IQAC & SAVANT CLUB OF

YASHWANTRAO BHONSALE COLLEGE OF PHARMACY

IN COLLABORATION WITH

THE INDIAN PHARMACEUTICAL ASSOCIATION-MAHARASHTRA STATE BRANCH (THE IPA-MSB)

ORGANIZED

5TH ONE DAY NATIONAL SYMPOSIUM ON

"MEDICINAL AND PHARMACEUTICAL SCIENCES (NSMPS)"

SOUVENIR-2023

SUNDAY, 12TH FEBRUARY 2023

BHONSALE KNOWLEDGE CITY (BKC)
BUILDING NO. 2, VAZARWADI-CHARATHE, SAWANTWADI,
DISTRICT- SINDHUDURG, MAHARASHTRA, INDIA. PIN: 416510
Phone: (02363) 272233, 272299; E-mail: ybpharmacy@gmail.com

YBCPs' SOUVENIR-2023

"MEDICINAL AND PHARMACEUTICAL SCIENCES (NSMPS)"

SUNDAY, 12TH FEBRUARY 2023

About Society

Shri. Yashwantrao Bhonsale Education Society (SYBES) is a premier educational organization in Sindhudurg district established in 2002 with the only aim to make rapid progress of the students through high quality, diversified and multi-disciplinary education which will help the young ones to meet the challenges of 21st century and to capitalize their skills ahead.

About Institute

Yashwantrao Bhonsale College of Pharmacy (YBCP) is the first ever Pharmacy College in Sindhudurg district introducing pinnacle of excellence in pharma education and research. The commitment for total quality management (TQM) and discipline is prime slogan and motto of our college. To cater the need of technical & professional education in Konkan region especially in Sindhudurg district, YBCP commenced from 2015 with a state of art ultra-modern infrastructure offering M. Pharm (Pharmaceutics), B. Pharm and D. Pharm course. It has taken a huge stride towards providing advance technical education to each & every rural student of the Konkan region.

About IPA-MSB

The IPA-MSB is a state branch of the IPA initiated in 1941 immediately after the foundation of IPA in 1939. The IPA-MSB runs an educational institute, Bombay College of Pharmacy (BCP), The Amrut Mody Research Fund (AMRF), The Research Society of Bombay College of Pharmacy (RSBCP), Dr. M. K. Rangnekar Memorial Testing Laboratory (MKR), Academy for Clinical Excellence (ACE), IPA-SF-MSB are other ventures which are governed by The IPA-MSB. The IPA-MSB is the only state branch of IPA that has the distinction of getting the BEST BRANCH Award constituted by IPA six times i.e. 2004, 2005, 2011, 2012, 2016 and 2017. It has till date 3248 plus Life members and has active local branches at Pune, Nashik, Aurangabad, Solapur, Nagpur, Kolhapur, Amravati, Dhule and Raigad.

About IPA

The Indian Pharmaceutical Association (IPA) is the premier professional association of pharmacist in India founded on 23rd Dec 1939, with a member base of over 15000 spreads across the length and breadth of the Nation. IPA operates in India through 21 state branches and more than 46 local branches. The members represent various facets of pharmaceutical profession viz. industry, regulatory, community pharmacy, hospital pharmacy and education. IPA is also actively associated in managing several academic programs. As member of the Drug Technical Advisory Board, India, IPA is actively involved in advising the Government on matters of professional importance. IPA is affiliated to international pharma associations like FIP, FAPA, CPA, AAPS, AAiPS, IPSF & WHO for carrying out various collaborative professional activities which include organizing training program for professionals.

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Sunday, 12th February 2023

Executive Chairman Message

Hon. Shri. Achyut K. Sawant-Bhonsale
Executive Chairman, Shri. Yashwantrao Bhonsale Education Society

I am glad to know that Yashwantrao Bhonsale College of Pharmacy is organizing the National Symposium for the fifth time in continuity within 7 years of its inception. It is my great pleasure to welcome the renowned guest speakers and the academicians, researcher scholars, delegates and students from all over India attending this 5th National Symposium on "Medicinal and Pharmaceutical Sciences (NSMPS)" organized by Yashwantrao Bhonsale College of Pharmacy, Sawantwadi.

It is a moment of satisfaction and pleasure to say that this national conference is organized with a view of providing a platform to researchers and students in the field of Pharmacy to gain knowledge and showcase their talent in the field of study. I am sure the scientific topics of research to be discussed in this symposium will promote the knowledge of the attendees. I hope this conference will facilitate exploration of scientific data on Medicinal and Pharmaceutical Sciences.

I appreciate the principal together with the staff in different organizing committees for their sincere and sustained efforts for bringing together this symposium as success.

Once again, I am delighted to welcome you all and wish this event a grand success!

Shri. Yashwantrao Bhonsale Education Society's

Yashwantrao Bhonsale College of Pharmacy, Sawantwadi

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Chairperson Message

Hon. Adv. Mrs. Asmita A. Sawant-Bhonsale
Chairperson
Shri. Yashwantrao Bhonsale Education Society

It is of great pride and honour for me to know about the 5th One Day National Symposium organized by the entire team of Yashwantrao Bhonsale College of Pharmacy (YBCP). I believe that our venue guarantees a successful event amid the culture and beautiful scenery of Konkan.

The symposium with the theme of "Medicinal and Pharmaceutical Sciences (NSMPS)" is highly relevant to recent discoveries and developments in the field of Pharmacy. This symposium is surely a big opportunity for all the participants to learn through scientific and professional interaction and update their knowledge and experiences.

We are fortunate to serve a national level event in the form of Symposium and I am thankful to the college for being part of this initiative. The vision, knowledge and experience of organizing the national level symposium will help us pave the way into the future of Pharmacy professionals into the scientific research.

I wish an all success for this major event of Yashwantrao Bhonsale College of Pharmacy.

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Secretary Message

Hon. Shri. Sanjeev I. Desai
Secretary
Shri. Yashwantrao Bhonsale Education Society

I feel delighted to welcome all the delegates to attend 5th One Day National Symposium on "Medicinal and Pharmaceutical Sciences (NSMPS)" on behalf of the organizing team of Yashwantrao Bhonsale College of Pharmacy, Sawantwadi.

It is the wholesome efforts of the Principal and entire organizing team of the college in arranging such a big event with eminent lectures of highly renowned speakers who would throw light on research and innovation related information that will shape the pharmacy future. I hope that maximum number of participants will take this opportunity and attend the symposium to exchange ideas, discover novel trends and broaden their knowledge related to Pharmaceutical Research.

I wholeheartedly wish for the success to the entire organizing team!

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With Best Compliments From

Shri. Nitin Maniar
Secretary
The Indian Pharmaceutical Association-Maharashtra State Branch (The IPA-MSB)

Shri. Yashwantrao Bhonsale Education Society's

Yashwantrao Bhonsale College of Pharmacy, Sawantwadi

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Principal Message

Prof. (Dr.) Vijay A. Jagtap
Principal, Yashwantrao Bhonsale College of Pharmacy (YBCP), Sawantwadi
Coordinator, The IPA-MSB, Education Division, Sindhudurg District
Convener – 5th One Day National Symposium

I feel privileged to welcome to all the delegates and participants for the 5th One-Day National Symposium on "Medicinal and Pharmaceutical Sciences (NSMPS)" on behalf of Yashwantrao Bhonsale College of Pharmacy, and congratulate my entire team for this big arrangement of the grand event.

YBCP has been arranging the national level symposium from last four years, this being our five year of hosting this event. The vision behind this National level Symposium arranged at the Konkan Region is to provide an opportunity to the National as well as regional students to grow and broaden their horizon of knowledge by indulging into diverse spheres of learning.

In our endeavour to raise the standards of discourse, we continue to remain aware in order to meet with the changing needs of our stakeholders. The symposium aims to bring different ideologies under one roof and provide opportunities to exchange ideas face to face, to establish research relations and to find partners for future collaboration. The themes for this conference is indicative of relevant research areas to give the prospective authors innovative prepositions about the ambit of discussion.

The discovery and advent in the Research prospects of Pharmacy is accelerating the whole process of drug development. Recently, the development of new technologies has revolutionized the concept of pharmaceutical research. The current symposium will give an

update on recent advances, trends, technologies and developments in the field of drug research in Pharmacy.

We wish to thank our eminent speakers of technical session and welcome then wholeheartedly for this Symposium. The resource persons being Dr. Krishna R. Iyer, Principal, Bombay College of Pharmacy, Mumbai, Maharashtra and Dr. Shailendra S. Gurav, Professor, Goa College of Pharmacy, Panaji, Goa. It's my indeed pleasure to say thank the Indian Pharmaceutical Association along with Maharashtra State Branch Hon. President Dr. T. V. Narayana, Hon. Secretary Mr. Nitin Maniar and Hon. Divisional Chapter Head – Education Dr. John D'souza for collaborating the symposium.

I also express my lot of thanks to all our Patrons Hon. Executive Chairman Shri. Achyut Sawantbhonsale, Hon. Chairman Adv. Mrs. Asmita Sawantbhonsale, Hon. Secretary Mr. Sanjeev Desai and Hon. Administrative Coordinator Mrs. Sunetra Phatak for their support and constant encouragement to organize this symposium.

Last but not the least, I would also like to thank the staff, the faculty members, the committee members, students and the coordinator for their contribution in successfully organising and managing this event. This event wouldn't have been possible without their enthusiasm and constant support.

We welcome you all to YBCP and hope that this symposium will serve as a medium for all of us to upgrade our knowledge regarding the research prospects in our field of study.

Thank you!

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Organizing Secretary Message

Mr. Tushar G. Rukari
Assistant Professor
Head, Dept. of Pharmaceutics (UG)
Organizing Secretary – 5th One Day National Symposium

First and foremost, I would like to thank the convener of this symposium Hon. Dr. Vijay A. Jagtap (Principal), as well as Hon. Mr. Achyut K. Sawntbhonsale (Executive Chairman, SYBES, Sawntwadi); Hon. Adv. Mrs. Asmita Sawntbhonsale (Chairman, SYBES, Sawntwadi) and Hon. Mr. Sanjiv I. Desai (Secretary, SYBES, Sawntwadi) for the trust and confidence that they have given me to lead this 5th National Symposium. It is truly an honour!!!

On the behalf of Yashwntrao Bhosnale College of Pharmacy (YBCP), Sawantwadi, I would like to extend my sincere thanks to all the delegates and participants for their registration to our 5th "National Symposium on Medicinal and Pharmaceutical Sciences (NSMPS)". Every year, this national symposium is distinctive in its own way. I would like to appreciate the committed, hardworking, and dedicated members from the different committees who tirelessly work together to meticulously prepare every detail all for one objective… a successful national symposium!!!

As like previous years, this year also this symposium will provide an outstanding platform for exchanging the information and discussion on wide range of topics. Through this

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Souvenir we tried to amalgamate different ideas at one-stop throughout the country and to create research relations amongst the researchers.

To offer an excellent technical knowledge at the symposium, we have invited distinguished experts including Keynote speaker Hon. Dr. Prakash Gurav (Dean, Govt. Medical College, Oras, Sindhudurg, Maharashtra) and Technical Session Expert Hon. Dr. Krishna I. Iyer (Principal, Bombay College of Pharmacy, Mumbai, Maharashtra) as well as Hon. Dr. Shailendra S. Gurav (Professor, Dept. of Pharmacognosy and Phytochemistry, Goa College of Pharmacy, Goa). I would like to thank all dignitaries for accepting our invitation for this symposium.

The excellent response to our call-for-papers signifies the recognition of this symposium and proves that the organization of the symposium is popular enough for all aspects of science and technology in the field pharmaceutical research and related topics. The enthusiasm of participants has surely risen due to the effective conduction of all past four symposium events and predicts the excellent status of future programs. I would like to express my thanks to all the authors, co-authors, mentors/guides for this massive response and their outstanding contributions.

Through this event, we hope to bring about harmonious working relationships among the different committee members where there is respect, love, care, dedication, and commitment.

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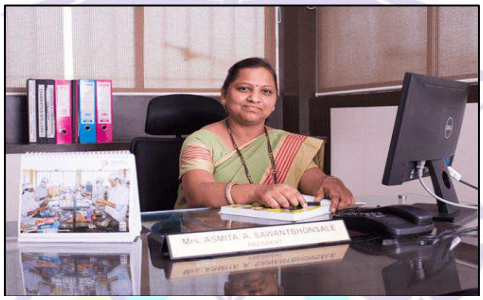
CHIEF PATRONS

Hon. Shri. Achyut Sawantbhonsale
Executive Chairman



Hon. Adv. Smt. Asmita Sawantbhonsale
Chairperson

Hon. Shri. Sanjeev Desai
Secretary

Hon. Smt. Sunetra Phatak
Administrative Coordinator

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RESOURCE PERSONS

Dr. Krishna R. Iyer

Principal

Bombay College of Pharmacy,
Mumbai, Maharashtra, India

Topic: A Brief History of Cytochrome P450s: Their Role in Drug Metabolism Pharmacokinetics

Dr. Shailendra S. Gurav

Professor

Goa College of Pharmacy,
Panaji, Goa, India

Topic: Current Scenario on Pharmaceutical Research and Innovations in Pharmacy Field

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CONVENER

Dr. Vijay A. Jagtap
Principal & Professor
Dept. of Pharmaceutical Chemistry, Yashwantrao Bhonsale College of Pharmacy
Sindhudurg District Coordinator, The IPA-MSB Education Division

ORGANIZING SECRETARY

Mr. Tushar G. Rukari
Assistant Professor
Head, Dept. of Pharmaceutics (UG)

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CO-ORDINATORS

Dr. Rohan K. Barse
Associate Professor
Head, Dept. of Pharmaceutics (PG)

Dr. Prashant Y. Mali
Associate Professor
Head, Dept. of Pharmacy Practice (UG)

LOC MEMBERS

Mr. Vinod S. Mule
Assistant Professor
Head, Dept of Pharmacology

Ms. Rashmi H. Mahabal
Assistant Professor
Head, Dept. of Pharm. Chemistry

Mr. Satyajit P. Sathe
Principal
YBCDP

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REGISTRATION COMMITTEE

Ms. Aishwarya L. Thakur
Assistant Professor
Head, Dept. of Pharmacognosy

Ms. Namita G. Narvekar
Assistant Professor
Dept. of Quality Assurance

Ms. Manaswi M. Sawant
Assistant Professor
Dept. of Pharmaceutics

Ms. Sheetal S. Samant
Assistant Professor
Dept. of Pharmacognosy

Ms. Bhagyashri A. Haldankar
Lecturer
YBCDP

Ms. Advika A. Arolkar
Lecturer
YBCDP

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SCIENTIFIC POSTER PRESENTATION AND SOUVENIR COMMITTEE

Ms. Pranali V. Joshi
Assistant Professor
Dept. of Quality Assurance

Ms. Sanyuja S. Nikam
Assistant Professor
Dept. of Pharmaceutical Chemistry

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TRANSPORTATION AND ACCOMMODATION COMMITTEE

Mr. Omkar M. Pendse
Head
Integrated Diploma in Pharmacy

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FOOD COMMITTEE

Ms. Sneha J. Sawant
Lecturer
Integrated Diploma in Pharmacy

Ms. Sneha A. Madgaonkar
Lecturer
YBCDP

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PUBLICATION COMMITTEE

Mr. Mayuresh R. Redkar
Assistant Professor
Dept. of Pharmaceutics

Ms. Pranita K. Pawar
Assistant Professor
Dept. of Pharmaceutics

Ms. Kavita A. Sawant
Lecturer
Integrated Diploma in Pharmacy

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ANCHOR AND BACK STAGE COORDINATION COMMITTEE

Ms. Gauri U. Bhivshet
Assistant Professor
Head, Dept. of Quality Assurance

Ms. Gauravi H. Sonsurkar
Assistant Professor
Dept. of Pharmaceutics

Ms. Rakshanda S. Khorguwenkar
Assistant Professor
Dept. of Pharmaceutical Chemistry

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STAGE ARRANGEMENT COMMITTEE

Ms. Namita S. Bhosale
Assistant Professor
Dept. of Pharmaceutics

Mr. Vinod R. Biradar
Assistant Professor
Dept. of Pharmaceutical Chemistry

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WELCOME COMMITTEE

Ms. Priyanka B. Malbari
Assistant Professor
Dept. of Pharmaceutical Chemistry

Ms. Supriya B. Rawool
Lecturer
Integrated Diploma in Pharmacy

Ms. Prajakta N. Desai
Lecturer
YBCDP

Ms. Rashmi D. Naik
Lecturer
YBCDP

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A SPECIAL THANKS TO

Mr. Prasad Mahale
Registrar
Bhonsale Knowledge City

Mr. Nitin V. Sandye
PRO
Bhonsale Knowledge City

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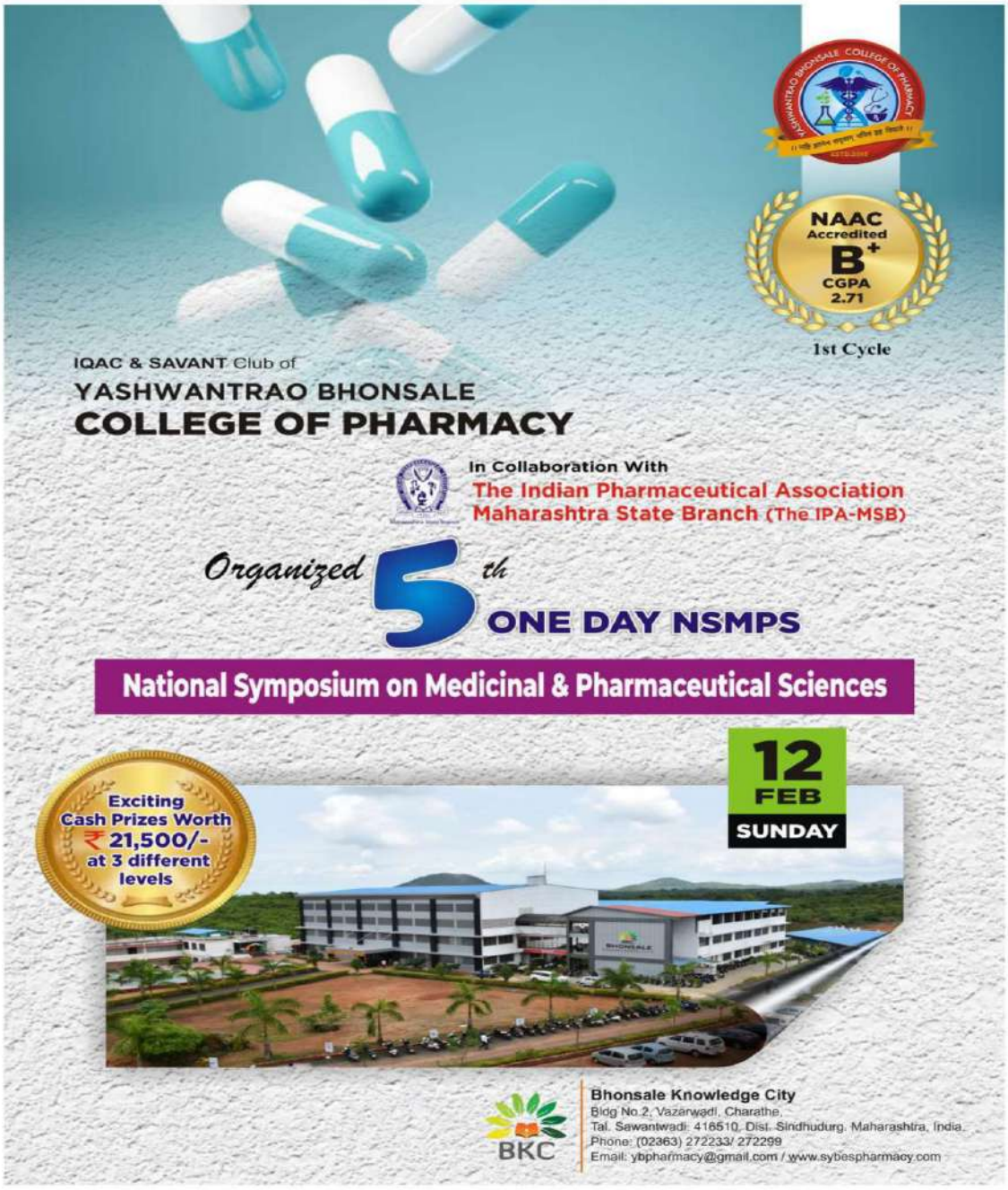

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12 FEB SUNDAY

5th One Day
National Symposium on
Medicinal and Pharmaceutical Sciences
(NSMPS)

Dear Delegates,
It gives us immense pleasure to invite you for your participation in one day National Symposium on Medicinal and Pharmaceutical Sciences organized by Yashwantrao Bhonsale College of Pharmacy on 12th February 2023. We welcome you to participate in this symposium.

About Society
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About The IPA- MSB
The IPA-MSB is a state branch of the IPA initiated in 1941 immediately after the foundation of IPA in 1939. The IPA-MSB runs an educational institute, Bombay College of Pharmacy (BCP), The Amrut Mody Research Fund (AMRF), The Research Society of Bombay College of Pharmacy (RSBCP), Dr. M.K. Rangnekar Memorial Testing Laboratory (MKR), Academy for Clinical Excellence (ACE), IPA-SF-MSB are other ventures which are governed by The IPA-MSB. The IPA- MSB is the only state branch of IPA, that has the distinction of getting the BEST BRANCH Award constituted by IPA six times i.e 2004, 2005, 2011, 2012, 2016 and 2017. It has till date 3248 plus Life members and has active local branches at Pune, Nashik, Aurangabad, Solapur, Nagpur, Kolhapur, Amravati, Dhule and Raigad.

Symposium Schedule

Time	Session
09.00 am to 09.45 am	Registration, Break fast, Tea
09.45 am to 10.15 am	Inaugural and Welcome Address
10.15 am to 10.30 am	Keynote Address
10.30 am to 11.30 am	Technical Session I
11.30 am to 12.30 pm	Technical Session II
12.30 pm to 01.30 pm	Lunch Break
01.30 pm to 03.15 pm	Poster Presentation
03.15 pm to 03.30 pm	High Tea
03.30 pm to 04.15 pm	Valedictory Function

VISION MISSION

Vision:
Provide pharmacy education to our rural students that optimizes the health & wellness of individuals & communities.

Mission:
M1 : Disseminate transformative pharmacy practice models through effective infrastructure & learning.

M2 : Foster a culture of inclusivity that attracts and retains a diverse students, faculty & staff

M3 : To enrich social values by being a torch-bearer of civility, diversity & mutual respect in our vicinity.

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Sunday, 12th February 2023

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PH-PHD0101

TO ENHANCE SOLUBILITY OF ANTIDIABETIC DRUG PIOGLITAZONE BY USING POLYMER PLATFORM TECHNOLOGY

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Abstract:

An ideal drug delivery system fulfills the objective of maximizing therapeutic effect while minimizing toxicity. The present investigation aimed to provide an approach for the solubility and bioavailability enhancement by novel polymer platform Drug delivery system. Platform technology containing of polymeric system with release modulator and able to accommodate the drugs with common physicochemical /therapeutic properties with minimal changes. Pioglitazone, BCS class II drug result in sub therapeutic plasma drug levels leading to therapeutic failure. In order to improve solubility and dissolution of PIO, microwave assisted ball milling technique was followed. Chitosan and neusiline US2 were used to prepare solid dispersion forming ternary complexation. Optimization of solid dispersion of ternary complexation a 32 level full factorial design with Design Expert Software version 12 had been used. Pioglitazone–CH-neusiline systems allowed a marked improvement of the initial drug water solubility, drug dissolution and drug stability. FTIR, DSC and XRPD studies showed that PIO-CH-NS complexes can be prepared by microave assisted milling technology has formed stable crystalline in ternary complex system. A novel polymer platform technique increase bioavailability enhancing the therapeutic effect while reducing the toxicity of drug molecules with improving patient compliance.

Keywords: BCS class II, FTIR, DSC & XRPD

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PH-PHD0102

DEVELOPMENT AND VALIDATION OF THE UV-SPECTROPHOTOMETRIC METHOD FOR DETERMINATION OF FERROUS SULPHATE IN BULK AND IN FORMULATION

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Abstract:

The main objective was to develop and validate the UV-spectrophotometric method for the estimation of ferrous sulphate in bulk and pharmaceutical formulations as per ICH guidelines. The λ max of ferrous sulphate was found to be 510 nm. The drug follows linearity in the concentration range 5–30 µg/ml with a correlation coefficient value of 0.9992. The proposed method was applied to pharmaceutical formulation and % amount of drug. Estimated was 98.19% and was found to be in good agreement with the label claim. The accuracy of the method was checked by recovery experiment performed at three different levels, i.e., 80%,100%, and 120%. The % recovery was found to be in the range of 98.44– 99.90%. The low values of % RSD are indicative of the accuracy and reproducibility of the method. The precision of the method was studied as an intraday; interday variations, and repeatability. The % RSD value< 2 indicates that the method is precise. Ruggedness of the proposed method was studied with the help of two analysts. The method was a rapid tool for routine analysis of Ferrous sulphate in the bulk and in the pharmaceutical dosage form.

Keywords: Ferrous Sulphate, U.V., Accuracy, Precision

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PH-PHD0103

WASTE TO WEALTH: AN APPROACH TO PREPARE HYDROXYAPATITE

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Abstract:

Hydroxyapatite (HAp) is the most stable calcium orthophosphate at pH above 4 and has a variety of chemical and biomedical applications, including bone tissue regeneration, cell proliferation, drug delivery, implant coating, and catalytic activity. Composites of HAp are widely used in biomedical applications due to their biocompatibility, bioactivity and osteoconductivity properties. In fact, if we can think over the development of HAp at industrial scale at low cost and high efficiency will be the greatest impact on bone tissue engineering applications and even in the various drug delivery systems. Hydroxyapatite (HAp, Ca10(PO4)6(OH)2) is the main inorganic constituent of bone and teeth. Moreover, composites prepared from synthetic HAp and collagens have a great potential to mimic and replace skeletal bones. New nano-composites containing HAp NPs with synthetic or natural polymers having biodegradable and biocompatible characteristics will be the new cost effective and eco-friendly bone replacement therapy. In fact, reconstructive tissue engineering is now a day's highly active research area that involves the development of materials with outstanding properties such as HAp NPs. These can only be achieved by means of combining different components, processes and technologies. Nanoparticles constituted by biodegradable polymers have a great potential due to the excellent combination of properties. The proposed research works are mainly concerned with the preparation of cost effective and environmental friendly HApnano composites. HAp has as a highly promising system for new therapies that take advantage of the capability of HAp to mask biomolecules, cross biological barriers and deliver drugs just onto the disease target and as also to replace the skeletal bones in a very less cost.

Keywords: Hap, Biodegradable, Biocompatible, Collagens

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PH-PG0101

ORAL GASTRORETENTIVE FILM OF BCS CLASS II DRUG FOR THE TREATMENT OF GASTROPARESIS

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Abstract:

The research work aimed to formulate and evaluate gastroretentive mucoadhesive films of calcium channel blocker, Lacidipine for treatment of gastroparesis. Box-Behnken Design was employed for preparation of optimized formulation using solvent casting method. Mucoadhesive polymers like HPMC E15, Eudragit RL100 and Eudragit RS100 at different concentrations were considered as independent variables and their effect on drug release, swelling index at 12h and folding endurance of the film were examined. Optimized formulation was evaluated for organoleptic properties, weight variation, thickness, swelling index, folding endurance, drug content, mechanical strength, and drug release. The results revealed that, the film possessed significant flexibility, smoothness and *in-vitro* drug release of 95.22 ± 0.93 % at the end of 12h. Scanning electron microscopy imaging of film displayed smooth, uniform and porous surface texture. Further, the film was incorporated in a capsule and the presence of capsule did not affect the drug release profile. Upon storage at 25 ± 2 ℃ and 60 ± 5 % RH for 3 months, no change was observed in the appearance, drug content, swelling index, folding endurance and drug release. The study demonstrated that gastroretentive mucoadhesive film of Lacidipine could serve as effective and alternate site-specific targeted delivery in the treatment of gastroparesis.

Keywords: Lacidipine, Gastroparesis, Box-Behnken Design, Gastroretentive mucoadhesive film

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PH-PG0102

THE EMERGING ROLE OF NANOTECHNOLOGY IN COSMECEUTICALS

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Abstract:

Nanotechnology is an innovative area of science that includes the design, characterization, production, and application of materials, devices and systems by controlling shape and size at the nanometer scale (1–100 nm). Nanotechnology incorporation in cosmetic formulation is considered as the hottest and emerging technology available. Nanocosmetics and nanocosmeceuticals have been extensively explored for skin, hair, nails, lips, and teeth, and the inclusion of nanomaterials has been found to improve product efficacy and consumer satisfaction. Nano-sized materials such as cubosomes, nanodots, lipo-somes, dendrimers, nano-emulsions are now becoming regular ingredients in the cosmetic space. Special focus is given to the applications of nanomaterials in the cosmetic industry, their unique features, as well as the advantages of nanoscale ingredients compared to non-nanoscale products. The state-of-the-art practices for physicochemical and toxicological characterization of nanomaterials are also reviewed.

Keywords: Nanotechnology, Nanocosmeceuticals, Cubosomes, Liposomes, Dendrimers.

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PH-PG0103

DEVELOPMENT OF NATURAL POLYMER BASED MUCOADHESIVE BUCCAL DRUG DELIVERY OF ZOLMITRIPTAN FOR EFFECTIVE MIGRAINE TREATMENT

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Abstract:

The zolmitriptan is a serotonin (5-HT1) agonist used for the treatment of migraine. Half-life of zolmitriptan is 2.5 to 3 hrs and it undergoes hepatic metabolism, the absolute oral bioavailability is about 40 to 50%. So, in order to improve the bioavailability and efficacy, we have prepared buccal films of zolmitriptan. The present study was focused on preparation and evaluation of mucoadhesive buccal film for the controlled systemic delivery of Zolmitriptan using colocasia gum, okra gum and jackfruit gum as natural polymers in various proportions by solvent casting technique to avoid first pass hepatic metabolism. The developed film were evaluated for the physicochemical, mechanical and drug release characteristics like weight variation, thickness, folding endurance, tensile strength, swelling study, surface pH, mucoadhesive strength, in vitro residence time, drug content uniformity and drug release. The film showed desired mechanical and physicochemical properties to withstand environment of oral cavity. The in-vitro release study showed that film could deliver drug to the oral mucosa for a period of 8 h. The film exhibited adequate stability when tested under accelerated conditions. Hence these formulations of Zolmitriptanmucoadhesive buccal films promising one as the controlled drug delivery.

Keywords: Zolmitriptan, Buccal films, Mucoadhesion / Bioadhesion, Colocasia gum, Okra gum, Solvent casting, *In-vitro* drug release.

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PH-PG0104

3D PRINTING TECHNOLOGY: A NEW ERA FOR PHARMACEUTICALS

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Abstract:

As, 3D (three dimensional) printed drug was first approved by Food and Drug Administration in 2015, there has been a growing interest in 3D printing for drug manufacturing. 3D printing includes thorough diagnosis of the patient followed by manufacturing of formulation which will be more suitable for the patients. Personalized 3D printed medicines can be adjusted by their therapeutic value. 3D technology has already crept into the marketplace in the form of polypills, excipients, nanosuspensions and hydrogels. Polypills are most critical application of 3D printing in development of customizable medicines. Polypills is fusion of several drugs into single tablet that could be customized for patient going through polypharmacy, these improves patient compliance as decreases number of pills consumed per day. On demand, printing of drug products can be implemented for drugs with limited shelf life or for patient specific medications. Offering an alternative to traditional compounding pharmacies, 3D printing for drug manufacturing is the future of pharmaceuticals, making personalized medicine possible while also transforming pharmacies.

Keywords: 3D, Nanosuspensions, Polypills

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PH-PG0105

PREPARATION AND CHARACTERIZATION OF A POORLY WATER-SOLUBLE DRUG'S CO-CRYSTAL: A SOLUBILITY IMPROVEMENT APPROACH

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Abstract:

Carvedilol, an antihypertensive drug, has a poor solubility and dissolution rate. The Co-crystals of drug were made by utilizing the solvent evaporation method with coformers such as salicylic acid. The Co-crystals of Carvedilol were made by utilizing the solvent evaporation method with conformers. Differential Scanning Calorimetry (DSC), FT-Infrared Spectroscopy (FTIR), scanning electronic microscopy (SEM). The formation of a new solid phase with the coformer was visible in the SEM analysis of pure carvedilol and cocrystal shape. As a result, Co-crystal formation may be beneficial in improving Carvedilol's solubility, dissolution, and micrometric characteristics.

Keywords: Carvedilol, Co-crystals, Solubility, FT-IR, Dissolution, Micromeritic

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PH-PG0106

DEVELOPMENT OF TRANSDERMAL PATCHES USING MORINGA OLEIFERA GUM- A NATURAL POLYMER

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Abstract:

The transdermal drug delivery system was presented as a solution to the issues with oral drug delivery in particular. A medicated adhesive patch known as a transdermal patch is applied to the skin to deliver a particular amount of medication through the skin and into the bloodstream. It helps an injured part of the body heal. The advantage of a transdermal drug delivery method over other delivery methods like oral, topical, and intravenous i.m., etc. is that the patch allows the medication to be dispensed into the patient in a controlled manner, usually by melting thin layers of medication embedded in the adhesive or by a porous membrane covering a reservoir. Because the skin is a very effective barrier, the main drawback of transdermal delivery systems is that only medications with small molecules can easily pass through the skin and be delivered this way. Controlling the drug loading, rate of release, and duration of release necessitates careful polymer selection. The drug polymer interaction is the most important consideration when selecting a polymer. Moringa gum, a polysaccharide exudate that comes from the stem of the plant *Moringa oleifera*, is the subject of a lot of research in the food, pharmaceutical, and other industries.

Keywords: Transdermal, Delivery System, Natural Polymer, Patch, Moringa, Gum.

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PH-PG0107

EVALUATION OF ANTIOBESITY POTENTIAL OF AYURVEDIC FORMULATION AMRUTHOTHARAM FORMULATED BY CLASSICAL AND MODERN TECHNIQUE

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Abstract:

Glucose intolerance, central obesity, hypertension, and dyslipidemia are all part of the metabolic syndrome. Thus, a number of theories have been put out to explain the development of the metabolic syndrome, including an initial condition of insulin resistance that progressed to the other elements, with obesity serving as the primary initiator of the metabolic syndrome. Thus, it can be understood that metabolic syndrome is multi related and the basic cause is inflammation. Thus, while treating the metabolic syndrome the root cause needs to be targeted and for this the Ayurvedic science is the best solution. Amruthotharam is one of such preparation which takes care of metabolic syndrome through inflammation. "Amruthotharam" Kashayam is the concoction that has been prepared from three major herbs that have had their worth proven in many cases of indigestion and other stomach related problems. The concoction is prepared by mixing 3 parts of *Tinospora Cordifolia*, 2 parts of *Terminalia Chebula* and 1 part of *Zingiber officinale*. The present study is focusing on the comparisons between the Amruthotharam a kerealian Ayurvedic medicine formulated by classical and modern technique which can be evaluated analytically and pharmacologically.

Keywords: Metabolic Syndrome, Amruthotharam, Ayurvedic Medicine.

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PH-PG0108

MICROSPONGES BASED NOVEL DRUG DELIVERY SYSTEM FOR AUGMENTED PAIN THERAPY

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Abstract:

The most common drug for treatment of pain and inflammation is NSAIDS. But this NSAIDS having the hazardous side effect on oral administration. To overcome the side effect of NSAIDS and to reduce the frequencies of dosing of formulation we need to prepare the formulation with prolong release. This can be achieved by preparation of microsponge of nutmeg in carbopol gel. Microsponge was prepared using Eudragit RS 100 as polymer and method was adapted the quasi emulsification solvent diffusion. Microsponges were incorporated in carbopol 940. Microsponge and microsponge containing gel were evaluated for Production Yield, Encapsulation Efficiency, Particle size analysis, Morphology, physiochemical parameter, drug release, analgesic and anti-inflammatory activity. From the in-vitro and ex-vivo release studies it was shown that formulation give prolong release up to 24 hours. Good analgesic and anti-inflammatory activity was obtained as compared to marketed formulation. From this study it was found that microsponge gel formulation has safe and potential as alternative dosage form for the application on painful and inflamed condition.

Keywords: Microsponge, NSAIDS, Diffusion, Anti-inflammatory, Analgesic

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PH-PG0109

DEVELOPMENT OF MUCOADHESIVE BUCCAL PATCHES USING NATURAL POLYMER: TAMARIND SEED POLYSACCHARIDE

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Abstract:

The mucoadhesive drug delivery system is a popular novel drug delivery method because mucousmembranes are relatively permeable, allowing for the rapid uptake of a drug into the systemiccirculation and avoiding the first pass metabolism. Mucoadhesive polymers have been utilized inmany different dosage forms in efforts to achieve systemic delivery of drugs through the different mucosa. These dosage forms include tablets, patches, tapes, films, semisolids and powders. Tamarind seed polysaccharide (TSP) is one such example that shows more valuable properties making it a useful excipient for a wide range of applications. TSP, a naturally occurring polysaccharide derived from Tamarindus indica seeds, has lately gained widespread potential in the pharmaceutical and cosmetics sectors. Simple methods are used to isolate it and characterise it, with the following results: In its production, in cost-effective yield. Due to its high swelling index, high drug retaining capacity, and high thermal stability, especially necessary for various novel drug delivery systems. Additionally, it functions as a stabiliser, thickener, binder, release retardant, modifier, suspending agent, viscosity enhancer, emulsifying agent, carrier for novel drug delivery systems in oral, buccal, colon, and ocular systems, as well as in nanofabrication, wound dressing. Its multifunctional potential has been demonstrated through several investigations and tests, and it is clear from these results that TSP has a bright future and a wide range of possible uses.

Keywords: Buccal Patch, Tamarind Seed, Polysaccharide, Mucoadhesion, Natural Polymer.

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PH-PG0110

MICROSPONGE BASED IN-SITU OCULAR GEL: A NEW VISION TO TREATMENT OF GLAUCOMA

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Abstract:

Glaucoma is a category of eye disease that may lead to vision loss caused by damage to the optic nerve and permanent blindness. It does characterize by a rise of intraocular pressure (IOP) resulting in changes in the fiber layer of the optic nerve and retinal nerve. In the present work, the antiglaucoma drug acetazolamide was formulated as a microsponge in situ gel for ocular drug delivery aiming at improved therapeutic efficacy, solubility, and permeability to membrane and reduction in the systemic side effects of oral acetazolamide. The microsponge does prepare by the quasi-emulsion solvent diffusion method with various polymer: drug ratio acetazolamide loaded microsponges does prepare with Eudragit RS 100 polymer and does incorporate into ocular in situ gel formulation containing Carbopol 940 and HPMC E4M .different parameters does evaluate for particle size, entrapment efficiency, drug content in vitro drug release FTIR Spectroscopy and scanning electron microscopy. The in situ gel was evaluated for physiological properties (PH, gelling capacity, gelation time, rheological properties) and in vitro drug release and sterility study. Results revealed that microsponge formulation having polymer to drug ratio of 2:1 showed satisfactory production yield(42.10±3.56%), entrapment efficiency(82.02±2.5), drug content(54.65±1.37), and mean particle size of about 10µm; hence these results indicated that acetazolamide microsponges in situ gel have the potential ability for ophthalmic delivery.

Keywords: Microsponge, Glaucoma, Ocular *in-situ* gel, Ophthalmic Drug Delivery

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PH-PG0111

DANTAVALKAM: MAKES BUBBLE IN THE RELAXATION

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Abstract:

Toothpaste, tooth brush, rinse and repeat this is a staple of our daily dental hygiene routine. Globally toothpaste market size was USD 17.5 billion and is projected to reach USD 21.99 billion by 2027.Marketed toothpaste has limitations like inadequate dose, improper use compliance, side effects like ulcer creation and some health hazard. Around 90% toothpaste contain some toxic ingredients like sodium chloride, propylene Glycol, hydrated silica which is harmful for human body. Most paste contains abrasives that can cause micro abrasion also brushing with too much toothpaste can damage enamel. Some toothpaste is not pleasant in taste behalf of this in youngsters tooth brushing is very boring and time consuming. To overcome these cons this herbal chewing gum is a novel way in the field of oral care. This medicated herbal chewing gum provides customer compliance and easy to use even in travel or simply by doing day to day work also Brushing children's teeth regularly is a common and difficult task for parents in every house but this innovative way makes this task easier and interesting in growing children.The advantages and therapeutic benefits of chewing gum support its development as we can see from past and are going to find a place in market by formulation of new medicated chewing gums.

Keywords: Medicated Chewing Gum, Toothpaste, Patient compliance, Oral Care, Dental Hygiene.

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PH-PG0112

FORMULATION AND EVALUATION OF MICROBEADS USING GUAR GUM

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Abstract:

Mucoadhesive microbeads were prepared by Ionotropic gelation and cross linking technique by using sodium alginate as the hydrophilic carrier in combination with Guar gum as release modifier. Micro beads with different ratio of sodium alginate and guar gum were formulated and evaluated for particle size, swelling ratio, and percentage yield. The drug loaded batches were evaluated for drug entrapment,bioadhesiveness, in vitro release, and release kinetics. Microbeads of Sodium alginate with guar gum as release modifiers could be used as an alternative and cost effective carrier for the development of oral controlled release capsules or tablets as once daily formulation.

Keywords: Ionotropic gelation, Guar Gum, Sodium alginate, micro beads, Release modifier

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PH-PG0113

NOVEL SOL-GEL TRANSITION SYSTEM FOR ACNE TREATMENT

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Abstract:

Acne is a disorder of the pilosebaceous unit and is generally characterized by the formation of shatter comedowns, inflammatory lesions, and the presence of bacteria Propioni bacterium acnes in the follicular canal and sebum production. Each of these factors provides a potential target for treatment. Propionic action aches are the pharmacological target site of anti-acne drugs, methanolic extract was prepared and evaluated for antioxidant and antibacterial activity The aim of the present study was to prepare a herbal gel formulation containing methanolic extract of *Rubia cordifolia* on acne. The topical gel formulation was designed by using the methanolic extract from the roots and stems of *Rubia cordifolia* in varied concentrations. The prepared gels were evaluated for physical appearance, pH, drug content, diffusion study.

Keywords: *Rubia centifolia*, Carpool, Herbal gel

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PH-PG0114

NOVEL IN-SITU GEL

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Abstract:

Periodontitis is a chronic inflammatory disease affecting supporting tissues of teeth. Conventional treatment is the systemic administration of antibiotics which requires repeated dosing and resulted in toxic adverse effects. These consequences can be solved by delivering the drug at the desired target site to show local therapeutic action. In situ gel-forming systems are polymeric system that exists as flowing solution before administration and undergoes phase transition to form a viscoelastic gel in a physiologic environment. Aim of the present work was to formulate and evaluate an in situ gelling drug delivery system of moxifloxacin by cold method using the polymers poloxamer 407 and carbopol. The prepared in situ gels were evaluated for visual inspection, surface pH, viscosity, syringeability, gelation temperature, gelling time, in-vitro gelling capacity, drug content and in vitro drug release. The formulation F4 was selected as the optimized formulation which has a gelation temperature of 36.33±0.57◦C with drug content of 95.92±0.13% and showed in vitro drug release of 72.59% at the end of 8 hrs. It follows first order release kinetics with Higuchi model drug release mechanism. The selected formulation was evaluated for its antibacterial activity and stability and it showed good antibacterial activity against both gram positive and gram negative microorganisms and was stable at refrigerated temperature over three months.

Keywords: In-situ gel, Poloxamer, Carbopol

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PH-PG0115

FORMULATION OF BIOPOLYMERS BASEDINTERPENETRATING POLYMER NETWORK (IPN) MICROBEADS USING ALCL3

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Abstract:

In the last decades, interpenetrating polymer network (IPN) based drug delivery systems gained great attention due to their advanced properties like excellent swelling capacity, biocompatibility, biodegradability, no phase separation, and non-toxicity. The IPN is a combination of two or more polymers in network form in which at least one polymerized and/or cross-linked in the immediate presence of the others. Interpenetrating network (IPN) microbeads of sodium carboxymethyl locust bean gum (SCMLBG) and sodium carboxymethyl cellulose (SCMC) containing Mefenamic acid a non-steroidal antiinflammatory drug were prepared by single water-in-water (w/w) emulsion gelation process using AlCl3 as cross-linking agent in a complete aqueous environment. The influence of different variables like total polymer concentration, gelation time and cross-linker concentration on in vitro physico-chemical characteristics and drug release rate in different media, swelling capacity,drug encapsulation efficiency was investigated. Drug loaded microbeads were analytically evaluated through Fourier transform infra-red (FTIR), X-ray diffraction (XRD) and differential scanning calorimetry,(DSC) analyses. Scanning electron microscopy (SEM) micrograph of the beads suggested the formation of spherical particles. FTIR analysis indicated that there is no drug-polymer interaction stable nature of the drug in the blend microbeads. DSC and XRD analysis revealed amorphous state of drug after encapsulation. The IPN microbeads give drug release in alkaline media and formulation showed non-Fickian type transport mechanism

Keywords: Interpenetrating polymer network (IPN), Microbeads, Carboxymethylation, Sodium carboxy methyl locust bean gum

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PH-PG0116

PREPARATION AND EVALUATION OF POLYHERBAL GEL FORMULATION

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Abstract:

In the present study, three medicinal plants *Psidium guajava Linn*, *Betel leaf* and *Moringa oleifera* having significant antioxidant and antimicrobial activity were selected to be formulated as polyherbal gels. The gels were prepared using the methanolic extract of *Psidium guajava Linn*, *Betel leaf* and *Moringa oleifera*. Polyherbal gel formulations were evaluated for its pH, appearance and homogeneity, viscosity and spreadability. Assessment of antioxidant activity was done using DPPH method and antimicrobial activity by Agar cup plate method. Individual and polyherbal gel of *Psidium guajava Linn*, *Betel leaf* and *Moringa oleifera* were found to possess antioxidant and antimicrobial activity. Polyherbal gel also showed synergistic effect as compared to individual gels.

Keywords: Polyherbal gel, Plant extract, Antioxidant and Antimicrobial activity.

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PH-PG0117

THERMOSENSITIVE POLYMER-BASED HERBAL IN-SITU GEL FOR GLAUCOMA MANAGEMENT

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Abstract:

Globally, Glaucoma is the second leading cause of blindness and irreversible vision loss. Elevated IOP (Intraocular Pressure) is not always the sign of glaucoma, It is the major risk factor for glaucomatous optic neuropathy. Various herbal formulations are available in the market for the treatment of glaucoma but they have certain disadvantages such as poor bioavailability and therapeutic response, less retention time, etc. These limitations can be overcome by using in situ gel forming ocular drug delivery system. The temperature sensitive in situ gel formulations, undergo phase transition from liquid to semisolid gel upon exposure to physiological eye temperature. These are free-flowing liquid at room temperature and easy to administer into the eye as drops. Thermosensitive polymers such as Poloxamer 407, Poloxamer 188 are the polymers that have an ability to respond to change in temperature as they are soluble in water at low temperature and insoluble in water at increasing temperature. This review mainly focuses on introduction to various approaches of in-situ gel formation, mechanism of drug release, various polymers used in the formulations, general methods of preparation like cold method and hot method various applications of in-situ gel systems and evaluation of in-situ gel.

Keywords: Glaucoma, In-situ gel, Thermosensitive Polymers, Herbal Formulation

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PH-PG0118

AN *IN VITRO* ARTIFICIAL BLADDER GLASS MODEL FOR STUDYING CATHETER-ASSOCIATED URINARY TRACT INFECTION (CAUTI) AND ASSOCIATED ANALYSIS OF BIOFILMS

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Abstract:

A Catheter if flexible tube inserted into Urinary Bladder through Urethra to drain urine. Catheter Associated Urinary Tract Infection (CAUTI) is Urinary Tract Infection (UTI) that is associated with Urinary Catheter,on frequent use it causes infections in entire urinary system. Catheter Associated Urinary Tract Infection (CAUTI) is the most common nosocomial infection in hospitals. As stated by NHSN, UTI"s represents the 4th commonest disease with an estimate of 93,300 UTI's in acute care hospitals. Substantially 75-80% UTIs are acquired in the hospitals through Urinary Catheters. Infection is due to certain pathogens of *Enterobacteriaceae* family (esp. *Proteus mirabilis*). This bacteria develop biofilm communities on catheter surface causing encrustation & blockage of catheter. The Urease enzyme present in the urine is the source of nitrogen where it releases ammonia leading to increase in pH & precipitating crystals of Carbonate apatite & Struvite. These crystals deposit as a biofilm on catheters causing blockage & painful urination subsequently affecting function of kidneys. coating the catheter with antimicrobial agent provided resistance to microbes causing UTI and prevented encrustation of the catheters. From the literature survey, it has been observed that there is no such*In Vitro* Artificial Bladder Model for Studying Catheter-Associated Urinary Tract Infection (CAUTI),to study the factors leading to Encrustation & Infection of catheter & also preventing them, to study ability of antimicrobial coating, to study role of pH in causing Urinary Tract Infections (UTIs).Therefore, we have proposed a unique *In-Vitro* model to check the antimicrobial activity of catheters coated with antimicrobial substances, to study CAUTI.

Keywords: CAUTI, Cathether coating, Glass Bladder Model

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PH-PG0119

MICROPARTICULATE SYSTEM-BASED HERBAL PREPARATION FOR ANAEMIA

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Abstract:

Anaemia is a condition affecting 1.6 billion of the world's population and develops when your body produces a lower-than-normal level of red blood cells. Hemoglobin level in males should be 13.2 to 16.6 g/dl and in females 11.6 – 15 g/dl. There are diverse herbal preparations in market that have complexities such as poor bioavailability, therapeutic response, etc. To overcome these side effects microemulsions can be an alternative. Microparticles are now one of the most widely used techniques for drug delivery as it has several advantages like improved bioavailability, reduced dosage frequency, limited fluctuation during therapeutic range, low toxic effect, etc. Microemulsion is a system that is thermodynamically stable isotropic liquid mixture of oil, water, and surfactant, frequently in combination with a cosurfactant. In contrast to ordinary emulsions, microemulsions form upon simple mixing of the components and do not require the high shear conditions generally used in the formation of ordinary emulsions. This review focuses on the combination of oil, surfactant, and cosurfactant, the mechanism of drug release, the method of preparation, various applications, and the evaluation of microemulsion. Surveillance study reveals that acceptance of herbal formulation is better than allopathic formulation for anaemia. This study will boast research in phytopharmacology.

Keywords: Anaemia, Hemoglobin, Microemulsion, Herbal formulation

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PH-PG0120

DEVELOPMENT OF STABILITY INDICATING ASSAY METHOD: A REVIEW

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Abstract:

The FDA and ICH recommendations suggest that stability testing data is required. Forced degradation experiments are useful in figuring out the process through which different pharmacological compounds degrade. These experiments can be used to identify the degradants that are created, and provide information on potential degradation pathways and by-products of the active components. The information in this review has been condensed to the greatest extent possible in order to provide knowledge about the various regulatory guidelines available for studies of forced degradation, techniques for carrying out stress studies under various accelerated conditions, stability and degraded products produced under various stress conditions, and the significance of stability studies.

Keywords: Stability Testing, Forced Degradation, Regulatory Guidelines, Stress

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PH-UG0101

pH RESPONSIVE OFLOXACIN LOADED CARBOMER BASED SOL-GEL COMPOSITE: FORMULATION AND EVALUATION FOR THE MANAGEMENT OF PERIODONTITIS

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Abstract:

Periodontal disease is also known as gum disease. It is a set of inflammatory conditions affecting the tissues surrounding the teeth. In its early stage, called gingivitis, the gums become swollen and red and may bleed. It is considered the main cause of tooth loss for adults worldwide. In its more serious form, the gums can pull away from the tooth, bone can be lost, and the teeth may loosen or fall out. Bad breath may also occur. As a curable measure a novel in situ gel is prepared. Novel in situ forming gel is introduced at the site that shows a greater potential to overcome one of the main practical obstacles associated with the treatment of local periodontitis by the mechanism of partial adhesion to the surrounding tissue, causing in the accidental expulsion of at least parts of the implant from patient's pockets, this results in large residence time of the system at the site of action and uncertainty of the final exposure to the drug. In situ gelling systems are liquid upon instillation and undergo a phase transition to form gel due to some stimuli responses such as temperature modulation, change in pH and presence of ions. Ofloxacin is considered as the API in the gelling system as it is a fluroquinolone antibiotic that is active against both Gram-positive and Gram-negative bacteria. In this system, gelling of the solution is triggered by change in pH. All pH sensitive polymers contain pendant acidic or basic groups that can either accept or release protons in response to changes in environmental pH. In case of weakly acidic group, swelling of hydrogel increases as the external pH increases, while decreases in case of weakly basic group. This study focuses on the formulation and evaluation of in situ gel for the treatment of periodontitis.

Keywords: Ofloxacin, In-situ gel, Periodontitis, pH sensitive, Gingivitis

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PH-UG0102

OVERVIEW OF MOUTH ULCER HEALING HERBAL GEL

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Abstract:

Mouth ulcer is an ulcer that occurs on mucous membrane of the oral cavity. These are painful round or oval sores that formed in the mouth, mainly inside the cheeks or lips. Acute and Excruciatingly painful disorder affecting non keratinised oral mucosa is known as recurrent apthous stomatitis. Ulcers are an open sore of the skin or mucous membrane characterized by removing of inflammed dead tissue. There are various synthetic drugs such as antibiotics, analgesic and topical application of the steroids which are available to treat mouth ulcer. The use of such over the counter drugs may give some serious side effects. As we know that herbal medicine is that most stay in pharmacy healthcare thanks to better culture, acceptability, better compatibility with natural object and lesser side effects and literature also revealed that there are various medicinal plants which can be utilized within the treatment of mouth ulcer. Herbal medicine have fewer side effects in comparison with synthetic medicine they are getting increase patient demand. These presentation gives the information about medicinal plants which can be used for treatment of mouth ulcer as drug. There are various formulation for the treatment of mouth ulcer such as ointment, gels, and patches by using the herbal ingredients.

Keywords: Herbal gel**,** Anti-ulcer gel**,** Herbal remedies**,** Mouth ulcer

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PH-UG0103

DEVELOPMENT AND EVALUATION OF HERBAL FORMULATION FOR IT'S ANTI-INFLAMMATORY ACTIVITY

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Abstract:

Acorus calamus is an indigenous traditional Indian medicinal plant use as an ingredient of various preparations. It is use for wide range of health alignments, neurological, gastrointestinal, respiratory, metabolic disorders and for management of inflammatory disorders. The current study focuses on phytochemical properties and investigation of therapeutically active compounds in ethanolic extract of rhizomes of plant acorus calamus L.The preliminary phytochemical study of extract unveiled the existence of terpenoids, flavonoids steroids, saponins and phenol based substances. Acorus calamus L is known to possess bioactive phytochemicals like phenyl propaniods such as α-asarone and β-asarone among which α-asarone is known to show anti-inflammatory activity. 80% ethanoic extract of rhizomes have shown anti-inflammatory activity. Chemical constituent of Acorus suppress pro inflammatory cytokines, interleukins and TNK-α and also inhibit the inflammatory immune cells. Curcumin found in curcuma longa also found to suppress the pathway involved in production of TNF-α and immune cells. Spectroscopic techniques are employed for analysis of plant extract. UV-VIS spectroscopy of medicinal plant acorus calamus showed the presence of phenolic compounds and flavonoids. As a result, UV-VIS profile showed the peaks at 306nm and 263nm. Thin layer chromatography was used to determine quality standard of drug and showed Rf value 0.66 in rhizome extract of Acorus Calamus. As per the compounds content of this plant, studies suggested that Acorus calamus L could be a potential herbal medicine against various disorders.

Keywords: *Acorus calamus*, Curcumin, Anti-inflammatory, UV-VIS spectroscopy.

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PH-UG0104

NANOFORMULATIN - BASED NATURAL ANTIVIRAL COMBINATION THERAPY FOR TRATMENT OF VIRAL DISEASES

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Abstract:

Nano formulation such as nanoemulsion, nanoparticles are very effective and safty dosage form as compared to conventional dosage form for viral infection treatment. Viral infections play an important role in human diseases, and recent outbreaks in the advent of globalization and ease of travel have underscored their prevention as a critical issue in safeguarding public health. Despite the progress made in immunization and drug development, many viruses lack preventive vaccines and efficient antiviral therapies, which are often beset by the generation of viral escape mutants. Thus, identifying novel antiviral drugs is of critical importance and natural products are an excellent source for such discoveries. In this mini-review, we summarize the antiviral effects reported for several natural products and herbal medicines, and purified natural products provide a rich resource for novel antiviral drug development. Identification of the antiviral mechanisms from these natural agents has shed light on where they interact with the viral life cycle, such as viral entry, replication, assembly, and release, as well as on the targeting of virus–host-specific interactions. In this brief report, we summarize the antiviral activities from several natural products and herbal medicines against some notable viral pathogens. Some natural drugs like fennel, garlic, peppernint, basil, sage, rosemery, ginger, cupea ignia etc.

Keywords: Nanoformulatin, Natural antiviral drugs, Viral infection

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PH-UG0105

3D PRINTING IN PHARMACEUTICAL AND MEDICAL APPLICATIONS

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Abstract:

A few of the distinctive production methods which can be presently followed by using the endeavour, the 3-D printing is an additive technique. It miles a procedure via which a three dimensional solid item, virtually of any shape, is generated starting from a digital model. Medical 3-D printing became once an ambitious pipe dream. However, time and funding made it actual. In recent times, the 3D printing era represents a large opportunity to assist pharmaceutical and scientific organizations to create greater specific drugs, allowing a rapid production of medical implants and converting the manner that medical doctors and surgeons plan tactics. This technology has multiple programs, and the fastest growing innovation within the scientific subject. 3-D printing technologies ought to permit on-call for production of merchandise with customized dosages, drug combinations, geometries and release characteristics. To create these products, five core techniques are currently applied: extrusion moulding printing (EMP), drop on powder (DOP) printing, selective laser sintering (SLS), stereolithography (SLA) and electrohydrodynamic 3D printing(EHD). The first 3D-printed pharmaceutical – Spritam® (a levetiracetam tablet) – was approved by the US Food and Drug Administration (FDA) in July 2015 and since then articles describing the 3D printing of pharmaceuticals have increased year on year. Valued at $175.19 million in 2020 and anticipated to grow to $285.17 million by 2025,the 3D-printed pharmaceuticals market represents a significant opportunity to those able to capitalize on its benefits and overcome its challenges.

Keywords: 3D printing, Bioprinting, Medical Devices

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PH-UG0106

SINGLE DOSE ANTACID CHEWING GUM

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Abstract:

Gums are portable medicine delivery devices. It is a potentially beneficial way to use the oral cavity to deliver medications either locally or systemically. As a method of medicine delivery, medicated chewing gum has become more and more popular over time. Several substances are now used in medicated chewing gum, such as fluoride to prevent dental cavities, chlorhexidine to disinfect the area, nicotine to help people quit smoking, aspirin to relieve pain, and caffeine to help people remain awake. Additionally, there are currently many chewing gum options designed to prevent cavities, treat xerostomia, and provide extra vitamins and minerals. The development and production of medicated chewing gum with specific qualities is now possible thanks to enhanced technology and expanded knowledge. The advantages, disadvantages, formulation, manufacturing process, limitations of the manufacturing process, factors affecting the release of the active substance, quality control tests for chewing gum, significance, stability study, and future trends in chewing gum drug delivery system are all nicely covered in the current review article.

Keywords: Antacid, Chewing Gum, Xerostomia

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PH-UG0107

DESIGN AND CHARACTERIZATION OF *ACACIA CONCINNA* AND *SAPINDUS MUKOROSSI* COLOADED DENTURE CLEANSER PASTE: ASSESSMENT OF ANTIMICROBIAL POTENTIAL IN PRE-USED DENTURES

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Abstract:

The present study was started with aim to formulate *Acacia concinna* and *Sapindus mukorossi* coloaded denture cleanser paste and evaluation of its effectiveness in pre-used dentures. The denture cleanser paste containing both powders was formulated and evaluated for cleaning potential, foamability and antimicrobial potential against *Staphylococcus aureus* and *Escherichia coli.* All batches of formulated paste showed good cleaning potential as revealed from removal of stains induced by permanent markers, highlighter and picric acid on eggshell. In addition to this, paste showed acceptable antibacterial potential against both microbial strains as well as in pre-used dentures. However, *in-vivo* studies are necessary to predict the effectiveness of formulated paste. Thus, formulated herbal denture cleanser could be viable alternative to commercially available denture cleansers.

Keywords: *Acacia concinna*, *Sapindus mukorossi*, Denture cleanser, Antimicrobial potential

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PH-UG0108

EMULGEL: A REVIEW

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Abstract:

Emulgels appear better & effective drug delivery system as compared to other topical drug delivery system. When gels and emulsions are used in combined form, the dosage forms are referred as Emulgels. Emulgels are either emulsion of oil in water or water in oil type, which is gelled by mixing it with gelling agent. Incorporation of emulsion into gel increases its stability & makes it a dual control release system. Due to lack of excess oily bases & insoluble excipients, it shows better drug release. Emulsions possess a certain degree of elegance and are easily washed off whenever desired. They also have a high ability to penetrate the skin. Emulgels for dermatological use have several favourable properties such as being thixotropic, greaseless, easily spreadable, easily removable, emollient, non-staining, water-soluble, longer shelf life, bio-friendly, transparent & pleasing appearance. Other important factor is to extend the drug release of even hydrophilic drugs by making w/o emulgel.emulgels are being used for the delivery of many drugs like analgesics, anti-inflammatory, anti-acne and anti-fungal. Hence, it is of great pharmacological importance and is relatively free of side effects. In comparison with the other semisolid preparations, the use of gels has been emerged both in cosmetics and pharmaceutical preparations. Emulgels appear better & effective drug delivery system. The comprehensive analysis of rheological and release properties will provide an insight into the potential usage of Emulgel formulation as drug delivery system.

Keywords: Emulgels, Rheology

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PH-UG0109

FORMULATION AND EVALUATION OF MUCOADHESIEVE DRUG DELIVERY SYSTEM

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Abstract:

Aim of the present study was to study the novel drug delivery system in which study of mucoadhesive drug delivery system which prolonged the residence time of the dosage form site of application. Buccal administration of drug provides a conventional route of administration for both systemic and local drug actions. In buccal drug delivery system mucoadhesion is the key elements so various mucoadhesive polymers have been utilized in different dosage form. This review also summarize the methodology in evaluating buccal films. All the formulation were examined for film thickness, weight variations, drug content, percentage moisture loss, percentage moisture absorption, surface pH, folding endurance, tensile strength, in vitro residence time, and in vitro release. FTIR studies were carried out for detection of drug polymer interactions.

Keywords: Mucoadhesive Buccal Film, Glipizide, Hydroxy polymethyl cellulose.

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PH-UG0110

EMULGEL APPROACH TO FORMULATION DEVELOPMENT

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Abstract:

Many advantages of gels a major limitation is in the delivery of hydrophobic drugs. So to overcome this limitation an emulsion based approach is being used so that even a hydrophobic therapeutic moiety can enjoy the unique properties of gels. When gels and emulsions are used in combined form the dosage form are referred as emulgel. In recent years, there has been great interest in the use of novel polymers. A unique aspect of dermatological pharmacology is the direct accessibility of the skin as a target organ for diagnosis and treatment. The combination of hydrophilic cornified cells in hydrophobic intercellular material provides a barrier to both hydrophilic and hydrophobic substances. Within the major group of semisolid preparations, the use of transparent gels has expanded both in cosmetics and in pharmaceutical preparations. Polymer can function as emulsifiers and thickeners because the gelling capacity of these compounds allows the formulation of stable emulsions and creams by decreasing surface and interfacial tension and at the same time increasing the viscosity of the aqueous phase. In fact, the presence of a gelling agent in the water phase converts a classical emulsion into an emulgel. These emulgel are having major advantages on novel vesicular systems as well as on conventional systems in various aspects. Various permeation enhancers can potentiate the effect, So emulgels can be used as better topical drug delivery systems over present systems.

Keywords: Emulgel, Topical Drug Delivery, Hydrophobic

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PH-UG0111

DEVELOPMENT OF SOLID ORGANIC SHAMPOO FORMULATION

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Abstract:

A recent advances in hair science and hair care technologies have been reported in literature claiming innovations and strategies for hair treatments and cosmetic products. For meeting the needs of a multitasking formulation, following the recent marketing-trend addressed to the "natural world", new challenges for cosmetic technology are aimed towards the research of natural ingredients, as well as new techniques for shampoo formulation. This work is focused on the development of a solid organic shampoo offering an innovative product within the organic cosmetics market. The shampoo tablet helps to support sustainable living with zero waste design. The tablet is free from SLS, sulphates, parabens, silicones, synthetic dyes and fragrances. Using the tablet is as simple as taking one into the shower, crushing it and creating a paste by adding water as needed. Suitable for all hair types, the tablets are travel friendly and powered by natural ingredients like Bramhi, Bhringraj, Amla, Aloe vera, Rose oil, etc. Nowadays, various skin and hair disorders such as itchy scalp, Seborrheic dermatitis, Alopecia, skin lesions, etc. are arising due to using synthetic shampoos, differing in lifestyle, changing food habits, stress level and varying environmental conditions. To overcome these problems an attempt is being made to formulate herbal shampoo tablet (Shampop) that is free from side effects and which make less damage to hairs by obtaining good outcome as it contains natural ingredients.

Keywords: Tablet Shampoo, Bramhi, Natural Ingredients, Paraben Free

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PH-UG0112

DESIGN AND CHARACTERIZATION OF NANOPHYTOSOMES CONTAINING *MUCUNA PRUREINS* HYDROALCOHOLIC EXTRACT

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Abstract:

Purpose In this study, the herbal formulation containing nanophytosomes of Mucuna prureins extract (MPE) was engineered to ameliorate its rate of drug release. Then, pure extract and optimized formulation showing higher entrapment efficiency were studied. The physicochemical characterization was carried out using particle size analysis and zeta potential, Fourier transformation infrared spectroscopy, differential scanning calorimetry, proton nuclear magnetic resonance, powder X-ray diffractometer, scanning electron microscopy, and solubility studies. Moreover, the stability of nanophytosomes was assessed by subjecting optimized formulation to freeze–thaw cycle stability testing. PXRD and SEM revealed a decrease in the crystalline nature of nanophytosomes. H-NMR, DSC, and FTIR asserted the formation of the phyto-phospholipids complex. The rate and extent of dissolution were also found enhanced and sustained in nanophytosomes as compared to pure extract. Thus, nanophytosomes drug delivery could be the best strategy to improve physicochemical properties of extract and thus could be exploited for the extracts having poor solubility, poor permeability, and poor stability.

Keywords: Nanophytosomes, *Mucuna prureins* extract, Physicochemical, Characterization.

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PH-UG0113

COLONIC-TARGETED DRUG DELIVERY SYSTEMS: DESIGN TRENDS AND APPROACHES

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Abstract:

Colon-specific drug delivery systems (CDDS) are preferred for the treatment of a variety of local disorders notably colon cancer, Crohn's disease, irritable bowel syndrome, ulcerative colitis. There are various therapeutic benefits of directing certain medications particularly at the colon. Medications that are digested by pancreatic enzymes or destroyed by stomach acid are slightly affected in the colon, and persistent colonic release of drugs is possible. If drugs like proteins and peptides—which are known to disintegrate in the excessive gastric pH—are delivered to the colon intact, colonic mucosa can absorb them and absorb them systemically. Colon-targeted medication delivery systems have been developed using a variety of formulation strategies. These methods involve the use of formulation components that interact with one or more aspects of gastrointestinal (GI) physiology, such as the presence of colonic bacteria, enzymes, and the differential in pH along the GI tract.

Keywords: CDDS, Crohn's Disease, Irritable Bowel Syndrome

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PH-DP0101

ARTIFICIAL INTELLIGENCE IN MEDICINAL AND PHARMACEUTICAL SCIENCES AND NDDS

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Abstract:

Artificial intelligence has the potential to revolutionize the field of medicine and pharmaceutical sciences AI has the revolutionary use and contribution in New drug delivery system (NDDS) AI is perception of human intelligence by computer or machine. AI provides accuracy, result, precision and lower labor work in pharma field. AI is applicable in development of society, probing, upheaval, and production process in pharm afield.

Keywords: Artificial, Intelligence

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PH-DP0102

CURRENT UPDATES ON TRANSCELLULAR BRAIN DRUG DELIVERY

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Abstract:

It is well known that the presence of a blood–brain barrier (BBB) makes drug delivery to the brain more challenging. There are various mechanistic routes through which therapeutic molecules travel and deliver the drug across the BBB. Among all the routes, the transcellular route is widely explored to deliver therapeutics. Advances in nanotechnology have encouraged scientists to develop novel formulations for brain drug delivery. In this article, we have broadly discussed the BBB as a limitation for brain drug delivery and ways to solve it using novel techniques such as nanomedicine, nose-to-brain drug delivery, and peptide as a drug delivery carrier. In addition, the article will help to understand the different factors governing the permeability of the BBB, as well as various formulation-related factors and the body clearance of the drug delivered into the brain.

Keywords: blood–brain barrier, Nanomedicine

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PH-DP0103

NANOMEDICINE IN WEARABLE DEVICES

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Abstract:

Wearable devices are becoming widespread in a wide range of applications, from healthcare to biomedical monitoring systems, which enable continuous measurement of critical biomarkers for medical diagnostics, physiological health monitoring and evaluation. Especially as the elderly population grows globally, various chronic and acute diseases become increasingly important, and the medical industry is changing dramatically due to the need for point-of-care (POC) diagnosis and real-time monitoring of long-term health conditions. Wearable devices have evolved gradually in the form of accessories, integrated clothing, body attachments and body inserts. Over the past few decades, the tremendous development of electronics, biocompatible materials and nanomaterials has resulted in the development of implantable devices that enable the diagnosis and prognosis through small sensors and biomedical devices, and greatly improve the quality and efficacy of medical services. This article summarizes the wearable devices that have been developed to date, and provides a review of their clinical applications. We will also discuss the technical barriers and challenges in the development of wearable devices, and discuss future prospects on wearable biosensors for prevention, personalized medicine and real-time health monitoring.

Keywords: Wearable devices, Point-of-care, Nanomaterials

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STRUCTURAL CHARACTERISATION OF IMPURITIES OF SOME SELECTED ANTI-DIABETIC DRUGS

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Abstract:

Diabetic kidney disease (DKD) is the leading cause of end-stage renal disease (ESRD) worldwide. SGLT2 inhibitors are clinically effective in halting DKD progression. Sodium-glucose co-transporter 2 (SGLT2) inhibitors, initially developed as a novel class of anti-hyperglycaemic drugs, have been shown to significantly improve metabolic indicators and protect the kidneys and heart of patients with or without type 2 diabetes mellites. A simple, precise, accurate, specific, linear, rugged and robust method was developed and validated for the estimation of impurities of SGLT-2 Inhibitors class of drugs used to treat Diabetes in Patients. Developed method also applied in its respective marketed formulations to check impurities. Stress degradation studies also applied to check impurities in APIs as well as marketed formulation. All the degradation Impurities are observed and well separated in same developed method. Unknown impurity formed during stability studies was isolated using preparative HPLC and structure was characterized by NMR and Mass spectroscopy studies.

Keywords: Diabetic Kidney Disease, Inhibitors

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SYNTHESIS AND MOLECULAR MODELLING STUDIES OF NOVEL PYRROLE SCAFFOLDS AS ACTIVE INHIBITORS OF ENOYL ACP REDUCTASE (INHA) AND *MYCOBACTERIUM TUBERCULOSIS*

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Abstract:

In this study, new series of 4-(1*H*-pyrrol-1-yl) benzohydrazide schiff bases 6(a-h) and 4-(2,5-dimethyl-1*H*-pyrrol-1-yl) benzohydrazide schiff bases 7(a-h) were prepared and new heterocycles underwent thorough characterization, evaluation for antibacterial activity, and some of them underwent further testing for *in vitro* inhibition of enoyl ACP reductase and DHFR enzymes. The majority of the synthesized molecules exhibited appreciable action against DHFR and enoyl ACP reductase enzymes. Some of the synthesised compounds also have shown strong antibacterial and antitubercular properties. In order to determine the potential mode of action of the synthesised compounds, a molecular docking investigation was conducted. The results revealed binding interactions with both the dihydrofolate reductase and enoyl ACP reductase active sites. These molecules represent excellent future therapeutic possibilities with potential uses in the biological and medical sciences due to the compounds under investigation's very pronounced biological activity.

Keywords: Hydrazide, Pyrrole, Schiff, Tuberculosis

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PCHEM-PHD0203

DESIGN, DEVELOPMENT AND EVALUATION OF STABLE VALSARTAN NANOCRYSTALS WITH CHITOSAN USING MICROWAVE-ASSISTED GRINDING NANOTECHNOLOGY

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Abstract:

The main causes of the biopharmaceutical and financial strain on pharmaceutical industry and consequently society are the solubility and stability issues with API. In the current study, chitosan and neusiline US2 were used to prepare nanoparticles of Valsartan, a BCS II drug, in order to produce stable nanocrystals. This novel technique would then improve bioavailability by improving solubility and stability by varying crystallinity. For the formation of ternary complexes, a 32 level full factorial design with Design Expert Software version 12 had been used. Among all batches, the optimized batch exhibited a 2.89 times greater cumulative drug release and a 3.2 times greater saturation solubility than pure valsartan. The compatibility with excipients, change in enthalpy, crystallinity, and nano size range were confirmed by study of FTIR, DSC, XRD and particle analysis. The physical interactions found in the FTIR and NMR data further supported the intermolecular hydrogen bond interaction. A confirmed stable product was shown by the accelerated stability study as a result of the absence of any FTIR interactions and drug content variation. Therefore, MAGN is a novel approach to increase bioavailability with the potential to lessen the burden of dose, dosing frequency, and cost.

Keywords: Valsartan, FTIR, NMR

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PCHEM-PG0201

DRUG REPURPOSING AND SYNTHESIS OF ISONIAZID DERIVATIVES AS ANTICANCER AGENTS

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Abstract:

A series of INH derivative compounds were synthesized for repurposing of anticancer drugs. The synthesized compounds (3a-f) were optimized, repurposed, evaluated and characterized by FTIR. Most of the compounds exhibited moderate to good activity. The present study demonstrated that the compounds (3b) and (3e) derivatives have shown promising anticancer activities as compared to INH and standard Doxorubicin. Furthermore, molecular docking simulation studies were carried out in order to know the better hypothetical binding interactions at Candida antarctica Lipase B domain using Schrodinger software. Hence, these compounds can be used for the development of newer anticancer drugs.

Keywords: Anticancer agents, Isoniazid, Drug repurposing

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PCHEM-PG0202

DIFFERENT APPROACHES FOR SIMULTANEOUS ESTIMATION OF CINNARIZINE AND DIMENHYDRINATE IN BINARY MIXTURE INCLUDING THE APPLICATION IN THEIR FIXED DOSE COMBINATION

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Abstract:

The aim of the current research work was to develop novel, accurate and precise UV spectrophotometric methods for quantitative estimation of cinnarizine (CIN) and dimenhydrinate (DIM) in binary mixture and their fixed dose combination using methanol as solvent. The principle employed was based on ratio subtraction coupled with constant multiplication (RS-CM) and area under curve (AUC) approach. In RS-CM, concentration of 3 µg/mL (CIN) and 6 µg/mL (DIM) were selected as divisor concentration to obtain their ratio spectra; absorbance was measured at 251 nm for CIN and 277 nm for DIM. In AUC, measurements were carried out at wavelength range of 241-261 nm for CIN and 267-287 nm for DIM. Validation of methods were carried out as per ICH guidelines Q2(R1). For both the methods, linearity was established over concentration range of 3-15 µg/mL (CIN) and 6-30 µg/mL (DIM). Percentage relative standard deviation value of less than 2% for intra-day and inter-day precision confirmed the precision of the methods. Accuracy of the methods were found to be in range of 98-102%. The developed methods are suitable and can be applied for routine quality control analysis of CIN and DIM in the marketed formulations.

Keywords: Cinnarizine, Dimenhydrinate, ICH Q2(R1)

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PCHEM-PG0203

APPLICATION OF DIFFERENT UV SPECTROPHOTOMETRIC METHODS FOR SIMULTANEOUS DETERMINATION OF MONTELUKAST SODIUM AND FEXOFENADINE HYDROCHLORIDE IN PHARMACEUTICAL PREPARATION

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Abstract:

Two novel UV spectrophotometric methods were developed using methanol as a solvent for simultaneous determination of Montelukast sodium (MONT) and Fexofenadine hydrochloride (FEXO) in binary mixtures and pharmaceutical preparation. The first method was Ratio subtraction combined with extended ratio subtraction (RS-ERS) in which by selecting the proper divisor concentration, ratio spectra of MONT and FEXO were obtained and absorbance was measured at 282 nm and 218 nm respectively. The second method is Ratio difference (RD) UV spectrophotometric method in which the amplitude difference between two selected wavelengths on the ratio spectra were recorded and used for estimation of FEXO and MONT at ($\Delta P_{246.01nm - 259.07\ nm}$) and ($\Delta P_{215.03nm\ -246.01nm}$) respectively .All methods were validated as per ICH Q2 (R1) guidelines .Linearity was shown over the concentration range of (3-7 µg/mL) for MONT and (36-84 µg/mL) for FEXO for both proposed methods. The suggested UV spectrophotometric methods are considered to be simple, accurate, precise, sensitive and could be easily applied in quality control laboratories instead of LC methods for simultaneous estimation of MONT and FEXO.

Keywords: Montelukast Sodium, Fexofenadine Hydrochloride, Ratio Difference (RD), ICH Q2 (R1)

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PCHEM-PG0204

QUANTITATIVE DETERMINATION OF MONTELUKAST SODIUM AND BILASTINE USING DIFFERENT VALIDATED UV SPECTROPHOTOMETRIC METHODS

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Abstract:

Three novel, rapid, simple, precise and accurate UV spectrophotometric methods were developed for quantitative determination of Montelukast sodium (MONT) and Bilastine (BILA) in binary mixtures and pharmaceutical dosage form. Method A is the Area Under Curve (AUC) UV spectrophotometric method in which the area under curve in the wavelength ranges of 277-287 nm and 247-257 nm were used for the determination of MONT and BILA respectively. Method B is Ratio Difference (RD) spectrophotometric method in which the ratio spectra's amplitude difference between the two chosen wavelengths are recorded and used to estimate the ratio of BILA and MONT at (ΔP252.28 nm - 264.21 nm) and (ΔP 252.28nm - 234.04 nm) respectively. Method C is Ratio subtraction coupled with constant multiplication (RSCM), where by selecting the proper divisor concentration, ratio spectra of MONT and BILA were obtained and absorbance was measured at 282 nm and 252 nm respectively. These methods were validated as per ICH Q2 (R1) guideline with respect to linearity, accuracy, precision and specificity and can be used for routine quality control analysis of MONT and BILA in their dosage forms.

Keywords: Montelukast Sodium, Bilastine, Area Under Curve, ICH Q2 (R1)

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PCHEM-PG0205

ADVANCED SPECTROPHOTOMETRIC METHODS FOR QUANTITATIVE ESTIMATION OF FIXED DOSE COMBINATION USING UV VISIBLE SPECTROPHOTOMETER

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Abstract:

Three specific, accurate and precise spectrophotometric methods were developed for simultaneous estimation of Amlodipine and Lisinopril .Methanolic solutions of both the drugs were used during experimentation. The quantitative estimation of Amlodipine and Lisinopril was carried out using Ratio subtraction coupled with extended ratio subtraction (RS-ERS), Ratio subtraction coupled with constant multiplication (RS-CM) and Ratio difference (RD) approaches . The ratio spectra were recorded for both Amlodipine and Lisinopril for RS-ERS, RD and RS-CM method. The developed methods were validated as per ICH guidelines Q2 (R1). The linear relationship was observed in the concentration range of 15-35µg/mL for Amlodipine and 15-35µg/mL for Lisinopril (r^2=0.999). The proposed methods are simple, accurate and precise (RSD < 2%). The percent recoveries were found in the range (98-102%). The specificity of the developed methods was investigated by analyzing laboratory prepared mixtures and pharmaceutical formulations containing the cited drugs. These methods can be applied successfully for the analysis of the marketed formulations.

Keywords: Amlodipine, Lisinopril, ICH Q2 (R1) guideline.

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PCHEM-PG0206

DEVELOPMENT OF NOVEL SPECTROPHOTOMETRIC METHODS FOR QUANTIFICATION OF RABEPRAZOLE AND DOMPERIDONE IN FIXED DOSE COMBINATION

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Abstract:

Simultaneous quantitative estimation of Rabeprazole and Domperidone was carried out using Ratio subtraction coupled with extended ratio subtraction (RS-ERS), Ratio subtraction coupled with constant multiplication (RS-CM) and Ratio difference (RD) approaches. The ratio spectra were obtained by dividing the mixture by Rabeprazole (4µg/mL) and Domperidone (6µg/mL) as a divisor for RS-ERS, RD and RS-CM method. The developed methods were validated as per ICH guidelines Q2 (R1). The response of absorbance verses concentration was linear in the concentration range of 4-12µg/mL for Rabeprazole and 6-18µg/mL for Domperidone (r2=0.999). The proposed methods were specific, accurate and precise (RSD < 2%). The percent recoveries were found in the range (98-102%). The suitability of the developed methods was investigated by analyzing laboratory prepared mixtures and pharmaceutical formulations containing the cited drugs. These methods can be applied successfully for the analysis of the marketed formulations.

Keywords: Rabeprazole, Domperidone, ICH Q2 (R1)

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DEVELOPMENT OF NOVEL UV SPECTROPHOTOMETRIC METHOD FOR SIMULTANEOUS QUANTIFICATION OF TELMISARTAN AND AZELNIDIPINE

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Abstract:

A simple, rapid, accurate, precise and economical UV spectrophotometric method for the simultaneous determination of Telmisartan (TEL) and Azelnidipine (AZE) in a combined tablet dosage form has been developed. The method involves determination using simultaneous equation method at 297.6nm (λmax of TEL) and 258.6nm (λmax of AZE) as two analytical wavelengths using Methanol: Distilled water (50: 50 v/v) as the solvent. The method was validated as per ICH Q2 (R1) guideline. Both the drugs showed linear response with correlation coefficient 0.999(TEL) and 0.998(AZE). Precision studies were carried out by Intraday and Inter-day repeatability and reproducibility and % RSD was calculated (less than 2). Accuracy was assessed by spiking at three different concentration levels i.e.,80%, 100% and 120%. The proposed method is simple, precise and accurate and could be successfully employed in routine quality control analysis of the pharmaceutical formulation.

Keywords: Telmisartan, Azelnidipine, Simultaneous equation method, ICH Q2 (R1)

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PCHEM-PG0208

SIMULTANEOUS ESTIMATION OF AMLODIPINE BESYLATE AND BISOPROLOL FUMARATE IN A BINARY MIXTURE USING UV SPECTROPHOTOMETRIC METHOD

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Abstract:

The objective of present research work was to develop a simple, precise and accurate UV spectrophotometric method for quantitative estimation of amlodipine besylate (AMLO) and bisoprolol fumarate (BISO) in a binary mixture. The method employed was based on area under curve (AUC) approach. All the solutions were prepared using methanol as a solvent. The measurement of AUC was carried out at a wavelength range of 349-369 nm and 227-247 nm for AMLO and BISO respectively. The method was validated in accordance with ICH guidelines Q2(R1). Linearity range was established for AMLO at a concentration range of 10-30 µg/mL (r^2 = 0.999) and for BISO, it was 10-30 µg/mL (r^2 = 0.998). Percentage relative standard deviation (% RSD) value of less than 2% for intra-day and inter-day precision was obtained confirming the precision of the method. Accuracy of the method was found to be in the range of 98 - 102 %. The developed method can used for routine analysis of amlodipine besylate and bisoprolol fumarate in marketed pharmaceutical dosage forms.

Keywords: Amlodipine Besylate, Bisoprolol Fumarate, Area under curve, ICH Q2 (R1)

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PCHEM-PG0209

ANABOLIC ANDROGENIC STEROIDS: USEFUL BUT HARMFUL

Parab O. P., Subhedar D. N., Rane D. U., Warang V. S., Giram J. P., Mokashi P., Barse R. K., Jagtap V. A.

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Abstract:

Anabolic androgenic steroids (AAS) are a large group of molecules including endogenously produced androgens, such as testosterone, as well as synthetically manufactured derivatives. AAS is widely use due their ability to improve muscle growth for aesthetic purposes & athletes' performance, minimizing the androgenic effects. They have side effects, involving all organs, tissues & body functions, especially long-term toxicity to cardiovascular system & reproductive system. Therefore, the abuse of anabolic steroids is considered as a public health issue.There are various pharmacological & psychological treatments for the AAS addicted peoples. To avoid this hazard the anabolic steroids should be use in proper safe dose according directions of physician. Also, its use can be avoided by taking balanced healthy diet for building muscle mass & body growth which is the main motive behind its use. To avoid this abuse, it is necessary to make appropriate rules & regulations & strictly follow them. Also, each & every health professional, especially clinician & family doctors should be aware of AAS adverse effects. Information& education are fundamental tools for AAS misuse prevention.

Keywords: Androgen, Testosterone, Addiction, Adverse effect

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IN-SILICO SCREENING AND IDENTIFICATION OF SOME BIOFLAVONOIDS AGAINST MAIN PROTEASE ENZYME OF COVID-19

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Abstract:

Drug repurposing of existing medicinal agents from natural and synthetic origin is very much essential and important. The 2019-novel coronavirus (nCoV) is a major source of disaster in the 21th century. To screen and assess the selected bioflavonoids from medicinal plants as potential Coronaviruses main protease (Mpro) inhibitors using molecular docking studies. We have investigated several bioflavonoids which include apigenin, luteolin, naringin resveratol and rutin. Nelfinavir and lopinavir were used as standard antiviral drugs for comparison. Mpro was docked with selected compounds using PyRx 0.8 and docking was analysed by PyRx 0.8 and Biovia Discovery Studio 2019. The binding energies obtained from the docking of 6LU7 with nelfinavir, lopinavir, apigenin, luteolin, naringin, resveratol and rutin were found to be -8.3, -8.0, -7.8, -7.4, -7.8, -6.9 and -9 kcal/mol, respectively. From the binding energy calculations we can conclude that nelfinavir and lopinavir may represent potential treatment options and apigenin, luteolin, naringin, resveratol and rutin found to possess the best inhibitors of COVID-19 Main Protease.

Keywords: Drug repurposing, COVID-19, Binding Energy, 6LU7, Antiviral, Rutin.

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PCHEM-PG0211

VIRTUAL SCREENING OF SELECTED BIOACTIVE COMPOUNDS FROM MUNTINGIA CALABURA FOR ITS ANTI-CANCER ACTIVITY AGAINST COLORECTAL CANCER

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Abstract:

Medicinal plants are well known for treatment and management of different types of cancers. *Muntingia calabura* is one of the well-known medicinal plants belongs to the family Muntingiacae reported for its anticancer effect. The main objectives of the proposed research work are to determine the physicochemical and pharmacokinetic properties of selected phytochemical of *Muntingia calabura* and to screen and identify potential candidates as lead compounds against targets of Colorectal cancer using computer aided techniques. The bioactive compounds from *Muntingia calabura* were screened using computational tools to determine its physicochemical and pharmacokinetic properties with the help of several softwares and serves such as PubChem database, Molsoft software and Schrodinger's software via Maestro 12.4 interface. The molecular docking of selected phytochemicals were carried out using Schrodinger's software against various targets of colorectal cancer. The results of proposed investigation revealed that most of the phytochemicals obeyed Lipinski's RO5 and fall within recommended ranges of physicochemical and pharmacokinetic properties. The molecular docking studies showed good number of bioactive compounds have affinity against various targets of colorectal cancer. The computational screening studies concludes that the screened phytochemicals prove to be potent drug candidates with good membrane permeability and bioavailability. The molecular docking studies showed good number of bioactive compounds have affinity against various targets of colorectal cancer and can be explored further for isolation and *in-vitro, in vivo* evaluation.

Keywords: *Muntingia calabura*, Colorectal Cancer, Molsoft, Docking, Schrodinger

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PCHEM-PG0212

UV SPECTROPHOTOMETRIC DETERMINATION OF ROSUVASTATIN CALCIUM AND EZETIMIBE TABLET IP IN A BULK DRUG AND PHARMACEUTICAL FORMULATION USING SIMULTANEOUS EQUATION METHOD

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Abstract:

This article focuses on the UV spectrophotometric estimation of a drug combination i .e Rosuvastatin calcium and Ezetimibe , which is used in the treatment of hypercholesterolemia and hyperlipidemia. Rosuvastatin is a HMG-CoA inhibitor while Ezetimibe is an intestinal cholesterol inhibitor. The drug obeyed the Beer's law and showed good correlation. Acetonitrile was used as a solvent. A simple, economic and precise spectrophotometric method was developed for simultaneous estimation of Rosuvastatin calcium and Ezetimibe in a combined dosage form.

Keywords: Rosuvastatin Calcium, Ezetimibe, λmax

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PCHEM-UG0201

MICROWAVE ASSISTED SYNTHESIS OF ORGANIC COMPOUNDS

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Abstract:

Microwave-assisted synthesis is a branch of green chemistry. Microwave-assisted synthesis has gained much attention in recent years. Microwave irradiation-assisted chemical transformations are pollution free, eco-friendly and offer high yields together with simplicity in processing and handling. The basic aim of our study is to compare the synthesis of Compounds by conventional and Microwave assisted method. Conventional method of organic synthesis usually requires longer heating time, tedious apparatus setup which result in higher cost of process and the excessive use of solvents or reagents lead to environmental pollution. Microwave assisted synthesis is a green tool for organic synthesis providing clean, economic, enhanced reaction rate and percentage yields. The microwave method was found to be highly efficient where the reaction time reduces from hours to minutes when compared to the conventional organic synthesis. It also involves replacement of traditional methods of heating with that of modern methods of heating such as microwave radiations which helped to reduce carbon footprint as low as possible. The rate of reaction of microwave assisted reaction increases by 10-1000 times and the yield is found to be increased by 10-40 percent than the conventional method. Study was done by comparing reaction time and percentage yield in both methods. It is observed that the microwave assisted method is greener, cheaper, more convenient method than conventional method.

Keywords: Comparison, Conventional method, Microwave Method, Green Chemistry

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PCHEM-UG0202

QBD APPROCH BASED DEVELOPMENT OF VALIDATED ANALYTICAL METHOD FOR ESTIMATION OF CLARITHROMYCIN BY RP-HPLC

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Abstract:

Based on QbD, a chromatographic technique for estimation of clarithromycin from bulk was developed and validated. The method for analysis of clarithromycin is obtained by QbD trial optimization. For the QbD approach Mobile phase and flow rate are chosen as factors. While two responses were taken i.e. retention time and the peak area, the research was carried out using Design of Expert software. Response 1 RT outcomes are F- Value 145.44, P-Value less than 0.05, predicted & adjusted R2 are 0.9570 & 0.9763 respectively. Response 2 Peak Area outcomes are F- Value72.09, P-Value less than 0.05, predicted & adjusted R2 are 0.8777 & 0.0.9104 respectively. The optimized batch was carried out by HPLC gradient system with auto-injector using UV (DAD) detector which had C18 quaternary gradient column at room temperature. The mobile phase was ACN: Water (09:91) with a flow rate of 0.9 ml/min. The sample was detected at a wavelength 209nm and the sample size was 20µl. According to ICH guidelines, the purpose of method validation is to demonstrate the acceptability of an analytical technique for its intended purpose. Linearity regression (0.999) which obtained a parallel calibration curve, repeatability (RSD%-0.26) and LOD & LOQ were found at 9.206µg/ml & 27.898 µg/ml respectively. Acid, base, H2O2, and neutral were used in the stress degradation investigation. The degradation with acid (5.08%), base (96%), H2O2 (32.14%), and neutral (3.42%) were found. The developed approach is used to analyze clarithromycin in pharmaceutical formulations and is unique and accurate.

Keywords: RP-HPLC, QBD, Clarithromycin, Design of Expert

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PCHEM-UG0203

CHEMICAL DEGRADATION OF METFORMIN INDIAN BRANDS

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Abstract:

There are several different brands available for metformin as it is the most prescribed oral antihyperglycemic agent that is used for Type-II Diabetes mellitus. The objective of this study develop the degradation studies of different brands of metformin HCL500 mg. Metformin was subjected to different stress conditions as per (ICH) International Conference on Harmonization guidelines. A UV spectroscopic method was developed for analysis of the drug in the presence of the degradation products. Methanol and distilled water were used as solvents. The Amount of degraded drug was calculated by taking absorbance at 237 nm. According to the assay limit of USP Specified that the content should not be less than 95% and not more than 105% of labelled amount. Brand A, C and E are degraded after heating. Brand A,B,C, and D are degraded by UV light exposure .On basic pH brand A, And C showed degradation after the addition of 0.1 N NaOH while other brands does not degraded as base has No impact on metformin concentration and the original pH of metformin HCL was 6.68 before addition of acid and Base. On addition of 0.1 N HCL all brands showed heavy degradation. After 15 days the time affects and degrades the metformin concentration of all brands. The method was found to be simple and less time consuming and cost Effective. Hence this method can be successfully used to study stress degradation behavior of metformin in small Industry where high end instruments are not available.

Keywords: Chemical Degradation, Metformin, HPLC, UV Spectroscopy

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PCHEM-UG0204

DESIGN OF MULTIPLE TARGET MOLECULES FOR COMBATING DIABETIC COMPLICATIONS

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Abstract:

Diabetes and diabetic complications have become a major health threat which needs to be managed on daily basis. Drug entities belonging to Aldose reductase inhibitors, DPP-4 inhibitors and thiazolidinediones classes implicated in controlling the diabetic complication. But due to limited number of the candidates and related serious kinetic and dynamic complications observed in current drug belonging these three categories, in this study we proceeded for a number of rational approaches for the design of new entities with multiple target approach. Molecular modelling and docking study, is a sophisticated approach which gives maximum input for good lead design and optimization. In the present study we have selected ALR2, DPPIV Inhibitors and PPAR γ as a targeted enzymes to combat Diabetic complications.

Keywords: Hyperglycemia, Aldose Reductase Inhibitors, Molecular docking

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PCHEM-UG0205

NANOPARTICLES AS TOOLS AND MACROPHAGES AS TARGETS IN CANCER THERAPY

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Abstract:

With the development of nanotechnology significant progress has been made in the design and manufacturers of nanoparticles for use of clinical treatments. Recent increases in our understanding of the central role of macrophages in the context of inflammation and cancer have reinvigorated interest in microphages as drug targets.

Keywords: Nanoparticles, Microphages

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PCHEM-UG0206

DESIGN AND MOLECULAR DOCKING STUDIES OF SUBSTITUTED BENZAMINDE DERIVATIVES AS GLUCOKINASE ACTIVATOR

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Abstract:

Diabetes mellitus especially type-2 a metabolic disorder often caused due to inadequate secretion of insulin by pancreas resulting in hyperglycaemia. Medicinal chemists are still engaged in the development of newer targets and scaffolds to ex- hibitantihyperglycaemic activity with minimum side effects. The enzyme *glucokinase* (GK) was identified as an outstanding drug receptor for developing anti-diabetic agents. *Glucokinase* activators not only lowers blood glucose concentrations by enhancing glucose uptake in the liver but also increases insulin secretion from pancreatic beta cells which makes it a promising molecular target for antidiabetic therapy. Acquisition of the facts of GK enzyme and other parameters, several small molecules were designed and explored targeting GK to activate the allosteric site of protein.Despite of the several scaffold reported, the main focus is on the Benzamide motif owing to its orientation, structural binding, and interactions in the allosteric site. Herein, we report the design and molecular docking of N-substituted Benzamide derivatives. Ligands b21,b22,b23 and b24 shows better interaction with protein 1V4S. It is suggested that these structures needs to synthesize and evaluate for GK activation.

Keywords: Glucokinase, Molecular Docking, Benzamide

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PCHEM-UG0207

METHOD DEVELOPMENT, VALIDATION STUDY AND DEGREDATION PROFILING OF REPAGLINIDE AND METFORMIN IN COMBINED DOSAGE FORM

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Abstract:

A simple, quick, efficient, and reproducible method for determining metformin HCl and repaglinide in combination dosage form has been developed and validated. The estimation was performed using a C18 waters column with an id (250×4.6, 5 µm) length, a mobile phase of methanol ,and 0.05 percent OPA in a ratio of (81:19), a pH-3 flow rate of 0.8 ml/min, and an ultraviolet detection wavelength of 238 nm. The run times for these two drugs, metformin and repaglinide, were 2 minutes and 4 minutes, respectively. The method was validated as a final verification of the development of the procedure with respect to precision, linearity, accuracy, ruggedness, and robustness. The validated method was successfully used on the pharmaceutical dosage form that is available commercially, producing very good and reproducible results.

Keywords: Metformin, Repaglinide, RP- HPLC.

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PCHEM-DP0201

GREEN CHEMISTRY: A NEW APPROACH TOWARDS SCIENCE

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Abstract:

Green chemistry is the new and rapid emerging branch of chemistry dealing with reduction of harmful and toxic chemicals in the synthesis and replacing it with ecofriendly methods. A need of green chemistry practice is highly demanding and the adherence to the 12 principle of green chemistry concept is growing rapidly. The green chemistry revolution is providing an enormous number of challenges to those who practice chemistry in industry, education and research along with an equal number of opportunities to discover and apply new chemistry, to improve the economics of chemical manufacturing and to enhance the much tarnished image of chemistry. Green actions always acts louder than the green words. The present poster reviews the overview of the green chemistry, its principles and selected examples of implementation of green chemistry principles in everyday life.

Keywords: Green Chemistry, Eco-friendly, Environment, Conventional, Challenges, Organic solvent

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PCHEM-DP0202

GREEN SYNTHESIS OF SILVER NANOPARTICLES VIA PLANT EXTRACTS: BEGINNING A NEW ERA IN CANCER THERANOSTICS

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Abstract:

With the development of the latest technologies, scientists are looking to design novel strategies for the treatment and diagnosis of cancer. Advances in medicinal plant research and nanotechnology have attracted many researchers to the green synthesis of metallic nanoparticles due to its several advantages over conventional synthesis (simple, fast, energy efficient, one pot processes, safer, economical and biocompatibility). Medicinally active plants have proven to be the best reservoirs of diverse phytochemicals for the synthesis of biogenic silver nanoparticles (AgNPs). In this review, we discuss mechanistic advances in the synthesis and optimization of AgNPs from plant extracts. Moreover, we have thoroughly discussed the recent developments and milestones achieved in the use of biogenic AgNPs as cancer theranostic agents and their proposed mechanism of action. Anticipating all of the challenges, we hope that biogenic AgNPs may become a potential cancer theranostic agent in the near future.

Keywords: Anticancer Activity, Biogenic Nanoparticles, Green Chemistry

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PCOL-PHD0301

METHODS AND TOOLS FOR DETECTING INAPPROPRIATE PRESCRIBING IN ELDERLY INDIVIDUALS

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Abstract:

Inappropriate prescribing in the elderly population refers to the use of medications that are not indicated, are at excessive doses, or have a high risk of causing adverse effects in older individuals. It is important for healthcare providers to regularly review the medications of elderly patients to minimize the risk of inappropriate prescribing. Healthcare professionals can use various available tools to review the appropriateness of medications. There are several methods and tools available to detect inappropriate prescribing in elderly individuals, including: Beers Criteria: A widely used list of potentially inappropriate medications for older adults, which includes medications that may cause adverse effects, interact with other medications, or be contraindicated for use in older adults. STOPP/START criteria: A similar tool to the Beers Criteria, which also assesses for potential drug-drug and drug-disease interactions. Tools such as the Drug Burden Index and the Medication Appropriateness Index can be used to evaluate a patient's medication regimen for potential problems and make recommendations for improvement. It's important to note that these methods and tools should be used in conjunction with clinical judgment, and any potential issues with prescribing should be evaluated on a case-by-case basis.

Keywords: Inappropriate Prescribing, Elderly, Screening tools, Medication review

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PCOL-UG0301

POTENTIAL ANTIFUNGAL ACTIVITY OF INDIAN BUCH PLANT: *ACORUS CALAMUS* LINN

Modak S. C.*, Gurkhe P. P., Patkar R. S., Gavali P. P., Chavan G. D., Choudhari V. A., Jagtap V. A.

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Abstract:

Since ancient times, herbal drugs are been used in various medical systems such as Ayurveda, Unani, Siddha and Chinese medicine to treat various ailments. *Acorus calamus* is a useful medicinal plant that has been used in various fields of medicine. The use of *Acorus calamus* in the cream makes the formulation versatile with anti-rheumatic, anti-eczema, anti-fungal properties and the ability to lower body temperature (antipyretic) in adolescents. The various therapeutic potentials of this plant are attributed to its rhizome. This poster addresses the antifungal activity of plant with different extracts or solvents. Plant rhizomes, roots and leaves have been used for their insecticidal, antifungal, antibacterial, and allelopathic properties. α-Asarone and β-asarone are the main bioactive compounds found in this plant. The aim of this study is to formulate a new cream formulation from calamus extract using clove oil for the treatment of skin infections. Also, the evaluation is done by different parameters and microbiological studies. Many of its uses have yet to be scientifically validated. Many compounds have been isolated and characterized from A. calamus leaves, rhizomes and oils. The current poster sought to explore pharmacological antifungal property of *A. calamus* with clove oil for the treatment of skin infections.

Keyword: *Acorus calamus*, antifungal, formulations, phytochemistry, rhizome

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PCOL-UG0302

DIAGNOSTIC MANAGEMENT OF HYPERTENSION

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Abstract:

Recently it is seen that hypertension is a growing public health problem worldwide. Stress can be the main of cause hypertension, which is frequently seen to increase the blood pressure of a person. There may be other reasons also for increased blood pressure such as stimulation of hormones which causes vasoconstriction. Factors affecting elevation of blood pressure is mainly through factors such as stress, peer pressure, job strain and emotional distress. The definition of hypertension has been evolved over years and finally reached to that any condition where the force of the blood is way too high that the normal pressure is called as hypertension. Although stress may not directly cause hypertension, it can leads to repeated blood pressure elevation, which eventually may lead to hypertension.

Keywords: Hypertension, Chronic, Stress, Blood Pressure, Therapeutic, Health

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PCOL-UG0303

ANTIBIOTIC ADJUVANT: AN ALTERNATIVE APPROACH TO OVERCOME MULTI-DRUG RESISTANT GRAM-NEGATIVE BACTERIA

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Abstract:

Antibiotic resistance is one of the most serious challenges that the world is currently facing. The number of people succumbing to drug-resistant infections is increasing every day, but the rate of drug discovery has failed to match the requisite demands. Antibiotic adjuvants approach provides an alternative and complementary strategy for new antibiotic discovery. These compounds restore or potentiate the activity of commonly used antibiotics against multi-drug resistant (MDR) Gram-negative bacteria by targeting resistance or enhancing action of antibiotics. In this perspective, it focused on the recent design antibiotic resistance mechanism in Gram-negative bacteria, which can be used to guide the development of new antibiotic adjuvants. Additionally, it summarized the recent achievements in the search for antibiotic adjuvants based on their modes of action and also in developing next-generation adjuvants such as broad-spectrum adjuvants and hybridization approach, which would contribute to enrich arsenal against MDR Gram-negative bacteria.

Keywords: Antibiotics adjuvants, Gram Negative Bacteria, Multi drug resistance

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PCOL-UG0304

CAPSID INHIBITION WITH LENACAPAVIR IN MULTIDRUG RESISTANT HIV-1 INFECTION

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Abstract:

Patients with human immunodeficiency virus type (HIV-1) infection have limited treatment option.All antiretrovial drug shows drug resistance therefore Lenacapavir first-in-class Caspid Inhibitor shows multi-drug resistance against HIV infection is used.Caspid inhibitors disrupt HIV caspid during multiple stages of the viral life cycle. This prevent HIv from multiplying and can reduce the amount of HIV in the body. 3 clinical trial were performed in which patients were assinged according to changes in their HIV-1 RNA viraloads & log10copies per milliliter. Studied Population was experiencing with multidrug-resistant HIV and who was failing their current ARV regimen. Participants have two or fewer fully active ARV agents available to effectively form a viable regimen. Participants have HIV RNA ≥400 copies/mL at screening.3 The dose were given for 6 months& patients were kept under observaion. Studied At end point decrease in viral load from baseline of at least 0.5 log10 copies per milliter by day 15 was seen in patients.The results shows that in both cohorts, Lenacapavir related Caspid substitution associated with decreased susceptibility was developed in 8 patients. The limitation seen was the sample size was small, background antiretroviral therapy was variable and follow-up was limited. Therefore, he conclusion seen in patients with multi-drug resistant HIV-1 infection those who received Lenacapavir had a greater reduction from base line in viral load.

Keywords: Drug Resistance, Lenacapavir, Drug-related Grade 4 AE

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PCOL-UG0305

HERBAL APPROACH TO POLYCYSTIC OVARIAN SYNDROME

Kothavale K. N., Rawool M. M., Tanawade K. P., Shintre S. R., Bijli M. A., Samant S. S., Jagtap V. A.

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Abstract:

Polycystic ovarian syndrome (PCOS) is a heterogeneous endocrine disorder that affects about one in 15 women worldwide. Polycystic ovary syndrome (PCOS) is a frequent medical condition characterized by both metabolic and reproductive disorders. It is a major disorder characterized by elevated levels of male hormones (androgens), acne and hirsutism. It can even cause insulin resistance, anovulation and infertility on prolong incidence of cysts. Different pharmaceutical treatments have been proposed for PCOS. However, side effects of long-term treatments and their probable low efficacy have made complementary and alternative treatments a valuable option. Recent reports have indicated the increased use of complementary treatments. Herbal medicine, as part of complementary medicine, was find introduced in traditional Persian and Chinese medicine. Medicinal herbs have used for a long time in the treatment of gynecological and infertility problems of PCOS patients. Since PCOS is a curable disorder, it can be cured by use of natural remedies or allopathic medication. The natural remedies include treatment with phytoestrogenic and non-estrogenic herbs which are effective and safe.

Keywords: PCOS, Hormone, Herbal medicine, Complementary medicine

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PCOL-UG0306

IN-VITRO ANTI-INFLAMMATORY ACTIVITY OF *MORINGA OLEIFERA* LAM.

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Abstract:

The aqueous and ethanolic (90%) extract of the leaves of *Moringa Oleifera* Lam (Fam: Moringaceae) were studied for their anti-inflammatory activity by in-vitro method named Mizushima & Kobayashi method. Leaves were extracted with 90% ethanol and the extract was screened using Ibuprofen used as a standard reference drug. The percentage inhibition of denaturation produced by *Moringa Oleifera* Lam leaves at various doses were estimated and interpreted. The results confirm the folklores claim of the plant.

Keywords: *Moringa Oleifera* Lam., *In-vitro*, Anti-inflammatory

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PCOL-DP0301

GENERIC VERSUS BRANDED MEDICINES: A SURVEY BASED STUDY ON AWARENESS AMONGST SOCIETY

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Abstract:

Generic drugs are the copy of branded whose patent has expired. Branded drugs are the original product that has been developed by pharmaceutical company. They have same active ingredients, dosage form, quality etc. People generally confused because of difference in packaging and price. In India people have many myths about generics due to lack of knowledge and awareness. The active ingredient of the generic drug is the same as that of the branded drug, however, the 'inert ingredients' which give the drug its colour, odour, size, shape or taste may vary from the branded drug to the Generic drug. Doctors generally does not prescribe the generic drug because they are more doubtful about quality and safety of them. Pharmacist does not dispense generics because of less commission on sale of generics and less demand by physician & people. Government has launched the Jan Aushadhi scheme- "Pradhan Mantri Bhartiya Janaushadhi Pariyojana", to provide the quality medicine in affordable price to all.

Keywords: Generic, Branded, Awareness, People, Survey, Quality Medicine

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PCOL-DP0302

ANTIBIOTIC RESISTANCE IN COMMUNITY

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Abstract:

Antibiotics have been used to cure bacterial infections for more than 70 years, and these low-molecular-weight bioactive agents have also been used for a variety of other medicinal applications. In the battle against microbes, antibiotics have certainly been a blessing to human civilization by saving millions of lives. Globally, infections caused by multidrug-resistant (MDR) bacteria are on the rise. Antibiotics are being used to combat diversified bacterial infections. Synthetic biology techniques, in combination with molecular, functional genomic, and metagenomic studies of bacteria, plants, and even marine invertebrates are aimed at unlocking the world's natural products faster than previous methods of antibiotic discovery. There are currently only few viable remedies, potential preventive techniques, and a limited number of antibiotics, thereby necessitating the discovery of innovative medicinal approaches and antimicrobial therapies. MDR is also facilitated by biofilms, which makes infection control more complex. In this review, we have spotlighted comprehensively various aspects of antibiotics viz. overview of antibiotics era, mode of actions of antibiotics, development and mechanisms of antibiotic resistance in bacteria, and future strategies to fight the emerging antimicrobial resistant threat.

Keywords: Antibiotics, Antimicrobial resistance, Multidrug resistant bacteria

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PCOL-DP0303

DRUG DEVELOPMENT IN ALZHEIMER'S DISEASE: A FUTURE PERSPECTIVE

Bagwan Md. S. B.*, Ghube S. S., Kachre N. D., Sawant D. N., Gawade L. S., Pendse O. M.

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Abstract:

The Alzheimer's Disease (AD) is a most common form of dementia which slowly destroy memory and thinking skills, difficulty to carry out simplest task, change in judgement, reasoning, behaviour and emotions. As per WHO, currently estimated to be over 55 million people worldwide living with dementia and the number may rise up to 139 million people by 2050 with annual global cost of it is over US$1.3 Trillion. The primary goal of treatment of AD is to maintain functioning as long as possible, with a secondary goal to treat the psychiatric and behavioural sequelae. Most of conventional medications comprises cholinesterase inhibitors (ChEIs) like Donezepil, Galantamine & Rivastigmine for mild to moderate AD with addition of N-methyl-D-aspartate (NMDA) receptor antagonist like Memantine for moderate to severe AD. Many agencies and governments are now convinced on a point that dementia should be made a global priority with the aim of a cure or approved disease-modifying therapy (DMT) available at earliest. In this presentation we are mainly focusing on recent advancements in the treatment of AD and various agents in pipeline mainly determined to provide disease-modifying therapy (DMT). This presentation is based on the various review and research articles published in the reputed journals, data available on the official clinical research registries and reference books. This review shows that more than 125 agents are in pipeline which shows substantial array of treatment mechanisms and targets. Advancements in drug design, outcome measures, use of biomarkers promise to provide new and better treatments for patients with AD.

Keywords: Alzheimer's disease, Dementia, Neuro-degenerative disease

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PCOL-DP0304

A REVIEW OF ALCOHOLISM AND ITS TREATMENT STRATEGIES

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Abstract:

Alcoholic beverages, socially accepted drinks around the world, are consumed to socialized, celebrate, and relax. However persistent drinking results in the development of tolerance that necessitates a perpetual increase in alcohol drinking to achieve desired effects. Chronic alcohol drinking induces addiction, characterized by excessive uncontrollable drinking associated with rapid onset of withdrawal symptoms. The alcohol mainly affects the physical, social, economic, financial, mental health. Now there may be question in your mind that how to come out from this but the study talks about pharmacotherapy alone or in the combination with behavioral approaches is only modestly effective in treating alcoholism symptoms, there is an urgent need to develop effective and safe therapies.

Keywords: Addiction, Alcoholism, Pharmacotherapy, Tolerance

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PCOL-DP0305

CYTOTOXICITY STUDY OF *HELICTERIS ISORA* FRUIT

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Abstract:

The present study is to focus on the cytotoxicity of the hydro-alcoholic extract of the Indian medicinal fruit Helicteris isora (Murudsheng) belonging to family Malvaceae. Among several plant Helicteres isora is an important medicine possessing remarkable nutritional and therapeutic activities. Such as it have Antioxidant activity, Antimicrobial activity, Anticancer Activity, Antidiabetic activity. The brine shrimp bioassay method is very useful for assessment of toxicity of plant extract. Brine shrimp lethality bioassay method was used for the present study and the cytotoxicity was reported in terms of lethality concentration (LC50). The shrimp were hatched and active shrimp were collected and used for assay. Then the active shrimp added to 2.5 ml test solution and kept for 24 hrs. and lethality concentration (LC50) was assessed. 24 h of observation all the shrimp were survived in the control. Even though, maximum mortalities were observed at a concentration of 10000µg/ml and1000ug/ml and least mortality 100ug/ml concentrations. It was observed that in higher concentration of treatment extracts, the shrimps were start dying only after 6 h and after 24 hr. all the shrimps died. The result on the lethality of Helicteres isora fruit (hydro-alcoholic extract) is with LC50 value.199.2ug/ml. against brine shrimps. The hydro-alcoholic extracts of Helicteris isora exhibited potent brine shrimp lethality (LC50). The present study supports that brine shrimp bioassay is simple, reliable and convenient method for assessment of bioactivity of medicinal plant. Also investigate Pharmacognostical properties of the Helicteris isora fruit. For an example, organoleptic properties of drug, physical evaluation like moisture content, total ash value etc

Keywords: *Helicteris isora*, Brine shrimp lethality, Lethali

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PCOL-DP0306

PATIENT COUNSELLING ON DEPRESSION

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Abstract:

Depression is a psychiatric disorder that causes a persistent feeling of sadness and loss of interest in daily life activities, causing significant impairment in daily life. Depression is mainly caused due to imbalance in neurotransmitters like dopamine, norepinephrine, and serotonin. Depression counselling aimed to help the patient to manage depression and related issues like anxiety and stress. This review mainly focus on Patient counselling methods for depression i.e. cognitive behavioural therapy (CBT), talk therapy, interpersonal therapy, and art therapy.

Keywords: Psychiatric disorder, Neurotransmitters, Talk therapy, Patient counselling

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PCOL-DP0307

ROTAVIRUS C: PREVALENCE IN SUCKLING PIGLETS AND DEVELOPMENT OF VIRUS-LIKE PARTICLES TO ASSESS THE INFLUENCE OF MATERNAL IMMUNITY ON THE DISEASE DEVELOPMENT

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Abstract:

In April 2016, an indigenous monovalent rotavirus vaccine (Rotavac) was introduced to the National Immunization Program in India. Hospital-based surveillance for acute gastroenteritis was conducted in five sentinel sites from 2012 to 2020 to monitor the vaccine impact on various genotypes and the reduction in rotavirus positivity at each site. Stool samples collected from children under 5 years of age hospitalized with diarrhea were tested for group A rotavirus using a commercial enzyme immunoassay, and rotavirus strains were characterized by RT-PCR. The proportion of diarrhea hospitalizations attributable to rotavirus at the five sites declined from a range of 56- 29.4% in pre-vaccine years to 34-12% in post-vaccine years. G1P was the predominant strain in the pre- vaccination period, and G3P was the most common in the post-vaccination period. Circulating patterns varied throughout the study period, and increased proportions of mixed genotypes were detected in the post-vaccination phase. Continuous long-term surveillance is essential to understand the diversity and immuno-epidemiological effects of rotavirus vaccination.

Keywords: Rotavirus, Diarrhea, Rotavirus genotyping, Rotavac vaccine

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PCOL-DP0308

MECHANISM OF CANCER DRUG RESISTANCE

Behera D. P.*, Gaonkar N. A., Keluskar V. G., Alwe S. D., Bandre S. B., Dakare S. S., Harde P. K., Arolkar A. A.

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Abstract:

There is no cancer treatment that is 100% successful against disseminated cancer despite the increasingly sophisticated design of cancer chemotherapy. Anticancer drug resistance is caused by a number of variables, such as patient individuality and somatic cell genetic variants in tumours, even those originating from the same tissue. The individual's genetic variations, particularly in tumoral somatic cells, can have a role in the cancer cells' resistance to the anticancer drugs. Resistance is frequently innate to the cancer, but as therapy improves, acquired resistance has also spread widely. Traditional medicines can cause cancer to become resistant, thus more study and treatment development are required given the rising incidence of these cancers. The mechanisms of drug inactivation, drug target modification, drug efflux, DNA damage repair, cell death inhibition, epithelial-mesenchymal transition, and drug efflux are discussed in this work along with how intrinsic tumour cell heterogeneity contributes to drug resistance. It also discusses the epigenetic changes that might lead to drug resistance and how they might influence the generation of cancer progenitor cells, which are resistant to standard cancer treatments. The best approaches to treat tumours that are already resistant to current treatments, techniques to stop the development of such cancers and cancer progenitor cells, and future research paths are covered in the review's conclusion.

Keywords: Cancer, Drug resistance, Chemotherapy

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PCOG-PHD0401

CADAMBA: A NUTRACEUTICAL FORMULATION

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Abstract:

Cadamba is an important medicinal plant used to treat various diseases like fever, anaemia, diabetes and many others. *Neolamarckia cadamba* (Roxb.) is a medium sized plant which belongs to the family of Rubiaceae and found everywhere in India. The present study deals with the comparative phytochemical analysis of ripe and unripe fruits of cadamba, where qualitative analysis was done to know the presence of various compounds whereas the quantitative analysis was done to evaluate the concentration of them. Experiments were carried out by using four solvents for the extractions i.e. chloroform, ethanol, methanol and distilled water and showed presence of different phytoconstituents like carbohydrates, proteins, alkaloids, flavonoids, saponins and anthracene glycosides. Generally most of the phenolic compounds are linked to other compounds like proteins, cellulose, lignin and etc. and responsible for many biological activities such as antioxidant, antimicrobial, anti-inflammatory, anti-tumour and many others, hence the study undergone for quantitative analysis in terms of phenol . Result for phenolic content revealed that methanol extract contains higher phenolic constituent level. The concentration of phenolic constitutes in ripe and unripe fruits remains in between the range 0.0109-0.004086 and 0.009637-0.003535 mgGAE/g respectively. The order of the total phenol content in different extracts was found like chloroform < distilled water < ethanol < methanol. Based on anti-oxidant activity and nutritional values, nutraceutical formulation is formulated. A nutraceutical formulation Jam is selected since "Nutraceuticals and functional foods have received considerable interest because of their presumed safety and potential nutritional and therapeutic effects". Thus jams produced were evaluated for physicochemical and sensory qualities. The pH of all the three jam formulations were noted slightly acidic as required and ranged 4.1 to 4.4, while the total soluble solids were also recorded near to the required level in all the formulations (19.4 to 51.25) %. The ash content observed from 1.65 to 1.79 % while the total titratable acidity varied from 0.028 ml of 0.1 N NaOH. Though viscosity increased with the increase in amount of pectin which is obtained from the peel of the riped cadamba fruit and viscosity noted from 44,050 – 47,347 poise in the tested

formulations. Moisture was also observed within limits (48.72 to 80.60) % which may be useful in protecting the jam from unwanted microbial growth. The overall acceptability of jam after sensory evaluation also gave acceptable results. The jam formulations were tested on 10 point hedonic scale and the results showed that the jams prepared from natural pectin were of good quality and acquired good consumer acceptance.

Keywords: Cadamba, *Neolamarckia cadamba*, Phytoconstituents, Nutraceutical, Jam

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PCOG-PG0401

MANGO PEEL PECTIN EXTRACTION AND CHARACTERIZATION AS PHARMACEUTICAL EXCIPIENT

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Abstract:

Present study includes extraction and characterization the mango peel derived pectin as pharmaceutical excipients. Pectin was obtained using acidified water based extraction in soxhlet apparatus. To characterize the extracted pectin phytochemical screening was done and flow behavior, surface tension, viscosity and swelling index were calculated. Using water based extraction method 30.5% yield of pectin was obtained. The result revealed the fact that extracted mango peel pectin exhibited good flow properties (angle of repose 25.03), 0.41 % w/w total ash, 0.79% loss on drying and pH was found 4.2, showed that this can be used in dosage form, without any irritation. Extracted pectin was soluble in warm water. Results of evaluated parameters showed that mango peel derived pectin can be used as pharmaceutical excipients to prepare solid oral dosage form.

Keywords: Mango peel, Pectin, Extraction, Characterization, Pharmaceutical excipients

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PCOG-UG0401

CASHEW NUT SHELL OIL-A RENEWABLE AND RELIABLE PETROCHEMICAL FEEDSTOCK

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Abstract:

This study evaluates the occurrence of cashew plant, extraction processes and composition of cashew nut shell liquid (CNSL), modification and conversion processes, as well as environmental impact and controls of the liquid as petrochemical feedstock. The goal of this study is to bring the alternative usage of CNSL to the limelight and to mitigate the serious problems posed by the depleting petroleum reserves.

Keywords: Cashew nut shell Liquid, Petrochemical feedstock, Solvent extraction, Renewable resources, Characterization, Supercritical fluid

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PCOG-UG0402

HERBAL MEDICINE AS A FOUNDATION FOR DRUG DISCOVERY: PRESENT STATUS AND FUTURE PERSPECTIVES

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Abstract:

Herbal drugs constitute a major share of all the officially acknowledge systems of health in India viz. Ayurveda, Yoga, Unani, Siddha, Homeopathy and Naturopathy, except Allopathy. There has been an increase demand for the pharmaceutical products of Ayurveda in all over the world because of fact that the allopathic drugs have a side effect. The aim of the present review was to understand the knowledge of herbal medicines in respect to its circumstance, present aspects of herbal drug discovery and the future possibility in herbal medicines with promotion and Ethno pharmacological approach to herbal drugs. The ancient advancement has developed the Indian Medical System with a long history of herbal usage for the clinical management of a variety of diseases in indigenous cultures and thus Ayurveda came into alive. The raw materials for Ayurvedic medicines were mostly obtained from plant sources in the form of crude drugs such as dried herbal powders or their extracts or mixture of products. Many works is now being done on the botany, pharmacognosy, chemistry, pharmacology and biotechnology of herbal drugs. These new technologies will expand and increase the usefulness of plants as renewable of valuable chemicals. In the future, biologically active plant-derived chemicals can be look forward to play an increasingly significant role in the commercial development of new products, for regulating plant growth and for insect and weed control. In view of the advancement of Western medicine not only new synthetic drugs but also herbal drugs have to fulfill the international requirements on quality, safety and efficacy. Herbal drugs have the advantage of being available for patients in the geographical area of the special traditional medicine.

Keywords: Herbal Medicine, Drug Discovery, Ethanopharmacology, Safety, Traditional Medicine.

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PCOG-UG0403

COMPARATIVE *IN-VITRO* ANTI-INFLAMMATORY ACTIVITY OF *CEDRUS DEODARA* BARK EXTRACTS

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Abstract:

The major source of drugs is plants. Plant constituents have main role in curing illness. North India, Pakistan, Afghanistan, Tibet, and Nepal are all home to Cedrus deodara. It has historically been used to treat a variety of skin issues as well as inflammation, ulcers, discomfort, and fever. The Cedrus deodara bark was collected and authenticated. It was then dried and powdered into coarse powder. Hydro-alcoholic solvents, such as ethanol, water, and chloroform, were used for extraction. Maceration was used for extraction, followed by Soxhlet extraction. Phytochemical screening of extracts was done. The in-vitro anti-inflammatory activity of extract is evaluated using HRBC Membrane stabilization method. The ethanolic extract showed highest anti-inflammatory activity. It demonstrated improved lysis prevention. For the treatment of inflammation, this extract can be used to create stable topical formulations.

Keywords: *Cedrus deodara*, Anti-inflammatory, HRBC Membrane stabilization method.

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PCOG-UG0404

AN OVERVIEW ON INDIAN HERBS IN HAIR CARE THERAPY

Penkar G. M.*, Salkar M. R., Chavan P. S., Ambade M. S., Parab S. A., Sawant M. M., Jagtap V. A.

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Abstract:

Hair is a thread-like structure numerously found in vertebrates. It is also considered as one of the symbols of beauty in humans. In this expeditious world, many problems associated with face (on the skin, eyebrows, lips) nails, hair, etc are seen. The provided information emphasizes on various herbal ingredients that owns numerous benefits for hairs and related hair complications in humans. Among various problems, people are experiencing many hairs related problems such as hair loss, split ends, dandruff, increased sebum production, hair thinning. Thus, people are looking for ways to increase hair conditions, prevention for hair associated problems and advanced care. The synthetic or the chemical products causes side effects and adverse effects when used, thus now people have high approach towards organic natural and herbal formulations that tends to show minimum side effect. Generally herbal preparations are known for its "no side effect" property. Utilization of herbal components is extending progressively. Herbs acts as a source of medicinal properties, foods and supplements since ages. Several cosmetic products are present for hair care prepared from herbal & other natural origin. In contrast to synthetic products, herbal or organic formulations are good alternate that possess no/ minimum side effects. In this review, various medicinal plants that owns hair care properties are summarized accompanying their biological sources, active chemical constituents having hair care property and their uses.

Keywords: Hair, Herbal Constituents, Hair Cosmetics, Natural Origin

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PCOG-UG0405

MAIDENHAIR FERN: IN MODERN PHYTOTHERAPY

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Abstract:

For thousands of years mankind is using plant source to alleviate or cure illness. Plants contain many active compounds such as terpenoids, flavonoids, alkaloids, coumarins, phenolics, steroids, glycosides, volatile oil, fixed oil, resins which are deposited in their specific parts such as leaves, flowers, fruits, root seeds etc. The main purpose of this study is to determine all the aspects of Adiantum plant related to its medicinal use. Adiantum lunulatum of polypodiaceae family is one of the most common plant that has diverse medicinal use in system of medicine. The Adiantum is also called as maidenhair, maidenhair fern, walking fern. This herb grows in the areas near water source and moist places. All the part of this plant can be used for medical purpose. The Adiantum lunulatum contain active chemical constituents such as alkaloids, steroids, tannins, glycosides, volatile oil, fixed oil, resins, phenols, flavonoids etc. The main constituents present in higher amount are terpenoids and flavonoids. Due to these it can be used in cold, skin disease, hair fall, as a diuretic and also considered as tonic. It also contains many secondary metabolites and shows anti-inflammatory, analgesic, antimicrobial, antiviral, agglutinating activities etc. The present study aims at reviewing the research works undertaken till date on this plant in order to provide sufficient baseline information for future work and for commercial exploitation.

Keywords: Adiantum, Antibacterial, traditional medicine, Terpenoids, Flavonoid

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PCOG-UG0406

ROLE OF NATURAL REMEDIES IN A NOVEL MANNER

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Abstract:

Transdermal drug delivery system (TDDS) specialists are continuing to investigate new methods for efficiently and painlessly transmitting better molecules in therapeutic quantities to overcome the challenges associated with the oral route, namely poor bioavailability due to first pass metabolism and receptiveness to produce rapid blood levels. Transdermal drug delivery improves therapeutic effectiveness and drug security by delivering drugs to specific sites, but spatial and temporal placement within the body is required to reduce both the size and number of doses required to achieve the goal of systemic medication via topical application to the intact skin surface. Transdermal patches deliver drugs for systemic effects at a controlled and predetermined rate. The drug enters the bloodstream directly through the skin via a diffusion process. Because there is a high concentration on the patch and a low concentration in the blood, the drug will continue to diffuse into the blood for an extended period of time, maintaining a constant concentration of drug in the blood flow. Transdermal patches, Niosomes, Ethosomes, and liposomal drug delivery systems are examples of novel approaches to carrier-mediated drug delivery systems. The ability of the drug to permeate skin in sufficient quantities to achieve the desired therapeutic effect is critical to the success of all TDDS.

Keywords: Transdermal patches, Natural excipients, Niosomes, Therapeutic action

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PCOG-UG0407

EXPLORATION OF CONCEALED PLANT OF KONKAN DIPCADI CONCANENSE (ASPARAGACEAE) FOR ITS PHYTOCHEMICAL AND BIOLOGICAL POTENTIAL

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Abstract:

Dipcadi concanense (Asparagaceae), one of the long-flowered species, is endemic to the Konkan region in the Sindhudurg and Ratnagiri districts of Maharashtra state. Konkan region is well known for its huge biodiversity and has kept an infinite number of unexplored flora and fauna in its lap. *Dipcadi Concanense* is one such location-specific plant that was concealed from the scientific approach. In the present work, we have performed a systematic literature search from various databases and investigated the ethanolic extract of the stem of the plant for its phytochemical and anthelmintic activity.

Keywords: *Dipcadi concanense*, Phytochemical studies, anthelminthic activity, Albendazole

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PCOG-UG0408

COMPARATIVE STUDY ON CONVENTIONAL AND NOVEL METHODS FOR THE EXTRACTION OF *CURCUMA LONGA*

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Abstract:

Extraction is an important step for separation, identification and use of valuable components from different plants. It is necessary to optimize extraction methodology so as to achieve maximum extraction efficiency. Quality of extract is influenced by several factors such as particle size of plant material, time, solvent choice, solvent/solute ratio and time of extraction.in the present study effect of various parameters studied in order to obtain highest yield of Curcuma longa (rhizomes) using conventional and novel methods of extraction. The parameters sets were particle size of #10, #20, #40, time 30min ,60min (maceration), 10min ,20 min (ultrasound assisted extraction), 5min ,10min (microwave assisted extraction),choice of solvent was methanol ,ethyl acetate and solvent/solute ratio of 10/5 & 20/5. The Result indicates: In maceration, solvent Methanol with particle size of #20 and solvent/solute ratio of 20/5 at 60 min has shown highest % yield of 21.67%. In ultrasound assisted extraction, a highest yield of 21.81% was reported in solvent Ethyl acetate with particle size of #20 and solvent/solute ratio of 20/5 at 20 min. In microwave assisted extraction, a highest yield of 22.38% was reported in solvent Methanol with particle size of #10 and solvent/solute ratio of 20/5 at 3 min.

Keywords: *Curcuma longa*, solvent/solute ratio, ultrasound assisted extraction, microwave assisted extraction, TLC

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PCOG-UG0409

TRADITIONAL ALU AS A GAME CHANGER IN PHARMACEUTICAL FIELD

Rane A. A.*, Kubal K. G., Dikwalkar K. Y., Hodawdekar P. D., Bhalekar A. S., Dhuri N. J., Dr. Barse R. K., Jagtap V. A.

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Abstract:

Colocasia esculenta is a widely cultivated plant belonging to the family Araceae. It is commonly known as "Taro" the name was given to this family's tubers and roots. It is an annual herbaceous plant with a long history of uses in traditional medicine and as a food in several countries. Taro is an extremely valuable source of carbohydrates as an energy source. It is rich in mucilage and starch granules. Traditionally, it has been employed in the treatment of asthma, arthritis, diarrhea, neuro disorders, and skin disorders. It possesses ingredients having antitumor, anti-diabetic, anti-microbial, anti-bacterial, anti-hepatotoxic, and anti-melanogenic properties. The literature survey carried out revealed that taro can serve as a potential film-forming agent, disintegrant, diluent, and granulating agent. The review revealed that taro can be used in the pharmaceutical industry for its various properties. Taro mucilage was found to be a suitable alternative to conventional mucilage's in formulations and development. Also in this review, we described different extraction techniques used to extract mucilage from the corms of the taro plant. The review concluded that all parts of the taro plant are useful and have a variety of health benefits. The starch and the gum obtained from the corms of *C. esculenta* can be used in the pharmaceutical industries for its various properties such as in the form of binder, matrix forming agent etc.

Keywords: Taro, *Colocasia esculenta*, Mucilage, Starch, Gum

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PCOG-UG0410

HERBAL DENTIFRICES REVIEW

Kubal K. G.*, Rane A. A., Dikwalkar K. Y., Hodawdekar P. D., Bhalekar A. S., Dhuri N. J., Barse R. K., Jagtap V. A.

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Abstract:

Toothpaste is a semi-solid dosage form used with an aid of toothbrush to enhance oral hygiene. The demand for herbal based product such as toothpaste is high these days. Consumers believe that using herbal based toothpaste is safe, effective and less toxic because less and only safe chemical are used as compared to the synthetically produced toothpaste. There is a increased usage of herbal cosmetics thus a comprehensive review on herbal toothpaste that helps to maintain a proper oral hygiene and free from periodontal disorder, reduce stain, gingivitis, calculus and caries is carried out. Some common food materials and waste materials can replace the harmful or costly chemicals like citric acid, coloring agents and preservatives making the toothpaste economically more viable than commercial toothpastes. Recent researches carried out show that Vitamin C can kill cancer cells acting as a per-oxidant, if used in proper amount which is found in fruit peels and some herbs which are abundantly available. The present review gives basic information regarding antimicrobial potential of various herbs, formulation excipients, that can be used in preparation of toothpaste.

Keywords: Herbal toothpaste, Waste management, Antibacterial

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PCOG-UG0411

EXPANDING DESIRES OF NATURAL GUMS IN CUTTING EDGE MEDICATION DELIVERY SYSTEMS TODAY AND FUTURE

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Abstract:

Gums are widely used natural excipients for conventional and novel dosage forms. The pharmaceutical industry has chosen to use the majority of natural polymers in formulations as a result of the growing interest in these materials. The development of innovative excipients that are safe, carry out specific tasks, and directly or indirectly affect the pace, extent, and/or absorption have been prompted by advancements in drug administration. These natural materials are superior to synthetic ones because they are readily available, inexpensive, nontoxic, and chemically inert. They are also biodegradable. Discovering, extracting, and purifying such chemicals from their natural sources is becoming a topic of growing interest due to the huge focus of the pharmaceutical industry on these naturally produced polymers. As a prospective contender for a novel drug delivery system, gums are strong candidates to be employed in a variety of pharmaceutical compositions (NDDS). We describe the advancements in natural gums for application in the pharmaceutical sciences in this review.

Keywords: Natural excipients, Gums, Advancement, Mucilage, Plant-derived polymeric

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PCOG-UG0412

ANTIACNE HERBS AND POLYHERBAL FORMULATIONS

Patil S. D.*, Thakur V. S., Dalvi H. P., Chavan A. Y., Jadhav R. R., Rawool S. B.

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Abstract:

Acne vulgaris, also known as acne, is a common skin ailment that develops when androgen stimulation causes changes in the pilosebaceous units, the skin's pores and skin systems, including a hair follicle and the sebaceous gland that lies beneath it. Adult female acne can also start in childhood and continue until adolescence or develop in maturity. The primary method of treating acne is topically. Natural remedy can be the best possible way to treat acne as it is giving action without any side effect and prevents acne for longer duration of time. The poster will include herbs that are easily available, natural, economical and can be formulate as polyherbal formulation for acne treatment.

Keywords: Acne, Vulgaris Propioni bacterium acne, Herbal drugs

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PCOG-DP0401

MEDICINAL USE OF KAPIKACCHU

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Abstract:

Kapikacchu "Mucuma pruries" is widely known as velvet bean belong to family fabaceae. It has variety of pharmacological properties activity such as Hypoglycaemia, Antioxidant , Aphrodisiac ,Antimicrobial , antiparkinson's . seeds of Mucuma pruries use in treatment of menstrual disorder, constipation, oedema, fever, tuberculosis. Instead of all of these medicinal properties though these legumes have a strong potential of producing irritation to skin. These review manly focus on the different dosage forms available and therapeutic uses of under-utilized legumes.

Keywords: Hypoglycaemia, Antioxidant, Aphrodisiac, Antimicrobial, antiparkinson's, Therapeutic uses.

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PCOG-DP0402

THE EFFECT OF CURCUMIN (TURMERIC) ON ALZHEIMER'S DISEASE: AN OVERVIEW

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Abstract:

The aim of this poster is to review the current evidence supporting an association between curcumin and modulation of AD pathology. We also review the use of curcumin in emerging retinal imaging technology, as a fluorochrome for AD diagnostics Curcumin derived from turmeric is well documented for its anti-carcinogenic, antioxidant and anti-inflammatory properties. Recent studies show that curcumin also possesses neuroprotective and cognitive-enhancing properties that may help delay or prevent neurodegenerative diseases, including Alzheimer's disease (AD). Alzheimer's disease is an irreversible, progressive brain disorder that slowly destroys memory and thinking skills and, eventually, the ability to carry out the simplest tasks. In meet people with Alzheimer's symptoms first appear in their mid-60s. As age progresses, the first system of the body which mostly get dandered in consider to be digestive system. But, nowadays plethora of measures is available to get rid from digestive problems. Due to aging, the second most system of the body get affected after digestive system is Central Nervous System (CNS). Since, there is no cure for alzheimer's disease Le neurodegenerative disorder of hun has become the major cause of death the globe. As per WHO. Alzheimer disease (AD) the most common form of dementia There is a clear need for tangible advances in the area of biomarkers for ment of risk, diagnosis and monitoring disease progression. Screening of patients still run very expensive and research is necessary to develop non expensive and tests. Nowadays many new studies have conducted to identity and treat Alzheimer's disease Some study revealed that a simple blood test may soon be able to diagnose patients with two common form of dementia i.e. Alzheimer's disease and Frotemporal dementia Researchers report that they can measure levels of the Alzheimer's protein amyloid beta in the blood and use such levels to predict whether the protein has accumulated in the brain. The findings represent a key step toward a blood test to diagnose people on track to develop the devastating disease before symptoms arise. The different classes of drugs used for treatment of Alcheimer's

include, NMDA receptor antagonist, NMDA blockers, ACE inhibitors, Nerve protectants. Rivastigmine. Donepezil , Mamentamine, Galantamine, Citocholine and some combination thereof are used in AD,manufacturing companies being, Sunpharma, solus Pharma, Novartis and Cipla Higher age group of people being affected AD, its prevalence is more above 50 years of age The use herbal medications have a scope for research in this area, considering the age group of affected patients who might have lesser tolerance to allopathic drugs High cost of bearing the AD, consideration can be given to low cost herbal medication These surveys will further provide a template for conducting surveys and performing statistical analysis of collected data on global platforms With proper validation and control operation.

Keywords: Central Nervous System, Neurodegenerative Dementia Demographic. Alzheimers, Curcumin, Medication Statistical analysis.

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GREEN SYNTHESIS OF SILVER NANOPARTICLES VIA PLANT EXTRACTS: BEGINNING A NEW ERA IN CANCER THERANOSTICS

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Abstract:

With the development of the latest technologies, scientists are looking to design novel strategies for the treatment and diagnosis of cancer. Advances in medicinal plant research and nanotechnology have attracted many researchers to the green synthesis of metallic nanoparticles due to its several advantages over conventional synthesis (simple, fast, energy efficient, one pot processes, safer, economical and biocompatibility). Medicinally active plants have proven to be the best reservoirs of diverse phytochemicals for the synthesis of biogenic silver nanoparticles (AgNPs). In this review, we discuss mechanistic advances in the synthesis and optimization of AgNPs from plant extracts. Moreover, we have thoroughly discussed the recent developments and milestones achieved in the use of biogenic AgNPs as cancer theranostic agents and their proposed mechanism of action. Anticipating all of the challenges, we hope that biogenic AgNPs may become a potential cancer theranostic agent in the near future.

Keywords: Anticancer activity, Biogenic nanoparticles, Cancer theranostics, Green chemistry

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DRUG SIMULATION IN IT'S HEYDAY

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Abstract:

Computers are an essential tool in medicinal chemistry. They offer a cheaper, easier, and faster way to build complex correlations, predict drug activity, ADMET properties, inspect 3D structures of proteins and ligands, search between millions of compounds about potential drugs and many more. These all contributed to the modern drug design and discovery and are responsible for many available, safe, effective, and potent drugs. These are further classified into Structure based drug design and Ligand based drug design which can be further categorized into Molecular docking, Quantitative Structure Activity Relationship (QSAR), Molecular dynamics, 3D QSAR, De novo drug design and Pharmacophore. If the target's 3D structure is known, we can go through structure-based drug design approach. If the target's 3D structure is unknown, we can go through ligand-based drug design approach. The 3D structure can be determined by using the techniques like X-ray crystallography, Nuclear Magnetic Resonance, Electron Microscope and Homology modelling. Once we have determined the 3D structure, we can make it available to other researchers/ scientists by uploading it to biological target databases such as the RCSB protein database. Molecular docking studies the 3D interaction between a ligand and it's target by measuring the binding energy of the ligand-target complex. In QSAR, lead compounds are modified to form a series of analogs and then the biological activity of each analog is tested, from the obtained result a linear mathematical equation is formulated and using this equation, QSAR model is formed that help to predict the activity of other analogs.

Keywords: Computers, 3D interaction, QSAR model

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GOOD AND BAD IMPACT OF GENETICALLY MODIFIED FOOD AND DIETERY SUPPLEMENT

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Abstract:

Genetically modified organism (GMO) are the source of the modified laboratory food, dietry supplement and various additives. The subjects of the fun wone is to see the impact of genetically modified food & direct supplement as fureal or benefit on health of human & animals as well as consumer awareness towards genetically modified food and dietry supplement. The awareness of genetically modified food in terms of ingredients, functions, awareness, attitude and acceptance. The major contraversy is whether or not the benefit of genetically modified food out weigh the potential environment impact of their production. Dietary supplement can be defined as any vitamin, mineral, added chemical substances, botanical or herbal products that is added to the diet to improve human health. Scientists and health professionals agree that dietary supplements can be under certain conditions beneficial to human health, but should not replace complete and balanced daily meals of foods which are necessary for a healthful diet. Dietary supplements should not make claims, such as "reduces pain" or "treats heart disease", etc. Some of the most well known scientists in the USA on nutrition, metabolism and epidemiology reviewed the evidence on multivitamin/mineral supplements and concluded that there was not sufficient evidence to recommend for or against for the prevention of chronic disease. It covers dietary supplements taken by young, elderly, pregnant women, athletes and people with deficiencies which were self-prescribed and on the international market.

Keywords: Genetically modified food, Dietary supplements, GMO, Balanced diet etc.

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AN IMPLANTABLE SOFT ROBOTIC VENTILATOR AUGMENTS INSPIRATION IN A PIG MODEL OF RESPIRATORY INSUFFICIENCY

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Abstract:

Severe diaphragm dysfunction can lead to respiratory failure and to the need for permanent mechanical ventilation. Yet permanent tethering to a mechanical ventilator through the mouth or via tracheostomy can hinder a patient's speech, swallowing ability and mobility. Here we show, in a porcine model of varied respiratory insufficiency, that a contractile soft robotic actuator implanted above the diaphragm augments its motion during inspiration. Synchronized actuation of the diaphragm-assist implant with the native respiratory effort increased tidal volumes and maintained ventilation flow rates within the normal range. Robotic implants that intervene at the diaphragm rather than at the upper airway and that augment physiological metrics of ventilation may restore respiratory performance without sacrificing quality of life.

Keywords: Diaphragm dysfunction, Robotics, Ventilation, Respiratory

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PHARMACEUTICAL WASTE MANAGEMENT

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Abstract:

Medication disposal is an alarming issue today and gaining more and more awareness from the healthcare professionals as well as consumers. Pharmacists have the potential to be on the forefront of this movement as a healthcare professionals and pharmacists are in an admirable position to educate patients about safe drug disposal. Proper patient counselling on safe medication disposal can make a significant difference to public health and the environment. The knowledge on method of disposal of unused medicines is equally important as that of consumption of medicines. This article aims to provide a background, the importance and significance of proper medication disposal, describe the correct methods to dispose of unwanted and expired medications. The information about methods of proper disposal as well as consequence of improper disposal was collected by extensive literature survey of all available resources. Till date, researchers have acknowledged many human and veterinary pharmaceutical compounds at serious concentrations in drinking water resources and they are a major contributor to environmental pollution. Emphasis is also given on pharmacist role in proper disposal of unwanted and expired medicine makes a significant impact on the environment as well as it prevents accident, poisoning and intentional violence. So it will lead to the welfare of society and trudge towards goal of 2020 health for all.

Keywords: Medication, Disposal, Consumers

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ARTIFICIAL INTELLIGENCE IN PHARMACY FIELD

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Abstract:

Artificial intelligence (AI) is Pharma's next frontier in life sciences. This is the analysis about the recently techniques of AI that aims to imitate human intelligence functions i.e. with the help of Artificial intelligence & Robots 'Automation become the result of Industrialization', driven by the need to increase productivity, to achieve consistent quality products & to remove hazardous and heavy work from workers. . A robot for pharmaceutical applications has a bright future but with the rapidly aging population that urgently requires sophisticated medical devices & newer drugs, robotics systems are increasingly adopted for improved productivity and efficiency to meet this growing demand. Artificial Intelligence (AI) focuses in producing intelligent modelling, which helps in imagining knowledge, cracking problems and decision making. Recently, AI plays an important role in various fields of pharmacy like drug discovery, drug delivery formulation development, polypharmacology, hospital pharmacy, etc. AI with robotics in the life of mankind has several advantages & disadvantages. Despite the increasingly rich AI literature from the drug discovery to care options AI techniques are used such as in ANN [artificial neural network], machine learning, AI in healthcare, AI in clinical practice. This research mainly concentrates around life threatening disease like Cancer, Nervous system and cardiovascular diseases.

Keywords: Artificial Intelligence, Automation, Industrialization, Robotics Systems

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PGX: INNOVATION, RESEARCH, COMMUNITY, ROLE OF PHARMACIST

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Abstract:

Pharmacogenomics (PGx) reduces the need for 'trial and error' prescribing and the chances of adverse reactions, and improves patient outcomes. With the cost of PGx testing falling rapidly, in line with the cost of other testing within the NHS, it is already being deployed by community pharmacists with different ailment and disorders.

Keywords: Pharmacogenomics, Prescription, Pharmacists

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NUTRACEUTICALS AS IMMUNO BOOSTERS

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Abstract:

The consumption of specific nutrients and bioactive substances found in food has a significant impact on how well the human body's immune system functions. These bioactive compounds' ability to ward off numerous diseases has been well researched.

Keywords: Nutraceuticals, Boosters