Yugal Kishor verma, Saurabh Sharma, Dr. Sandip Prasad Tiwari  
Faculty of pharmacy, Kalinga University, Naya Raipur

**Abstract:-**

A chronic inflammatory joint condition known as rheumatoid arthritis (RA) is distinguished by a specific pattern of bone and joint degeneration. Patients with RA run a higher chance of passing away. RA's incidence and prevalence vary depending on the population, the statistical approach, and the description of the disease. Northern Europe and North America according to estimates, there are 20 to 50 cases of RA per 100,000 people, and the prevalence ranges from 0.5% to 1.1%. Southern Europe has reported lower incidences and prevalences, and there are limited statistics available for developing nation After the 1960s, some research indicated diminishing incidences and prevalence. a complex illness brought on by interactions between environmental and hereditary variable the key the gene for tyrosine-phosphatase and genetic factors.

**Keywords** Rheumatoid Arthritis, musculoskeletal, inflammatory control, autoimmune disease

**PE 1.0/ NC 090****IMPACT OF BLACK FUNGUS ON HEALTH OF COVID PATEINTS**

Shourya Sahu, Saurabh Sharma, Dr. Sandip Prasad Tiwari  
Faculty of Pharmacy, Kalinga University Atal Nagar New Raipur

**Abstract**

Mucormycosis is a life threatening fungal and mold infection belongs to order from class zygomycetes. It mainly affects people who have health problems or take medicines that lower the body's ability to fight germs and sickness. It is very rare emerging infection with high mortality rate and has provoked great public concern in the context of Covid-19 pandemic. Generally caused by saprophytic mould (fungi). The disease often manifests in the skin and also affects the lungs and the brain. People who have been unwell with COVID-19 and are still recovering have a compromised immune system, which means they're more at risk because their body can't fight off the infection. Mortality rates can approach 100% depending on the patient's underlying diseases and form of mucormycosis. The main cause of infection are soil dumping sites building and other sources of infection. This current review will be focuses on the impact of mucormycosis on covid 19 associated mucormycosis patient, as well as their prevalence, diagnosis and treatment.

**Keywords:** mucormycosis, zygomycetes, covid -19 pandemic



**PE 1.0/ NC 091****ETHOSOMES IN NOVEL DRUG APPROACH IN TOPICAL DRUG DELIVERY**

Rajnish Kumar\*, Saurabh Sharma, Dr. Sandip Prasad Tiwari  
Faculty of pharmacy, Kalinga University, Naya Raipur, Chhattisgarh

**Abstract**

Transdermal drug delivery technology has sparked a lot of interest. In the 1980s and 1990s, major pharmaceutical companies were interested. The ethosomes are ethanolic phospholipid vesicles used primarily for transdermal drug delivery. Ethosomes have a higher rate of penetration through the skin than liposomes, so these can be widely used in place of liposomes. Ethosomes have become a topic of study. Because of its improved skin permeation, improved drug delivery, and increased drug entrapment efficiency, and so on. The goal of writing this ethosomes drug delivery review was to compile the emphasis on various aspects of ethosomes, including their mechanism of action penetration, preparation, benefits, composition, characterization, application, and commercial. Ethosomes are lipid based vesicular drug carriers which consists of high ethanol concentration. The high concentration of ethanol in ethosomes imparts them the ability to modify the highly dense alignment of the lipid bilayers in the SC, thereby ensuring deeper drug penetration. The presence of ethanol also imparts a net negative on the surface of ethosomes that provide better stability due to electrostatic repulsion. The high concentration of ethanol also ensures high solubility of lipophilic drugs thereby increasing the entrapment efficiency (EE). Moreover, the ethosomes are less toxic and cause less skin irritation hence making ethosomes suitable for transdermal delivery. This study aimed to optimize the synthesis of CLE suspension using CCD model. Moreover, this study also aimed to enhance the drug permeation and pharmacological effect of carvedilol by incorporating the optimized ethosomal suspension into hydrogel for transdermal delivery. Further, the purpose of this study is to control the rate of carvedilol delivery across the skin to extend the anti-hypertensive effect of the drug for a longer period of time.

**Keywords:** ethosomes, topical drug delivery, skin permeation, liposomes.

**PE 1.0/ NC 092****QUANATUM DOTS AS A NOVEL APPROACH IN DRUG TARGETING**

\*Tanaka Buranga<sup>a</sup>, Saurabh Sharma, Dr. Sandip Prasad Tiwari  
Faculty of Pharmacy, Kalinga University

**Abstract.**

Nanoparticle-based drug delivery (NDDS) has emerged as a promising approach to improving upon the efficacy of existing drugs and enabling the development of new therapies. Proof-of-concept studies have demonstrated the potential for NDD systems to simultaneously achieve reduced drug toxicity, improved bio-availability, increased circulation times, controlled drug release, and targeting. However, clinical translation of NDD vehicles with the goal of treating particularly challenging diseases, such as cancer, will require a thorough understanding of how nanoparticle properties influence their fate in biological systems, especially in vivo. However, clinical translation of NDD vehicles with the goal of treating particularly challenging diseases, such as cancer, will require a thorough understanding of how nanoparticle properties influence

their fate in biological systems, especially in vivo. Though the direct use of Quantum Dots (QDs) for drug delivery remains questionable due to their potential long-term toxicity, the QDs core can be easily replaced with other organic drug carriers or more biocompatible inorganic contrast agents (such as gold and magnetic nanoparticles) by their similar size and surface properties, facilitating translation of well characterized NDD vehicles to the clinic, maintaining NDD imaging capabilities, and potentially providing additional therapeutic functionalities such as photo thermal therapy and magneto-transfection. In this review we outline unique features that make QDots an ideal platform for nanocarrier design and discuss how this model has been applied to study NDD vehicle behavior for diverse drug delivery applications. This article focused on various aspects of drug targeting using the Quantum dots as a novel approach.

**Keywords:** Quantum Dots, Drug Targeting, Side effects, Bioavailability, Graphene QDs.

### PE 1.0/ NC 093

#### SKIN CANCER: AN OVERVIEW

Chandraprakash Dwivedi<sup>1</sup>, Swarnali Das Paul<sup>2</sup>

Bodhni Devi Pharmacy Diploma College Jagdalpur, Bastar (C.G)<sup>1</sup>

Faculty of Pharmaceutical Sciences, SSTC, SSGI, Bhilai, C.G, India<sup>2</sup>

#### Abstract

Skin cancer is the most common type of cancer and commonly develops in sun-exposed areas of skin. The incidence is highest among outdoor workers, sportsmen, and sunbathers and is inversely related to the amount of melanin skin pigmentation; fair-skinned people are most susceptible. Skin cancer is the most frequent cancer in the white population worldwide. Incidence of basal cell carcinoma (BCC), squamous cell carcinoma (SCC) and malignant melanoma (MM) is still increasing. Skin cancers may also develop years after therapeutic x-rays or exposure to carcinogens (eg, arsenic ingestion). Ultraviolet radiation exposure is implicated in most skin cancers, and the incidence of skin cancer is rising worldwide. Cancer begins when healthy cells change and grow out of control, forming a mass called a tumor. A tumor can be cancerous or benign. A cancerous tumor is malignant, meaning it can grow and spread to other parts of the body. A benign tumor means the tumor can grow but will not spread. Doctors diagnose skin cancer in more than 3 million Americans each year, making it the most common type of cancer. If skin cancer is found early, it can usually be treated with topical medications, procedures done in the office by a dermatologist, or an outpatient surgery.

**Keywords:** Carcinoma, Prevention, diagnosis, skin cancer. Melanoma.

**PE 1.0/ NC 094****DIABETES MELLITUS: A REVIEW**

Somesh Sahu<sup>1</sup>, Chandraprakash Dwivedi<sup>1</sup>, Swarnali Das Paul <sup>2</sup>  
Bodhni Devi Pharmacy Diploma College Jagdalpur, Bastar (C.G)<sup>1</sup>  
Faculty of Pharmaceutical Sciences, SSTC, SSGI, Bhilai, C.G, India<sup>2</sup>

**Abstract**

Diabetes mellitus is a metabolic disorder characterized by elevated blood glucose levels and disturbances in carbohydrates, fats and protein metabolism. Diabetes mellitus, often simply referred to as diabetes, is a group of metabolic diseases in which a person has high blood glucose, either because the body does not produce enough insulin, or because cells do not respond to the insulin that is produced. This high blood glucose produces the classical symptoms of polyuria (frequent urination), polydipsia (increased thirst) and polyphagia (increased hunger). The prevalence of type 2 diabetes mellitus begins to rise in early middle age and increases along with age. Exogenous insulin is not always a necessity for these patients because insulin production is frequently high compared to that of type 1 diabetes mellitus. In the early stage of type 2 diabetes mellitus, the predominant abnormality is reduced insulin sensitivity. At this stage, hyperglycemia can be reversed by a variety of measures and medications that improve insulin sensitivity or reduce glucose production by the liver.

**Keywords:** Liver, insulin, glucose, diabetes, blood

**PE 1.0/ NC 095****ANTIDANDRUFF SHAMPOO: A REVIEW**

Tarak Biswas<sup>1</sup>, Chandraprakash Dwivedi<sup>1</sup>, Swarnali Das Paul <sup>2</sup>  
Bodhni Devi Pharmacy Diploma College Jagdalpur, Bastar (C.G)<sup>1</sup>  
Faculty of Pharmaceutical Sciences, SSTC, SSGI, Bhilai, C.G, India<sup>2</sup>

**Abstract:**

The shampoo sector is probably the largest unit of among the hair care products. Since the shampoos are one of the cosmetic products used in daily as the hair is special and cherished feature of humans. Majority of ingredients in the shampoos are chemicals and hence have been under severe attack due to its potential risk of side effects with its usage. The formulated herbal shampoo is black in color with demonstrable good froth stability, detergency, good cleansing, low surface tension, optimum pH and conditioning activity. All these are the ideal characters for good quality of the herbal shampoo to be used in daily life. However, further scientific investigation is required for of its overall quality.

**Keywords:** Low toxicity, Powder shampoo, Cream shampoo, hair, scalp.

**PE 1.0/ NC 096****DOSAGE FORMS AND THEIR DEFINITIONS: AN OVERVIEW**

Mantosh Majumdar<sup>1</sup>, Chandraprakash Dwivedi<sup>1</sup>, Swarnali Das Paul<sup>2</sup>  
Bodhni Devi Pharmacy Diploma College Jagdalpur, Bastar (C.G)<sup>1</sup>  
Faculty of Pharmaceutical Sciences, SSTC, SSGI, Bhilai, C.G, India<sup>2</sup>

**Abstract:-**

The manner in which drug substance are presented in the market (e.g- solids, liquids or semi solids) Need for different dosage form of same drug, to minimize discomfort and instant relief and improve patient compliance. Need for convert drug to dosage forms -Accurate dose. Protection e.g. coated tablets, sealed ampoules. Protection from gastric juice. Masking taste and odor (to make palatable). Placement of drugs within body tissues. Sustained release medication. Controlled release medication. Optimal drug action Insertion of drugs into body cavities (rectal, vaginal) Use of desired vehicle for insoluble drugs.

**Keywords:** Powders, Solutions, Suppositories, Tablets, Suspensions, Enemas.

**PE 1.0/ NC 097****HERBAL SKINCARE CREAMS: AN OVERVIEW**

Lokesh Sahu<sup>1</sup>, Chandraprakash Dwivedi<sup>1</sup>, Swarnali Das Paul<sup>2</sup>  
Bodhni Devi Pharmacy Diploma College Jagdalpur, Bastar (C.G)<sup>1</sup>  
Faculty of Pharmaceutical Sciences, SSTC, SSGI, Bhilai, C.G, India<sup>2</sup>

**Abstract:**

good skincare practice does not only help to enhance protective functions of skin, but also impart beneficial cosmetic effects on us. With the increasing aging population of the world and aggressive marketing by cosmetic companies, the demand for skincare products surged. skin care creams are defined as a semi-solid emulsion containing mixtures of oil and water which can be used to moisturizes the skin of the face and any other parts of the body nowadays, these herbal skincare creams are becoming more popular and prevalent among people due to their mindset and concerns about synthetic or chemical substances that may lead to adverse effects.

**Keywords:** Cream, Skin, Chemical, Soft, Substances, hyperpigmentation

**PE 1.0/ NC 098****MEDICINAL VALUES OF VINCA ROSEA**

Guptesh Kumar<sup>1</sup>, Shiv Shankar Shukla<sup>1</sup>, Chandraprakash Dwivedi<sup>2</sup>  
Columbia Institute of Pharmacy Raipur<sup>1</sup>  
Bodhni Devi Pharmacy Diploma College Jagdalpur, Bastar<sup>2</sup>

**Abstract**

Vinca (OR) Vince rosea has been known since BC50 European countries as anti-dysenteric, anti haemorrhagic, diuretic and wound healing. This plant was used in the form of tea for the treatment of diabetes in jamaica and brazil for toothache. Vinca cause cytotoxicity is due to their interactions with disruption of microtubule function and tubulin, especially of microtubules comprising the mitotic spindle fiber and causing metaphase arrest. They can perform some other biochemical response which can be effective or may not be effective on microtubules. The anticancer active ingredients vinblastine and vincristine are derived from the leaf and stem of vinca. They inhibit the growth of human tumors.

**Keywords:** biochemical, Hodgkin's diseases, Hodgkin's diseases, micro-organism

**PE 1.0/ NC 099****TRANSDERMAL DRUG DELIVERY DEVICE: A REVIEW**

Sudarshan Sahu<sup>1</sup>, Chandraprakash Dwivedi<sup>1</sup>, Swarnali Das Paul<sup>2</sup>  
Bodhni Devi Pharmacy Diploma College Jagdalpur, Bastar (C.G)<sup>1</sup>  
Faculty of Pharmaceutical Sciences, SSTC, SSGI, Bhilai, C.G, India<sup>2</sup>

**Abstract:-**

A Transdermal Drug Delivery Device, Which May Be Of An Active Or A Passive Design, Is A Device Which Provides An Alternative Route For Administering Medication. These Devices Allow For Pharmaceuticals To Be Delivered Across The Skin Barrier. Transdermal Drug Delivery Enables the Avoidance of Gastrointestinal Absorption, With Its Associated Pitfalls of Enzymatic and PH Associated Deactivation. The Patch Also Permits Constant Dosing Rather Than The Peaks And Valleys In Medication Level Associated With Orally Administered Medications. Multi-Day Therapy with A Single Application. Drug In Adhesive Technology Has Become The Preferred System For Passive Transdermal Delivery; Two Areas Of Formulation Research Are Focused On Adhesives And Excipients.

**Keywords:** Transdermal Drug Delivery Device, skin permeation, Technology.

**PE 1.0/ NC 100****TURMERIC, CURCUMIN AND OUR LIFE**

Sudeep Mandal<sup>1</sup>, Chandraprakash Dwivedi<sup>1</sup>, Swarnali Das Paul<sup>2</sup>  
Bodhni Devi Pharmacy Diploma College Jagdalpur, Bastar (C.G)<sup>1</sup>  
Faculty of Pharmaceutical Sciences, SSTC, SSGI, Bhilai, C.G, India<sup>2</sup>

**Abstract:**

Asian countries consume much of their own turmeric production, except for Japan and Sri Lanka. Major importers are the Middle East and North African countries, Iran, Japan and Sri Lanka. These importing countries represent 75% of the world turmeric trade, which is met mostly by the Asian producing countries. Europe and North America represent the remaining 15% and are supplied by India and Central and Latin American countries. Taiwan exports mostly to Japan. About 97% of US imports of turmeric come from India, with the Islands of the Pacific and Thailand supplying the rest. The increasing demand for natural product as food additives makes turmeric as ideal candidate as a food colorant, thus increasing demand for it. Additionally, recent medical research demonstrating the anti-cancer and antiviral activities of turmeric may also increase its demand in western countries.

**Keywords:** Curcuminoids, radioprotection, cholesterol levels, androgen receptor

**PE 1.0/ NC 101****GILOY: A REVIEW**

Mousami Chanda<sup>1</sup>, Chandraprakash Dwivedi<sup>1</sup>, Swarnali Das Paul<sup>2</sup>  
Bodhni Devi Pharmacy Diploma College Jagdalpur, Bastar (C.G)<sup>1</sup>  
Faculty of Pharmaceutical Sciences, SSTC, SSGI, Bhilai, C.G, India<sup>2</sup>

**Abstract:-**

To study the impact of *Tinospora cordifolia* stem supplementation on the glycemic and lipemic profile of subjects with diabetic dyslipidemia. Medicinal plants are powerful health promoting nutritional agents. Among the vast library of medicinal plants *Tinospora cordifolia* (Willd.) has been meagerly explored. It belongs to the family Menispermaceae and is a rich source of alkaloid and terpenes. It has hepatoprotective, antioxidant, and immunostimulatory, hyperlipidemic, anticancer and antidiabetic properties. The stem contains berberine, palmatine, tembetarine, magnoflorine, tinosporin, tinocordifolin. The stem starch is highly nutritive and digestive. In modern medicine it is called the magical rejuvenating herb owing to its properties to cure many diseases.

**Keywords:** chemical, fruits during, alkaloids, Guduchi, Immunomodulatory activity:



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