SOUVENIR

IIMT PHARMOVATION-2023

National Conference on

Recent Advances in Pharmaceutical Sciences

Date : 27th April, 2023

Organized by

IIMT COLLEGE OF PHARMACY,
GREATER NOIDA, UP.

CONTACT US :

IIMT COLLEGE OF PHARMACY, PLOT NO.19 & 20, KNOWLEDGE PARK - III
GREATER NOIDA -201310, UTTAR PRADESH, INDIA

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SPECIAL ISSUE, ABSTRACT BOOK OF CONFERENCE PROCEEDINGS OF IIMT PHARMAVATION-2023 NATIONAL CONFERENCE ON "RECENT ADVANCES IN PHARMACEUTICAL SCIENCE" APRIL 27, 2023

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Call for abstracts for Poster Presentation

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IIMT PHARMOVATION 2023

Theme: Recent Advances in Pharmaceutical Sciences

27th April, 2023

Venue: KRISHNA HALL, IIMT GROUP OF COLLEGES, GREATER NOIDA

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10:30 am – 11:00 am	Keynote address
11:00 am – 11:20 am	Tea break
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12:10 pm – 1:00 pm	Session II
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3:40 pm – 4:30 pm	E-poster Session
4:30 pm – 5:00 pm	Valedictory function and prize distribution

ABOUT IIMT GROUP OF COLLEGES

The IIMT Group of Colleges was founded in the year 1994. Since then the group has grown impressively and achieved exemplary recognition from corporate, academic and professional circles. At IIMT we are committed to providing a value-driven culture along with creating a professional environment.

The IIMT is a large and diversified group and imparts knowledge in the fields of Engineering, Management, Medical Sciences, Hotel Management, Nursing, Education, Law, etc. The IIMT group has more than 1330 highly qualified and experienced faculty members in their respective functional areas. IIMT boasts of having more than 20,000 students in various courses on five campuses.

The IIMT group has been dedicated to providing quality professional education through well-accredited courses, seminars, conferences, guest lectures, Industrial visits and excellent academic facilities. At IIMT we believe in all-around development of students with strong foundation based on pillars of knowledge, intellect and values. The programs are structured to keep pace with the present dynamic and globalized scenario meeting the requirement of industry and education. We are dedicated to deliver excellence in our academic programs.

The IIMT Group of colleges attracts students from all part of the country which is testimony to our experience and excellence in the field of professional studies. The IIMT Group has attained a highly respectable position amongst the best professional educational institutions in India.

ABOUT IIMT COLLEGE OF PHARMACY

IIMT College of Pharmacy Greater Noida was established in the year 2006, under the IIMT group of Colleges with a vision to impart quality education and create competent pharmaceutical professionals & researchers with basic human ethics. The institute emerged as one of the reputed institutions providing quality education in diploma, degree, and postgraduate courses in pharmacy in the Delhi NCR region. Our alumni proved to be a boon to the healthcare and pharmaceutical sector.

The institute established solid foundation knowledge through highly qualified faculty who strive to impart quality pharmaceutical education and skill to our students by focusing on depth and adaptive learning practices. The innovative and need-based teaching and state of art in fracture facilities at our institute with hands-on practical experience led to the overwhelming success of our students.

The advanced and enriched faculty members are abreast with modern techniques and clear clarification of topics in the classroom so that every student can interpret and understand subjects fiercely. Various aspects of pharmaceutical orientation are directed to merit the students and all apprehensions are deciphered quickly with open-mind. The Institute organizes various training in curricular, co-curricular activities regularly to equip students to meet the desired requirements of their careers and industry. The infrastructure provided in the campus play a vital role in the success of students. The special cares we take on up keeping laboratories make it possible for them to participate in an open multiplicity of experiments that result in best ever academic performance, as well experience them to recently understand industrial needs that suit to valuable services to Pharma and health sectors.

ABOUT NATIONAL CONFERENCE

IIMT College of Pharmacy gleefully announces its IIMT PHARMOVATION-2023 National Conference On "Recent Advances In Pharmaceutical Sciences" which is slated as a HYBRID EVENT on April 27 th, 2023 with the goal of bringing together pharma professionals, researchers, scientists, and the pharma industry. The Hybrid mode platforms enable all researchers, students and delegates to connect and network with people globally to increase participation and engagement. The conference is designed to maximize collaborations and innovation, with pharma and technology presentations, interactive sessions, poster sessions and visionary keynote sessions by professionals from industry and academia. IIMT PHARMOVATION-2023 is a platform to meet scientists from around the world and to learn new innovations in the field of Pharmaceutical Sciences.

The conference covers various research areas such as

1. Novel Drug Delivery System
2. Nanotechnology
3. Biotechnology
4. Computer-Aided Drug Delivery System
5. Preformulation Studies
6. Preclinical and Clinical Studies
7. Regulatory Affairs and Intellectual Property Rights
8. Natural Products
9. Pharmaceutical Chemistry and Drug Discovery

Prospective authors from academics and industry are invited to submit their abstracts that illustrate original/unpublished works describing advances and significant innovations in the field of Pharmaceutical Sciences. Accepted abstracts of PHARMOVATION 2023 will be published as conference proceedings in SCOPUS Indexed Journal (International Journal of Pharmaceutical Sciences and Research). Selected abstract with full length paper will be processed for publication as per the journal policies.

ABOUT NATIONAL CONFERENCE

We hope this hybrid mode of the conference will be an appreciable step in promoting the research activities and new information between researchers, developers, students, academicians and practitioners working in and around the world to share novel studies, develop future strategies and most importantly create mutual partnerships to support drug development.

GLIMPSE OF IIMT COLLEGE OF PHARMACY

MESSAGES

Shri Yogesh Mohanji Gupta
Chairman
IIMT Group of Colleges
Greater Noida

Problem-solving attitude evolves into Innovative Ideas, Innovative Ideas grow into research solutions.

A Nation with students of research Attitude is a problem solving attitude which lead the future and this is the Mission of our IIMT Group. With this mission, I am delighted to find our IIMT College of Pharmacy, Greater Noida, in attempting to promote and nurture innovative ideas by providing a common platform to students, start ups and young entrepreneurs. This attempt in the presence of eminent speakers on the topic of: "Recent Advance In Pharmaceutical Sciences" on April 27th 2023 through an Hybrid National Conference is appreciable.

The speakers are quite experienced and from varied specialization. My Greetings for the successful conduction and a beneficial experience for the participants of the Conference.

I wish that college of pharmacy Greater Noida should continue in its efforts of student empowerment and come up successfully with their students turning into budding entrepreneurs.

Shri Yogesh Mohanji Gupta
Chairman
IIMT Group of Colleges
Greater Noida

MESSAGES

Dr. Mayank Agarwal
Managing Director
IIMT Group of Colleges
Greater Noida

It gives me immense pleasure to convey our best wishes to the principal and all IIMT College of Pharmacy faculty members for organizing the National Conference on "Recent Advance In Pharmaceutical Sciences" on April 27, 2022 at the campus of IIMT Group of Colleges, Greater Noida.

On this occasion, I take the opportunity to congratulate all the committee members of the event for their sincere and dedicated contribution to make the event memorable and fruitful. I assure that it is the right approach to address the issues of young entrepreneurship through innovation and digitalization. I hope the scientific presentations, discussions and other activities that are going to be held during the period will be of Great help and will definitely leave new milestones. I wish the conference a great success.

Dr. Mayank Agarwal
Managing Director
IIMT Group of Colleges
Greater Noida

MESSAGES

प्रो. अलोक कुमार राय
कुलपति
Prof. Alok Kumar Rai
Vice Chancellor

डॉ. ए.पी.जे. अब्दुल कलाम प्राविधिक विश्वविद्यालय
उत्तर प्रदेश, भारत
Dr. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY
Uttar Pradesh, India

Dated: 21.03.2023

Message

I am pleased to know that IIMT College of Pharmacy, Greater Noida will be organizing its National Conference on "Recent Advances in Pharmaceutical Sciences" on 27th April, 2023.

This National Conference is to bring research scholars, teaching faculty, health activists and pharmacognosists with experts to share their knowledge in the field of pharmaceutical Sciences.

These activities provide the platform and exposure for the participants to understand and solve various problems related to health and environment and to aware the recent developments. The participants also learn dealing with peer group and develop social networking and technical skills through interactions which are important components of learning process. I believe that the efforts of the organizing committee will succeed and this event will turn out to be a great learning experience for them.

I congratulate the organizers and the team for organizing the Conference and my best wishes for the success of the Conference.

(Prof. Alok Kumar Rai)
Vice-Chancellor

MESSAGES

Dr. Anna Balaji
Professor & Director
IIMT College of Pharmacy
Greater Noida.

Dear Friends,

Greetings from IIMT College of Pharmacy, Greater Noida, U.P.

On behalf of the entire team, it is my pleasure to welcome you to the IIMT Pharmovation 2023 National Conference on "Recent Advances in Pharmaceutical Sciences" to be held on 27th April 2023.

The national conference presents an opportunity to share our latest research and developments in the field of pharmaceutical sciences and to learn from the experiences and expertise of fellow pharmacists. The theme of this conference, "Recent Advances in Pharmaceutical Sciences," underscores the importance of staying up-to-date with the latest developments in the pharmaceutical field, and I am confident that this conference will provide an ideal platform to achieve that objective.

We are grateful to our honourable management for their support, and for their contribution to making this conference possible. We hope that you enjoy your time with us, and will take advantage of the opportunity to meet and network with peers,and gain new insights into the future of pharmaceutical sciences.

Thank you for being a part of this important event, and wish you a pleasant and productive conference experience.

Dr. Anna Balaji
Professor & Director
IIMT College of Pharmacy
Greater Noida

GUEST SPEAKERS

DR. ROOP KISHEN KHAR

DIRECTOR, B.S. Anangpuria Educational Institutions Faridabad.
(FORMER DEAN and HEAD JAMIA HAMDARD). He worked in Jamia Hamdard (Hamdard University) for more than 35 years and held held various academic and administrative responsibilities from time to time including that of DEAN Faculty of Pharmacy, Head of Pharmacy, Head Dept. of Pharmaceutics, Dean Welfare, Proctor, Placement officer, Prof. Roop Kishen Khar is a renowned academician and a research scientist. He has supervised 25 Ph.D. (26) M.Pharm. theses and published more than 300 research papers in international and national journals with cumulative impact points of more than 450. H index of 57, i-10 index of 154 and citations of 14034.

DR. JAVED ALI

Prof. Javed Ali passed his B. Pharm. and M. Pharm. with distinction from Jamia Hamdard and bagged gold medals in 1994 and 1996 respectively. He earned a Ph.D in the year 2000. He was a post-doctoral fellow at the Institute of Pharmaceutical Technology, University of Frankfurt, Germany in 2005. He has a total experience of 27 years in teaching, research and administration. Presently he is working as Professor & Head, Department of Pharmaceutics, School of Pharmaceutical Education and Research & In-charge, IP Management cell, Jamia Hamdard, New Delhi. Prof. Ali has received research grants from all the leading sponsoring bodies in India such as UGC, CSIR, ICMR, SERB-DST, AICTE and DBT including FIP (the Netherlands) and Industries. He has guided 67 theses of M. Pharm. and 4 theses of Ph.D. Presently, eight Ph.D theses are under his supervision. He is an external expert for Ph.D theses at a large number of Indian and foreign universities. Prof. Ali has written several books and has contributed several invited book chapters on controlled and novel drug delivery systems in edited books of reputed Indian and international publishers. He has produced over 300 manuscripts in journals of repute and five Indian patents granted/applied. He has an h-index of 27, more than 2500 citations to his credit as per Google Scholar and an h-index of 61 and more than 14350 citations as per Scopus bibliometric data in April 2023.

GUEST SPEAKERS

ASEEM BHATNAGAR, MD, DRM, PhD(TOXICOLOGY)

Institute of Nuclear Medicine & Allied Sciences, Defence R&D Organisation, Ministry of Defence, Delhi. Currently is a Vice President, CBRN Warriors Society (India), Chairman, SDI Independent Human Ethics, Nodal Medical member, DSIR Independent Human Ethics Committee, Delhi NCR, Chairman, Jamia Hamdard University Human Ethics Committee, Jamia Hamdard Innovation Incubation & Enterprise Society, N Delhi, Member Secretary, Gurukul Kangri University Innovation Centre, Haridwar, Uttarakhand, Coordinator, Uttarakhand Ayurved University, Haridwar Complex, Dr Aseem has published > 220 peer reviewed papers (> 120 international indexed journals) and > 35 patents granted. His 15 patents are in process 9 R&D projects as PI/co-ordinator, including 2 UND (DAE) assignments. He has submitted 69 Transfer of Technology Documents to DRDO HQ, Headed 03 strategically important Departments at Ministry of Defence: Drug Development, Extreme Medicine & CBRN Defence. He is a Co-developer of ISNDU (Central Govt University) PG Courses on CBRNE medical management for Indian doctors, and IAEA consultant on radiopharmaceutical clinical trials.

MR. HEMANT CHAMOLI

Hemant Chamoli is a Consultant HEOR (Health economics outcome research) in ZS associate. Formin he was an associate manager in Eli Lilly and company, Gurgaon. He was also Former Pharmacovigilance associate in APCER PHARMA and Lead coordinator in WNS. Overall 6 years of experience in medical affair, secondary research, project management.

MR. SANDEEP TRIPATHI

Founder of Medtex Healthcare Pvt Limited. Sandeep heads the strategic direction and development of the health care business at Medtex Healthcare. He has a wealth of sales & medical technology and research experience with in the Healthcare (Europe, US & India) and has an extensive background in new business development, forecasting, and operations management.

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IIMT COLLEGE OF PHARMACY

DMT2301

A REVIEW: DIFFERENT –DIFFERENT SOFTWARE USED IN PHARMACEUTICAL AREAS

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The whole Pharmaceutical area needed various innovative creativity, discovery & development, and scientific solutions to solve the current problems related to Production, Current Good Manufacturing Practices, Documentation, and regulatory body requirements (i.e. United States Food & Drug Administration, World Health Organization, European Union-Good Manufacturing Practice, etc.), quality of product, several hindrances in the process of drug discovery and new drug development, etc. to overcome such problems different computer system software plays an important role by monitoring and maintaining the current practices of the pharmaceutical industry. Computational approaches such as protein-protein docking and protein-ligand docking, in-vitro and in-vivo correlation of various formulations, identify potentially harmful drug combinations in the in-patient and out-patient setting and fit the non-linear model to kinetic and dynamic data. These methods are faster and accurately provide valuable insights of experimental findings, and appropriate implementation of these techniques also reduce the cost of drug designing and development. This review article gives complete overview on different-different software used in different field of Pharmacy such as Pharmaceutical Chemistry, Pharmaceutics, Pharmacology, Pharmacognosy, Pharmacovigilance, Regulatory Affair etc. This article also covers the major applications of these software programs.

IMT2302

IN-SILICO STUDY OF THE POLYHERBAL HYDROGEL SHEET FOR WOUND HEALING

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The process of healing a wound is intricate and involves numerous physiological and biochemical mechanisms. Hence, it had been found in numerous studies that TNF alpha, TGF-b, and IL-1b had a significant effect. Due to their broad-spectrum therapeutic qualities and negligible side effects, herbal therapies are becoming more and more popular in the field of wound healing. In this study, we investigated polyherbal hydrogel sheet made of honey, papain, gokhru, and Ageratum conyzoides Linn for wound healing using molecular docking on the protein codes 2AZ5 (TNF alpha), 5BBY (TGF-b), and 6YBM (IL-1b).

The results of the molecular docking tests showed that the herbal component's active molecules could successfully bind to the essential targets crucial to each stage of the wound-healing process. The hydrogel sheet demonstrated good mechanical qualities.

In vitro tests also proved the biocompatibility of the polyherbal hydrogel sheet and its ability to promote the growth of human skin fibroblasts. In addition to showing antibacterial activity, the hydrogel sheet also demonstrated broad-spectrum antimicrobial activity, suggesting its potential as a therapeutic agent. In conclusion, the polyherbal hydrogel sheet made of honey, papain, gokhru, and Ageratum conyzoides Linn exhibited its potential as an appropriate dressing material for the care of various types of wounds and showed promising wound healing characteristics.

IIMT COLLEGE OF PHARMACY

OMT2303

IN-VITRO CYTOTOXICITY AND PHARMACOKINETIC STUDIES OF SELECTED SYNTHETIC COMPOUNDS

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The use of cell culture is a valuable tool to study the pharmacological effects and cell toxicity mechanisms of newly developed drugs. Before testing the compounds in animal models, in vitro studies can be interesting in evaluating the therapeutic effect of compounds. In this study, we have evaluated one selected benzimidazole compound for its potential toxicity effect on liver, kidney, and fibroblast cells through a cell-based MTT assay. Additionally, we have also investigated the effect on lung cancer cell line through flow cytometry. Pharmacokinetic studies was done using swissADME software and biological prediction done by PASSonline website. Our results suggested that all the cell lines remain viable in presence of highest test concentration of compound that is 25 ug/ml, whereas lung cancer cells were died 14% at 25 ug/ml concentration. Pharmacokinetic studies suggest that it is lipophilic and can cross blood brain barrier and can be absorb in GI. We conclude that compound can be of therapeutic interest if further elaborated for its biological effect, since it does not show any toxicity to normal cell.

IIMT12304

A DETAILED REVIEW OF PRE-FORMULATION STUDIES IN THE PHARMACEUTICAL INDUSTRY

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Every medicine has specific physicochemical features that must be taken into consideration before developing any pharmaceutical formulation. This feature provides the basis for an excipient combination with an active drug component in dosage form production.

Preformulation research aims to formulate an efficient (stable, effective, and safe) dosage form by defining appropriate Pharmaceutical parameters, Physicochemical parameters, and Biological Parameters for a new therapeutic agent. Among these features solubility, partition coefficient, a polymorphic form of drugs, dissolution rate, and stability are critical in Preformulation research. Polymorphs with different crystal and amorphous forms of the drug molecule result in numerous physicochemical and medicinal descriptions. As a result, certain methodologies for studying crystal characteristics are given in this article. Furthermore, the stability of the drug and the precurt, as well as the effects and prevention, are discussed.

Preformulation research is a time-saving step that prevents a detrimental outcome after formulation. This review will help research scholar, students to study the detailed insight of preformulation studies which need to be taken into consideration before formulating a medicine.

IMT2305

COMPARATIVE PHARMACOLOGICAL ASSESSMENT OF POLYHERBAL FORMULATION IMMUNO-BOOST TABLET AND IMMUNO-BOOST HERBAL EXTRACT CAPSULE

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In the present investigation, an attempt has been made to assess the pharmacological potential of polyherbal formulation Immunoboost Tablet (Nature Flip) and Immunoboost Herbal Extract Capsule (Medinutrica) for antioxidant properties, adaptogenic properties, blood parameters, LFT, KFT, triglycerides, cholesterol for acute and sub-acute toxicity studies.

On evaluation, it was found that Immunoboost Tablet contains 48 phytotherapeutic agents from Haldi, Guduchi, Tulsi, Yashtimadhu, Haritaki, Baheda, Amla, Kali Mirch andManjishta whereasImmunoboost Capsule (Medinutrica) contains 34 SPMs from extracts ofTulsi, Amla, Mulethi, Giloy & Haldi. Total Phenolics Content (TPC) and Total Flavonoids Content(TFC)were higher in the Immunoboost tablet than in the Immunoboost capsule.

Both the formulations induced significant NO scavenging activity and their antioxidant activities increased with increasing concentrations. Acute and sub-acute toxicity studies clearly indicated no mortality in rats upto3000mg/kg/b.wt. So, formulations have a very wide safety margin and are classified as Non-Toxic Constituent.

In adaptogenic studies, swimming time was found to be 29.32 (I), 45.42 (II), 42.66(III), 36.25 (IV) mins (formulations increased swimming endurance). Swimming time of group I was significant ($P< 0.05$) when compared other groups. In cold restraint stress model pretreatment with Wisomnifera, Immuno boost Tablet and Immuno boost Capsule significantly reduced blood cell counts except lymphocytes.

IMT2306

ANTIOXIDANT AND CYTOTOXIC ACTIVITY OF FICUS LONGIFOLIAAGAINST HUMAN HEPATOMA CANCER CELL LINES (HEPG2) AND HUMAN NORMAL HEPATIC(WRL-68) CELL LINES

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This research work was an attempt to establish scientifically standardized and validated protocols to perform research on the EELFL extract of Ficus longifolia for in-vitro antioxidant investigations and cytotoxic activity against Human Hepatoma (HEPG2) and Human Hepatic (WRL-68) cell lines.

A high amount of Total Phenolics Content and Total Flavonoids Content was found in the EELFL (responsible for antioxidant activity). EELFL extract has produced significant Nitric Oxide scavenging activity and showed cytotoxic effect on human hepatoma cancer cells in a dose-dependent manner. The IC50 concentration on the HEPG2 cancer cell line was 180.5 µg/ml while the IC50 concentration on the WRL-68 cell line was 380.7µg/ml and least human hepatoma cancer cell viability resulted from EELFL (400µg/ml) was (2.57±5.322). Subsequently, it was increased (94.75±0.4064) with reduced EELFL concentration (6.25 µg/ml).

The study concluded that EELFL extracts of Ficus longifolia exert significant effects on HEPG2 cancer cell line in contrast with high reduced activity on normal cell WRL-68 line, representing safe, selective therapeutic agent. EELFL extract have potential for the development of therapeutically active compounds which could serve as precursors / chemical templates for the design of an effective, more potent and safe anti-cancer drug. These encouraging preliminary results provide a scientific basis for further characterization of individual compounds from this extract.

IIMT2307

IN-VITRO ANTIOXIDANT AND IN-VIVO ANTI-INFLAMMATORY ACTIVITIES OF ETHANOLIC EXTRACT OF FICUSLONGIFOLIA LEAVES IN ALBINO WISTAR RATS

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This research work was undertaken as an attempt to establish scientific protocols to perform research on Ficus longifolialor antioxidant activity and anti-inflammatory activities against carrageenan.

The TPC of the EELFL extract was high (1264.41 ± 12.59 mg GAE/100 g DW, mg GAE/100 gDW). Further, TFC in EELFL Extract was found to be high. Subsequently, the in-vitro Antioxidant effect with ascorbic acid was 68.2 µg/mL followed by EELFL extract was 65.8 µg/mL. EELFL extract also produced significant NO scavenging activity. Anti-oxidant activity of EELFL fractions by FRAP assay was found to be 1017.66±12.66 µmol FeSO4/g DW.

Further, in toxicity studies, EELFL slightly changed blood RBC, Hb, Ht, MCV, PLT count, WBC count, glucose, creatinine, and BUN while LFTs were unaltered. EELFL indicated a very wide safety margin so it can be classified as Non-Toxic Constituent. Finally, it was found that EELFL extract induced RBC membrane stabilizing property (45.54% to 66.26%).

The edema inhibition was better with reference drug (35.07%) followed by EELFL-B Extract (31.21%) and EELFL-A Extract of Ficus longifolia(25.52%) at 5th hour observation.

Finally, Ficus longifolia is recommended as anti-inflammatory and antioxidant medicine. Much elaborated studies are also proposed to endorse the scientific findings of this research.

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DMT2308

PHARMACOLOGICAL AND TOXICOLOGICAL EVALUATION OF DIVYA SWASARI CORONIL KIT (PATANJALI)

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In the present investigation, an attempt has been made to assess the pharmacological potential of DivyaSwasari–Coronil-Kit (DCK) comprising of Coronil tablet, Swasari Vati, and Anu Taila for management and control of Covid-19 Infections.

On evaluation, it was found that DCK contained Coronil Tablet, Swasari Vati, and Anu Taila. Coronil Tablet contains 25 SPMs from 03 Medicinal Plants, Divya Swasari Ras Vati contains 86 SPMs from 09 Drugs whereas Anu Taila contains 234 physicoconstituents / SPMs from 27 Herbal Drugs. Coronil Tablet acts as an immunity Booster. Divya Swasari Ras Vati is useful for colds, coughs, and other viral diseases. Divya Anu Taila acts internally for cooling the brain and nerves; Improves sensory organs functions.

Antioxidant activities of the Coronil Tablet and Swasari Vati extracts increased with increasing concentrations. Acute Toxicity studies clearly indicated that there was no mortality in rats upto 2000 mg/kg/b.wt and The Coronil tablet and Swasari Vatiinduced a very wide safety margin so they should be classified as Non-Toxic Constituent.

Both Coronil Tablet and Swasari Vati increased swimming endurance. Coronil Tablet &Swasari Vati produced significant anti-inflammatoryeffects (significant decrease in edema). Besides effects were less significant thanstandardreferencedrugi.e.Indomethacin. Finally, paracetamol was found to be absent in Coronil Tablet and Swasari Vati.

IIMT2309

FORMULATION AND EVALUATION OF HERBAL VANISHING CREAM CONTAINING OIL OF *Syzygium aromaticum*

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Background: Herbal Medicine and Cosmetics are commercially available products that are used to better the appearance of the skin. Indeed, though the cosmetic field is nearly related to the pharmaceutical or food industry, the expectations of cosmetic product consumers and their requirements are fully different. Cloves are the aromatic flower buds of a tree in the family of Myrtaceae. Syzygium aromaticum. They're native to the Maluku Islands (or Moluccas) in Indonesia and are naturally used as a spice. A cosmetic correspondent to cold cream but less oily applied generally to the face and neck as a base, night cream, or moisturizer is a vanishing cream. It is an o/ w type of emulsion. These are an o/ w type of emulsions which when applied to the skin leave a nearly unnoticeable layer on it so called vanishing creams. These creams can be quickly washed off with water due to the presence of o/w emulsifiers.

Evaluation: Mayer's Test, Dragendroff's Test, Wagner,s Test, Ferric Chloride Test, Foam test, and Test of Flavonoids.

Results:

1. Preparation of Solvents TLC technique are Chloroform, ethanol, water with 2:2:1 Ratio. Then we observed the Rf value of product is 0.98.
2. TLC technique of clove oil again, we extract clove oil by using Clevenger apparatus, after the complete of extraction process we have collected the clove oil. Then we have performed TLC technique in clove oil. Preparation of Solvents TLC technique is Chloroform, Acetone, water with 2:2:1 Ratio. Then we observed the Rf value of product is 0.98.

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IIMT2310

DESIGN DEVELOPMENT AND EVALUATION OF FAST-DISSOLVING TABLETS OF METFORMIN HYDROCHLORIDE WITH SUPER-DISINTEGRATING AGENTS

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The aim of the present investigation was to develop rapidly dissolving dosage forms of the Metformin HCl (anti-hyperglycemic drugs) tablet. FDTs of Metformin HCl were prepared by direct compression method. FDTs of Metformin HCl were formulated by using super disintegrates like Croscarmellose sodium (6%) and sodium starch glycolate (6%).

Hardness for the formulations F1 to F6 was found to be in the range of 4.5±0.06 to 3.7±0.10 Kg/cm2. Disintegration time was found to be in the range of 51.5±0.54 to 24.5±1.04 sec. It was also found that with the increase in the concentration of super disintegrates the hardness and disintegration decreased. Out of all six formulations, F6 showed the best features with the least disintegration time of 24.5±1.04 seconds. Metformin HCl was determined spectrophotometrically at 232 nm using distilled water as solvent.

The in-vitro release was studied for all the formulations and the drug release ranged from 97.40±2.46 to 99.54±1.12 respectively. Evaluation showed that the use of natural super disintegrates produced better hardness, disintegration time, wetting time and drug release as compared to synthetic super disintegrates.

It was concluded that formulations F6 shows better results with proper hardness, disintegration time, friability, wetting time, dispersion time, and drug content fulfils all the requirements for a fast-dissolving tablets. This formulation showed maximum drug release of 99.54±1.12.

IIMT2311

A REVIEW ON ACIPIMOX--A NICOTINIC ACID ANALOGUE FOR DIABETES

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Purpose: This review aims to explore the association between Acipimox, diabetes, and obesity.

Methodology: reviewed papers, associated with the title were searched using keywords, from PubMed, Medline, and other research-related databases.

Major Finding: Acipimox (5-methyl-pyrazine carboxylic acid 4-oxide) is a new potent and long-acting antilipolytic drug, which has been derived from Nicotinic acid. Acipimox may have a potentially beneficial effect on glucose metabolism in patients with NIDDM. With respect to insulin action, rodents fed a high-fat diet manifest increased intramuscular LCFA-CoA (the long-chain fatty acyl-CoA) content, which is associated with insulin resistance. In contrast, weight loss in morbidly obese humans is associated with a reduction in intramuscular LCFA-CoA levels and enhanced insulin action. Acipimox is a powerful inhibitor of lipolysis, leading to a reduction in plasma FFA concentration, and has been shown to improve tissue sensitivity to insulin and β-cell function in T2DM individuals. These findings have been interpreted as evidence for the role of elevated plasma FFA in the development of insulin resistance, i.e. lipotoxicity. However, in all previous studies, as well as in the present study, acipimox also lowered the plasma glucose concentration. Thus, removal of the detrimental effect of chronic elevation in plasma glucose concentration on insulin sensitivity and β-cell function could have contributed to the effect of acipimox to ameliorate insulin resistance and improve β-cell dysfunction.

Conclusion: Lowering the plasma glucose concentration with Acipimox may improves both insulin sensitivity and β-cell function but further investigation is required.

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IIMT23L2

MODULATION OF BRAIN ANG(1-7) IN PKC PATHWAY IN DIABETIC NEPHROPATHY

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Objective: Angiotensin (1-7) has been identified as a physiologically major constant of the renin-angiotensin system. It exhibited that diabetic nephropathy (DN), which is a prevalent cause of end-stage renal disease, reduces Ang (1-7)peripheral activity. RAS activity in the PNS is controlled by RAS in the brain. The goal of this research is to see whether cerebral angiotensin(1-7) with an effective PKc signaling pathway has a role in chronic diabetic kidney disease in Wistar rats.

Methods and materials: Single dosage of streptozotocin 50 mg/kg i.p. causes diabetes mellitus (DM). Two doses of valsartan and Ang (1-7) via various routes. After that, there were testing of the samples. Commercially available kits were used to determine biochemical parameters linked to DN.

Results: When all rivan was given to diabetic rats for 8 weeks, the mice displayed higher serum creatine, blood urea as well as protein in the urine, as well as a decreased amount of serum nitrite. The 42-week course of Intracerebral valsartan (100nmol/day)and Ang (1-7) treatment decreased such changes also elevated serum nitrite in rats with DN, but only in conjunction with valsartan (3µg/day) separately or in combinations.

Conclusion: The findings of current research imply that brain Ang(1-7)is vital in RAS peripheral activity modulation in diabetic nephropathy, which might be attributed to Ang II peripheral activity and reduced central sympathetic outflow.

IIMT 2313

FORMULATION AND EVALUATION OF POCL FOR BCS CLASS IV DRUGS

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BCS class IV drugs are having various problems with their pharmacokinetics and stability. Due to these problems, many potent drug candidates fail to reach clinical treatment. These pharmacokinetic parameters may be modified as needed. Mostly, conventional research uses a high concentration of surfactants and co-solvents to solve these problems. While these can cause many adverse or toxic effects on the body. So, to minimize these toxic effects and enhance the solubility and permeability of BCS class IV drugs, the present research formulated advanced 'POCL' as a novel drug carrier system. 'POCL' was formulated having improved pharmacokinetics. Formulated 'POCL' were evaluated for their particle size, drug entrapment efficiency, drug loading, and In-vitro release profile. In the future, the present 'POCL' must be the choice of drug delivery system for BCS class IV drugs.

IIMT2314

IN-VITRO ESTABLISHMENT OF METOCLOPRAMIDE-LOADED EFFERVESCENT GRANULES FOR GASTROESOPHAGEAL REFLUX DISORDER

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Gastroesophageal Reflux Disorder (GERD) is the most common digestive disorder in all ages that occurs when stomach acid or bile flows into the food pipe and irritates the lining. This causes heartburn and other related symptoms which can lead to tissue damage. The disease can be managed effectively in patients with the combination of lifestyle, diet management and proper medical treatment.

In the current study, Metoclopramide-loaded effervescent granules was developed and evaluated for gastroesophageal reflux disorder. The granules were prepared using wet granulation method by combining the ratios of salts of sodium bicarbonate and HPMC. The other salts like citric acid and tartaric acid were also selected in the optimization of granules. Optimized formulation was evaluated for parameters like physical appearance, flowability property, effervescent time, drug content, pH, drug release, and stability. The effervescent granules composed of Metoclopramide containing sodium bicarbonate and HPMC polymer showed good flowability.

The result revealed for optimized formulation have an effervescence time in the range of 70-113 seconds, while drug content was in range of 99-98.64 % for phosphate buffer with pH 6.8 and for HCL buffer with pH 1.2 the percentage of drug content was 99.70-97.02%. Optimized formulation shows the 80.61% of drug released within 60 minutes.

The results indicated that, the optimized formulation of effervescent granules of Metoclopramide can be correlated with in-vivo studies in future, which can be a promising approach of drug delivery in conditions like GERD.

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IIMT2315

PREPARATION AND EVALUATION OF HERBAL DIGESTIVE TABLET

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The purpose of herbal digestive tablets is to relieve indigestion issues. One of the most common issues affecting people of all ages is gastrointestinal. Fast food consumption patterns are on the rise, and so is the prevalence of incorrect digestion. Numerous digestive tablets are available on the market, but their true purpose is concealed to make them taste better. In the current study, an effort has been made to create, produce, and evaluate herbal digestive tablets to treat indigestion issues. After carefully reviewing the Indian Ayurvedic formulary, the formulation of the digestive tablet was selected. A significant portion of the human population uses medicinal plants to cure a variety of illnesses, including digestive problems. Tablets also pass tests for hardness, friability, weight variation, and disintegration that are used in the evaluation of pharmaceutical products. Due to the less bitter medications used in herbal digestion tablets, they taste extremely wonderful. It is possible to prepare digestive pills on a wide scale using the tablet recipe.

IIMT2316

DO CARBAPENEMS HAVE A ROLE IN THE MANAGEMENT OF VALPROIC ACID POISONING

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Aim of the study: Valproic acid (VPA) is a widely used medication for the management of seizures and bipolar disorders. The interaction between VPA and carbapenem antibiotics is clinically relevant and has been well-documented in prior studies. We conducted this study to evaluate carbapenems therapeutic role in managing acute VPA poisoning.

Methods: We performed a retrospective assessment of scientific literature on cases of acute VPA toxicity with the intentional use of carbapenems. The following inclusion criteria were used: (1) the article is or contains a case report on (2) acute VPA poisoning and (3) intentionally takes advantage of the interaction between VPA and carbapenems. Articles on the interaction between VPA and carbapenems under normal therapeutic conditions were excluded.

Results: We collected data from eight documented cases that intentionally took advantage of the interaction between VPA and carbapenems. The mean age of the patients was 37±8.3 years, and four of the patients were women. In most cases, VPA was prescribed for bipolar spectrum disorders. Most patients initially presented with altered mental status and had initially elevated VPA concentrations. After the first carbapenem dose, VPA concentrations declined in all patients. The total administrated carbapenem doses ranged from one to four grams. After the short course of carbapenems, all patients showed improved neurological functions and rapid reductions in VPA concentrations. In addition, 59.62% to 99.26% reduction in VPA serum concentration over a period of 14 h to 6 days was observed with variable half-lives.

Conclusions: The therapeutic role of carbapenem antibiotics in the management of acute VPA poisoning is still unclear. This therapeutic interaction can be utilized to guard against aspiration pneumonia in patients with altered mental status or possible associated nosocomial infections, rather than a treatment method in VPA poisoning.

IIMT

DMT2317

FORMULATION AND EVALUATION OF HERBAL CREAM HAVING WOUND HEALING POTENTIAL

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A wound is a break of living tissue's biological, anatomical, and functional decency created by the physical, chemical, electrical or microbial warning to the tissues. Wound healing is defined as a complex process occurring by regeneration of damaged tissues. The normal response to wound healing is a concerted sequence of events that begins with a small or big injury. Wound healing agents support the natural healing process, reduce trauma and likelihood of secondary infections, and hasten wound closure. Various studies have been done to assess the wound healing potential of plants. Plant extract that has been used in most of these studies has shown comparable efficacy with respect to positive controls used. This study aimed at formulating and preparing a herbal ointment establishing the quality, wound healing efficacy and toxicity profile of the prepared herbal ointment. Methanolic extracts of leaves of the study plan were prepared. Standard tests for ointment quality and microbiological sterility were done. An experimental controlled study was carried out to determine the efficacy of drug which appears specific color with determined surfaces. The plants had the fastest rate of wound reduction, and the shortest epithelialization and healing times compared to the other treatment.

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IIMT2318

QUALITY BY DESIGN ADOPTED BROMFENAC-LOADED PLGA NANOPARTICLES FOR SAFE OCULAR DELIVERY.

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The primary drug delivery method used to treat ocular problems is topical instillation of medicines using eye drops. However, the reduced ocular bioavailability (< 5%) of such administration is a serious problem. The main causes of the decreased ocular bioavailability from conventional eye drops include poor corneal retention and penetration as well as quick drug clearance after topical instillation of ophthalmic formulation to the eye.

The development of Bromfenac sodium (BS)-loaded PLGA nanoparticles was accomplished by considering all the constraints, and the effects of various process factors on particle size and encapsulation efficiency were assessed by utilizing statistical design. It was discovered that the mean particle size and entrapment efficiency of optimized PLGA NPs were 157.7±14.56 nm and 54.2 6.25%, respectively. Also, the created, improved formulation revealed a biphasic release profile. Significantly improved transcorneal transport of BS was noted with PLGA NPs correspond to BS solution ($p<0.01$). The formulations' non-irritant potential was discovered via histological examinations.

By using the HET-CAM approach to evaluate the optimized formulation's safety profile, it was found that the developed nanoparticles were a potential carrier for ocular delivery. The created PLGA nanoparticles with the unique emulsifier and stabilizer may be a viable platform for efficient ocular delivery.

IMT2319

INSIGHTS INTO THE ROLE OF HERBAL POLYPHENOLS IN THE MANAGEMENT OF INFLAMMATORY BOWEL DISEASE

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Inflammatory bowel disease is one of the oldest idiopathic diseases which had been affecting GIT leading to inflammation and other problems like gastric irritation, and disturbed bowel evacuation. The exact mechanism for the development of IBD is still unknown, but experts believe that the disruption of gut flora, genetically originated GI issues, impaired homeostasis, and oxidative stress result in IBD. The recent treatment approaches rely on mainly the use of synthetic medicines in the form of monoclonal antibodies. But, the adverse effects of allopathic medicines are quite high, and it also results in a relapse of the symptoms associated with IBD. Hence, there is a need for an alternative therapy such as herbal dietary polyphenols.

The various herbal bioactive have been isolated from plants exhibit a wide range of pharmacological properties. Dietary polyphenols like resveratrol, vitexin, chlorogenic acid, epigallocatechin gallate, gallic acid, ellagic acid, etc., can be a breakthrough for the prevention and treatment of chronic disease in humans. This review examines the potential of polyphenols for treating IBD, highlighting cellular mechanisms and pharmacological properties.

Research confirms that dietary polyphenols hold both protective and therapeutic properties against IBD, acting mainly via various ways: down regulating the expressions of inflammatory cytokines and enzymes, enhancing antioxidant defense, regulating the balance of gut microbiota, restoring the epithelial lining, and modulating cellular signaling pathways.

IIMT

OMT2320

FABRICATION AND DEVELOPMENT OF HERBAL ANTIFUNGAL OINTMENT

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Skin infections caused by fungi are among the most prevalent dermatological issues today. According to research, 40 million people have fungal infections. Skin, keratinous tissues, and mucous membranes are all affected by superficial and subcutaneous fungal infections. Natural drugs derived from plants are still employed as therapeutics, particularly for the treatment of bacterial, fungal, viral, protozoal, helminthic etc. illnesses. The use of plant components to prevent fungal infections brought on by different pathogens is the main topic of this review. Therefore, it will prove advantageous for the pharmaceutical industry. Due to their moderate action, less poisonous nature, and enhanced effectiveness, herbs have seen an increase in demand for cosmetics over the past few years.

This review is focused on concentrating on cosmeceuticals designed to improve health. This polyherbal antifungal ointment contains extracts of the drugs like Neem, Turmeric, Origanum, and Citrus. Neem is known for its antibacterial property, While Turmeric is widely known for its natural antiseptic and antibacterial characteristics, which can be used as an efficient disinfectant. Because curcumin, the active component is present in it functions as an anti-microbial agent. It has been proven that the herb Origanum has anti-inflammatory, antifungal, analgesic, and antioxidant action. Origanum seeds contain thymol, which has antiseptic and germicidal properties.

Customers have tended to prefer herbal cosmetics since they are stronger, more widely accessible, and perceived to have less adverse effects.

IMT2321

PREPARATION AND EVALUATION OF HERBAL CREAM TO TREAT FUNGAL INFECTION OF SKIN

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One of the most prevalent skin conditions in people, fungi infections have a significant global impact. The current study's objective is to assess the potency of polyherbal mixtures. Creams are semisolid dose forms that are meant to be applied topically to the skin for medicinal or preventative purposes. These preparations are utilised for the localized effects that the drug's penetration into the skin's or mucous membrane's underlying layer produces at the application location.

The selected ingredients are made to treat cutaneous problems by delivering medication directly to the skin in the form of herbal creams are water and oil emulsions that are semi-solid. They are separated into two categories: creams that include small droplets of oil scattered in a continuous phase, known as oil-in-water (O/W) creams, and creams that contain small droplets of water dispersed in a continuous oily phase, known as water-in-oil (W/O) creams. In this cream the extract of Neem, Chakramarda, Marigold is used for the preparation of herbal antifungal cream for the treatment of several skin infections. Eucalyptus oil, cinnamon oil, clove oil, peppermint oil, thyme and other types of volatile oils are used to treat fungal infections. This combination has better efficacy against fungal infection. For fungal conditions including ringworm, scabies, itching, eczema, psoriasis, etc., herbal antifungal cream is quite helpful.

IIMT 2022

PHYTOSOME: A NOVEL DRUG DELIVERY SYSTEM

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Phytosomes are small structures resembling cells that are referred to as such due to their name's etymology. Specifically, the prefix 'phyto' denotes plant, while "some" refers to cell-like characteristics. Phytosome is a new technology used in Phyto-pharmaceuticals to increase the bioavailability and effectiveness of medicinal botanical extracts. It is a novel drug delivery system that contains hydrophilic phytoconstituents surrounded and bound by phospholipids. Phospholipids have a molecular structure with both water-soluble and fat-soluble components, which makes them effective emulsifiers and key components of cell membranes.

Phytosome has been found to provide better pharmacokinetic and pharmacodynamic responses compared to traditional botanical extracts. Phytosomes are utilized as dietary supplements and for the therapeutic treatment of both chronic and acute liver diseases due to their enhanced pharmacological and pharmacokinetic characteristics. The utilization of phytosome technology has proven to be an effective method to enhance the bioavailability of several popular herbal extracts such as milk thistle, Ginkgo biloba, grape seed, green tea, hawthorn, and ginseng. These complexes, which involve the combination of drugs and phospholipids, can be manufactured in various forms, including solutions, suspensions, emulsions, syrups, lotions, gels, creams, pills, capsules, powders, and granules.

The aim of this review is to highlight the phytosome technology, its preparation, various properties, and characterization.

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IIMT2323

HORSTAIL (EQUISETUN ARVENSE) AND THYME (THYMUS VULGARIS) FOR THE TREATMENT OF OSTEOPOROSIS AND METABOLIC DISEASE.

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Osteoporosis is a metabolic bone disease that causes bone loss over time, increasing the risk of fractures. The disease is usually silent and not known until a fracture occurs. Men and women are equally affected. But women are more likely to develop osteoporosis.

The main cause of fragility fractures in women is estrogen deficiency. For the treatment of osteoporosis, the potential biological use of traditional combination of two medicine which are horstail and thyme, both herbs has widely role in the treatment of osteoporosis. horstail (Equisetum arvense) are used for the treatment of osteoporosis (bone thinning) because it contains silicon, a mineral necessary for healthy bones, using natural source of horsetail plant extract contains silica , increases the body absorption of bone minerals such as calcium, which can relieve various structural diseases

In one study, 322 Italian women took horsetail dry extract or Osteosil calcium 270 mg twice daily (a horsetail/calcium combination used in Italy for the treatment of osteoporosis and bone fractures. Thymus vulgaris L, a medicinal plant containing many volatile compounds and essential oil, is widely used around the world and considered to be potentially protective against bone loss. These herbs can also help to prevent bone fractures causing osteoporosis, build cartilage for stronger joint, increase or boost calcium and help strengthen the connection between two harder bones.

IIMT2324

FORMULATION AND EVALUATION OF BAICALEIN-LOADED AQUASOME AS A POTENTIAL APPROACH FOR THE MITIGATION OF DIABETES MELLITUS

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Millions of people worldwide are affected by metabolic abnormalities caused by diabetes, an endocrine condition. Baicalein has potent anti-diabetic properties, but its usage is restricted because of its low aqueous solubility. Such drugs or bioactive molecules can be efficiently delivered via aquasomes, a tri-layered, self-assembled, non-vesicular nanoparticulate delivery system behaving like bodies of water.

Baicalein loaded aqua some was prepared sequentially in three step process viz preparation of core, coating with lactose, and finally drug loading. Optimized aquasomes were characterized for surface morphology by scanning electron microscope (SEM), and particle size by Transmission electron microscopy (TEM) which revealed the spherical shape of aquasomes and size in the range of 230 nm. Fourier transform infrared spectroscopy (FTIR) didn't report any interaction between the drug and excipients. Differential scanning calorimetry (DSC) was performed to investigate the thermotropic properties of the drug, drug- excipient, and aquasome. The formulation showed 94.06% drug entrapment and 17.60 % and drug loading. The in-vitro release study demonstrated sustained and complete (99.3%) drug release following first order release kinetics. The in-silico docking study was conducted on two most important target enzymes of diabetes namely α-glucosidase and α-amylase.

The result showed comparable anti-diabetic activity of baicalein as compared to acarbose. In-vitro α-amylase inhibitory assay was consistent with the docking results demonstrating promising inhibitory action of the formulation and the drug. Thus, baicalein loaded aquasomes can be a potential delivery system for mitigation of diabetes mellitus.

IMT2325

ROLE OF CARICAPAPAYA ASANANTI OXIDANT IN DEPRESSION

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Depression is a common mental disorder that presents with a depressive mood, loss of appetite, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep, and poor concentration. Research has shown that anxious and depressed individuals tend to think about their problems abstractly, concepts of depression including history and classification. The original broad concept of melancholia included all forms of quiet insanity.

The term depression began to appear in the nineteenth century, as did the modern concept of affective disorders, with the core disturbance now viewed as one of mood. The modern separation into uni polar and bipolar disorder was introduced to lowing empirical research. The partially overlapping distinctions between psychotic and neurotic depression, and between endogenous and reactive depression, the symptom element in endogenous depression currently survives in melancholia or somatic syndrome. Life stress is common in various depressing pictures. Dysthymia, a valuable diagnosis, represents a form of what was regarded earlier as neurotic depression. Other subtypes are also discussed.

Carica Papaya is commonly known for food and nutritional value throughout the world. The medicinal properties of papaya fruits and other parts of plants are also well known in traditional system of medicine since each parts of the papaya tree possess economic value it is grown on commercial scale during the last decades considerable progress has been achieved regarding the biological action and medicinal application of papaya.

IIMT2328

IN-VITRO ANTIOXIDANT AND IN-VIVO ANTI-HEPATOTOXIC PHARMACOLOGICAL INVESTIGATIONS OF COCCINIAINDICAIN ALBINO WISTAR RATS

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In this research investigation an attempt was made to perform research on pharmacological investigations to assess antioxidant and anti-hepatotoxic activities of fruits of Coccinaindica Wight & Arnagainst Paracetamol(PCM)in albino rats.

Coccinia indica fruits indicatedMSEV-8.6% WSEV-24.9% AIAV-1.783% WSAV-8.93% values and different fluorescence found in different wavelengths. Quercetin was found inmethanolic extract of Coccinia indica fruits (MECIF). High amount of TPC (3268.66 ± 5.26 mg GAE/100 g DW) and TFC (9.29 equivalentru/100 mg) were found in MECIF. TTC was found to be 22.38µg/mg and antioxidant activity by FRAP assay was found to be very significant. MECIF extract induced no mortality in rats up to 2500 mg and possess a very wide safety margin hence classified as Non-Toxic.

MECIF induced reduction in thiopentone induced sleeping time when compared to PCM treated animals. PCM (2gm/kg) for three weeks induced severe liver damage. Different doses of MECIF induced remarkable anti-hepato toxic activity but comparatively lesser than Silymarin (standard). Further, MECIF and Quercetin have prominent hypo lipidemic activity. MECIF treatment restored HDL level while alleviating the level serum cholesterol and VLDL. MoA of MECIF for anti-hepato toxic activity includes membrane stabilization; antioxidant; attenuation of depletion of glutathione; inhibition of Phospholipase A2; and enhanced protein synthesis.

IIMT 2327

PHARMACOLOGICAL ASSESSMENT OF ETHANOLIC ROOTS EXTRACT OF ASPARAGUS RACEMOSUSWILLD

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Asparagus racemosus contains bioactive compounds which have shown various pharmacological activities. This research work was undertaken as an attempt to establish scientific protocols to perform research on Ethanolic Extract of roots of Asparagus racemosus Wild (EERAR) for antioxidant activity and anti-inflammatory activities against carrageenan.

The TPC of EERAR extract was high (1262.82 ± 10.14 mg GAE/100 gDW. Mg GAE/100 gDW). Further TFC in EERAR Extract was found to be high (7.8 mg of quercetin equivalents/100 mg of crude extract). Subsequently, in-vitro antioxidant effect with ascorbic acid was 64.8 µg/mL followed and with EERAR extract was 60.4 µg/mL. EERAR extract also produced significant NO scavenging activity with IC50 value 94.24 µg/mL. Anti-oxidant activity of EERAR fractions by FRAP assay was found to be 1086.34±11.48 µmol FeSO4/gDW.

Further, in toxicity studies, blood RBC, Hb, Ht, MCV, MCH, PLT count, WBC count, glucose, creatinine and BUN while LFTs were unaltered in EERAR extract treated animals. EERAR indicated a very wide safety margin so it can be classified as Non-Toxic Constituent.

The edema inhibition was better with reference drug (38.32%) followed by EERAR -B (30.56%), and EERAR-A of Asparagus racemosus (24.76%) at 5th hour observation. Finally, Asparagus racemosus is recommended as anti-inflammatory and antioxidant medicine.

IIMT2328

ANTI-HEPATOTOXIC ACTIVITIES OF COMBINATION OF WEDELOLACTONE AND BERBERINE AGAINST PARACETAMOL AND ATRACTYLOSIDE INDUCED HEPATOTOXICITY IN ALBINO RATS

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Hepatotoxicity caused mortality and morbidity. Drug induced liver injury is caused by overdose / prolonged therapy of anti-tubercular drugs, paracetamol, antibiotics etc. and it effect large population across the globe.

In the present investigation an attempt has been made to perform in-vivo pharmacological investigations of to investigate anti-hepatotoxic effects of berberine in combination with wedelolactone against paracetamol and atractyloside to establish the mechanism involved in anti hepatotoxic activity.

Research works were started with isolation of berberine from Berberisaristata (bark) and wedelolactone from Eclipta alba (leaves). Their concentration was found to be 1.2% (berberine) and 2.2% (wedelolactone).

Paracetamol / Atractyloside induced hepatotoxicity (increased hepatic biochemical parameters) due to necrosis of hepatic cells. Treatment with berberine (100 mg/kg), wedelolactone (100 mg/kg), berberine in combination with wedelolactone (100 mg/kg each) and silymarin (standard (40mg/kg) produced significant elevation of hepatic biochemical parameters with reverse effects. Berberine in combination with wedelolactone produced very good anti-hepatotoxic effects by inhibition of Phospholipase A2, quenching of free radicals, attenuation depleted glutathione and membrane stabilization.

Conclusively, combination of Berberine and wedelolactone possessed higher antihepatotoxic property than the individual drug but less than the standard drug Silymarin. So, their use in combination is recommended in drug induced hepatotoxicity.

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IIMT2329

PHARMACOLOGICAL AND TOXICOLOGICAL EVALUATION OF DIVYA SWASARI CORONIL KIT (PATANJALI)

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In the present investigation an attempt has been made to assess the pharmacological potential of DivyaSwasari-Coronil-Kit (DCK) comprising of Coronil tablet, SwasariVati and AnuTaila for management and control of Covid-19 infections.

On evaluation, it was found that DCK containing Coronil Tablet, SwasariVati and AnuTaila. Coronil Tablet contains 25 SPMs from 03 Medicinal Plants. DivyaSwasariRasVati contains 89 SPMs from 09 Drugs where as AnuTaila contains 204 phyto constituents / SPMs from 27 Herbal Drugs. Coronil Tablet acts as immunity Booster. DivyaSwasariRasVati is useful in cold, cough, and other viral diseases. DivyaAnuTaila act internally for cooling brain and nerves. Improves sensory organs functions.

Antioxidant activities of the Coronil Tablet and SwasariVati extracts increased with increasing concentrations. Acute Toxicity studies clearly indicated that there was no mortality in rats upto2000 mg/kg/b.wt. Coronil tablet and SwasariVatiinduced a very wide safety margin so they should be classified as Non-Toxic Constituent.

Both Coronil Tablet and Swasari Vati increased swimming endurance. Coronil Tablet & Swasari Vati produced significant anti-inflammatory effects (significant decrease in edema). Besides effects were less significant than standard reference drug i.e. Indomethacin. Finally, paracetamol was found to be absent in Coronil Tablet and SwasariVati.

IIMT2330

IN-VITRO ANTIOXIDANT AND IN-VIVO ANTI-INFLAMMATORY ACTIVITIES OF ETHANOLIC EXTRACT OF FICUSLONGIFOLIALEAVES IN ALBINO WISTAR RATS

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This research work was undertaken as an attempt to establish scientific protocols to perform research on of Ficuslongifolialeaf antioxidant activity and anti-inflammatory activities against carrageenan.

The TPC of EELFL extract was high (126.44 ± 12.59 mg GAE/100 gDW, mg GAE/100 gDW). Further TPC in EELFL Extract was found to be high. Subsequently, in-vitro Antioxidant effect with ascorbic acid was 68.2 µg/mL followed and with EELFL extract was 65.8 µg/mL. EELFL extract also produced significant NO scavenging activity. Anti-oxidant activity of EELFL fractions by FRAP assay was found to be (117.88±12.28 µmol Fe5O4/g DW.

Further, in toxicity studies, EELFL slightly changed blood RBC, Hb, HL MCV, PLT count, WBC count, glucose, creatinine and BUN while LFTs were unaltered. EELFL indicated a very wide safety margin so it can be classified as Non-Toxic Constituent. Finally, it was found that EELFL extract induced RBC membrane stabilizing property (45.56% to 88.26%).

The edema inhibition was better with reference drug (35.67%) followed by EELFL-B Extract (30.23%) and EELFL-A Extract of Ficuslongifolia (25.92%) at 5th hour observation.

Finally, Ficuslongifolia is recommended as anti-inflammatory and antioxidant medicine. Much elaborated studies are also proposed to endorse the scientific findings of this research.

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IIMT2351

COMPARATIVE PHARMACOLOGICAL ASSESSMENT OF POLYHERBAL FORMULATIONS ANLYCURE DS SYRUP AND YAKRIAMRIT SYRUP

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In this research investigation, an attempt was made to perform research on a comparative pharmacological assessment of polyherbal formulations Amlycure DS Syrup (Almil Pharmaceuticals) and Yakriamrit Syrup (Nature Flip).

On comparison, it was found that Amlycure DS contains 32 herbal drugs (86 SPMs) which produced synergism with drug concentration 5486 mg/100 ml whereas Yakriamrit Syrup contains 08 herbs (25 SPMs) which provide 1055 mg/5 ml. Total phenolic contents of Amlycure DS and Yakriamrit Syrup were found to be 13.54 and 11.46 mg of GAE/g respectively. Polyphenol, tannins, flavonoids, and bitter principles in Amlycure DS and Yakriamrit Syrup induced antioxidant activity through significant superoxide radical scavenging activity, inhibition of lipid oxidation and by protection glutathione in the liver.

PCM (3gm/kg) with Alcohol (5 ml/kg b.w./day of 50% ethanol) for 21 days induced severe hepatotoxicity (caused acute liver damage due to decreased levels of catalase, glutathione peroxidase, glutathione reductase and superoxide dismutase). Histopathology shown necrosis, vacuoles, lymphocytic infiltration, and fatty degeneration.Two weeks oral administration of Amlycure DS (546 mg/kg) for 02 week, Yakriamrit(2.2ml/kg) for 02 week produced significant alleviation of LFTs, attenuation of depletion of glutathione, membrane stabilization (stop necrosis); increased proteins synthesis (RNA repair); anti-oxidant (stops lipid per-oxidation) activity. Anti-hepatotoxic activities were comparatively lesser then standard Silymarin.

IIMT2332

FORMULATION AND EVALUATION OF ANTIFUNGAL ACTIVITY OF GEL OF CRUDE METHANOLIC EXTRACT OF LEAVES OF OCIMUM GRATISSIMUM

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The use of herbal therapy has increased dramatically over the past few decades. Due to its natural origins and minimal side effects, it is becoming increasingly common in both developed and developing nations.

In this experiment, a herbal gel comprising methanolic leaf extract from Ocimum gratissimum was created and tested for antifungal activity. Carbopol-934P, Propylene Glycol, Methyl Paraben, Triethanolamine, and the necessary amount of water were used to make 20Gg of the base. The concentrations of plant extract (2, 4, and 6%) and carbopol-934P (0.9 and 1%) were changed to create various gel compositions. Six gel formulations were prepared and assessed for physicochemical tests that were Colour. Using the agar well diffusion method, the following properties were screened for their antifungal activity: pH, Viscosity, Spreadibility, Extrudability, Homogeniety, and Zone of Inhibition. Zone of blockage was visible in formulation F6. Wistar rats used in the skin irritancy trial with the F6 formulation did not show any clinical signs, making the gel safe and non-irritating.

The gel can be used to treat cutaneous mucormycosis, cutaneous aspergillosis, facial skin manifestations caused by Penicillium, vaginal candidiasis, and other skin diseases.

IIMT2393

ROLE OF PHARMACEUTICAL CHEMISTRY IN DRUG DISCOVERY AND DEVELOPMENT

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In the past, secondary metabolites from natural sources and chemicals developed from them have produced the majority of novel medications. Despite the fact that a number of medications have been unintentionally found, research has moved on to the next stage of drug development. Even while there are remedies for many conditions, new diseases or disorders require more specialized care.

The Pharmaceutical Biochemistry group's research spans the process of discovering new drugs and developing them into effective treatments. It serves as a bridge between pharmaceutical chemistry, biochemistry, structural biology, computational chemistry, and biopharmaceutics. From the perspective of pharmaceutical or medicinal chemistry, there are a number of processes for the chemical discovery and design of novel medications. They range from traditional techniques to some that are very recent, including molecular modelling or high throughput screening.

This wide range of interdisciplinary research activities and competencies enables us to address important issues in contemporary drug discovery and development, offers a strong platform for collaboration with other academic institutions and the pharmaceutical industry, and serves as an excellent training ground for pharmacists and pharmaceutical scientists who will later work in this area.

IIMT2354

EVALUATION OF ANTI-ARTHRITIC OF BOMBAX CEIBA PLANT

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Arthritis is the most common disorder of articular joints which affects knees, spines, hips, hand and feet. Rheumatoid arthritis (RA) is an autoimmune and inflammatory disease which means that our immune system attacks healthy cells in our body by mistake, causing inflammation (painful swelling) in the affected parts of the body.

In a joint with RA, the lining of a joint becomes inflamed, causing damage to joint tissue. The tissue damage can cause long lasting and chronic pain. Arthritis is regarded as a disease that has affected the huge proportion of world's population, these results in interfered them from good performance at work and in social relationship and causing disorder in millions of families. Therefore the research for new therapeutic agent considered a priority for the discovery of more effective form of treatment.

The purpose of this study is to evaluate the anti arthritic activity of the methanol extract of aerial part of Bombaxceiba plant. In the review, studies of various plants having anti arthritic activity are discussed. The plants which are selected having the probable anti arthritic activity are Nagarmotha (Cyperusscariosus), Tridax (Tridaxprocumbens),Semar (Bombaxceiba). The mechanism of action of phytoconstituents drive from these plants are discussed.

This review centralizes the phytoconstituents and their mechanism of action physiological activities as well as their extraction. This article basically emphasizes on the utilization of these traditional herbal plants in the treatment of arthritis.

IIMT2335

NOVEL TOPICAL BETA-ADRENERGIC BLOCKERS IN DIABETIC WOUND HEALING

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According to a study published in 2015 by the International Diabetes Federation, the total number of diabetic people is currently at over 415 million but is predicted to cross 640 million by the year 2040. Diabetic neuropathy is the major complication of the disease, leading to impaired wound healing or Diabetic foot ulcers. Innovative treatments for diabetic foot ulcers are expensive, challenging to administer at home or in the clinic, and in effect. Wound treatment contributes to the total expenditure of the management of diabetes, which increases in line with the prevalence of the disease.

Standard of care with precise glycemic control and adjuvant therapies for diabetic foot ulcers include skin grafting, hyperbaric oxygen therapy, acellular dermal matrix treatment, negative-pressure wound therapy, and local growth factor administration. Therapeutic alternatives, drug repurposing, and innovative wound-healing approaches, notably for diabetics, have motivated research.

Research has shown that catechol amines lengthen the neutrophil residence period in the wound, impairing the healing in animal wound models. Topical Beta-blockers can reverse this effect and increase healing. Beta-adrenergic blockers, block adrenergic receptors and increase keratinocyte proliferation and migration in diabetic wounds since the majority location of the theBeta-2 adrenergic receptors has been discovered on various skin cells. Beta-1 adrenergic inhibitors like Nebivolol, Esmolol, Timolol, Metoprolol, and non-selective (Beta-1+Beta-2)blockers Propranolol, have been patented for the treatment of impaired wound healing in the management of Diabetes mellitus. Such actions are shown by Beta-1 adrenergic inhibitorslike Nebivolol, Esmolol, Timolol, Metoprolol, and non-selective (Beta-1+Beta-2) blockers Propranolol etc. Recently, the drug Esmolol accomplishes the primary endpoint in Phase III clinical trial for Diabetic foot Ulcers. The drug Timolol maleate is also under a clinical trial.Many Beta-adrenergic inhibitors also have been patented for the treatment of impaired wound healing in diabetes mellitus.

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IIMT2336

MOLECULAR DOCKING OF DICLOFENAC SODIUM WITH HIPPOCHRIS ROSA AND MORINGA OLEIFERA EXTRACTS FOR ENHANCED THERAPEUTIC ACTIVITY: A COMPUTATIONAL STUDY

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A popular non-steroidal anti-inflammatory medicine (NSAID) that effectively reduces pain and inflammation is diclofenac sodium. It has, however, been linked to a number of adverse consequences, such as digestive issues. The goal of the current investigation was to determine whether it was possible to increase the activity of diclofenac sodium by molecular docking utilising plant extracts from Hippochris Rosa and MoringaOleifera.

To assess the binding affinity of diclofenac sodium with the active chemicals found in Hippochris Rosa and Moringa Oleifera extracts, a molecular docking study was carried out using the Auto Dock Vina software. The outcomes demonstrated that quercetin, kaempferol, and chlorogenic acid, among other active components in both extracts, had good binding affinity with diclofenac sodium, indicating possible synergistic effects.

Hydrogen bonds and hydrophobic contacts play a key role in stabilising the complex, according to further investigation of the molecular interactions between diclofenac sodium and the active chemicals. The findings imply that the active substances in the extracts of Hippochris Rosa and MoringaOleifera may improve the action of diclofenac sodium by enhancing its affinity for binding to the target protein.

In conclusion, the current study offers proof that the active ingredients in Hippochris Rosa and Moringa Oleifera extracts may work in concert to increase the therapeutic effectiveness of diclofenac sodium. This method might present a viable plan for minimizing the negative effects of diclofenac sodium while enhancing its effectiveness. However, more in vitro and in vivo research is required to confirm these results and demonstrate the efficacy and safety of the combination therapy.

IIMT2337

A REVIEW OF THE NATURAL PRODUCTS IN EFFECTIVE CANCER TREATMENT WITH THEIR MECHANISM OF ACTION AND LESS TOXICITY FROM THE PAST DECADES

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Cancer is a major world community health problem, related to chemotherapy treatments whose administration leads to other secondary problems. Oral cancer is one of the usual reasons of mortality in world, with a five year survival rate of only 50%. The OC is generally treated primarily by surgery with or without adjuvant radiotherapy / chemotherapy. But then again these treatments are commonly shows major side effects like loss of hairs, loss of appetite, neurons functional loss etc.

Nowadays natural products are leading candidates in treatment of oral cancer. There is a number of dietary supplements like fruits and vegetables that are rich in phytochemicals and provides a variety of antioxidants like vitamin A,C,E, Curcumin, NEEM, Green Tea, some medicinal Mushrooms.

This article gives you a brief knowledge about how natural products can act in fighting against oral cancer and prevent oral cancer by less toxic effects and higher efficacy.

IMT2338

MOLECULAR DOCKING STUDY OF CARDIOPROTECTIVE EFFECT OF BETA VULGARIS AND SALVIA MILTIORRHIZA PHYTOCHEMICALS AGAINST ANGIOTENSIN-CONVERTING PROTEIN THROUGH BIOVIA DISCOVERY STUDIO VISUALIZER

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Cardiovascular diseases (CVD) comprise a class of disorders including peripheral arterial disease, coronary heart disease, and angina pectoris, which block the blood supply to cardiac muscle and the brain due to aggregates formed by inflammatory and immune cells, platelets, oxidized lipids, and smooth muscle cells that proliferate in response to vascular endothelial injury.

Hypertension and Angina is one of the common health problems worldwide. Its prevalence is high, and it is considered a major risk factor for cardiovascular diseases and other complications. The first line of treating hypertension is considered diuretics, vasodilators, and ACE inhibitors. Some of the side effects caused by synthetic drugs are cough, kidney failure, skin rash, vomiting, diarrhea, fever, sore throat, and others.

The development of herbal medicines in novel drug delivery systems is the need of the hour. In this Study Phytoconstituents of Beta Vulgaris and salvia miltiorrhiza are docked against the ACE protein via Auto Dock software as mentioned in the protein data bank and it is observed that it shows good binding energy result respectively and hence it can suggest a synergistic effect of phytoconstituents of Beta Vulgaris and salvia miltiorrhiza on ACE enzyme which can be used for the cardioprotective activity.

Hence it can be concluded that in future these phytoconstituents can be used as safe treatment options. However, further clinical evaluations are needed for more studies.

IIMT

DMT2339

A NOVEL APPROACH FOR DRUG DELIVERY AS PROTEASOMES

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Proniosomes are dry formulations of water-soluble carrier particles that are coated with surfactants. They are rehydrated to form niosome dispersion immediately before use on agitation in hot aqueous media within minutes.

Proniosomes show their action after they are converted into niosomes. They can be easily hydrated by the addition of aqueous solvents. They can entrap both hydrophilic and lipophilic drugs according to the type of carrier and method of preparation used. Proniosomes are comparatively more advantageous than other vesicular carriers as they are more physically stable during storage and transport. Vesicular structure of proniosomes can protect the entrapped drug in the systemic circulation for longer period of time, can penetrate into target tissues more effectively, and is less toxic. They also possess better chemical stability and are free from many disadvantages which are generally associated with liposomes, including high costs and issues with phospholipids purity.

Various methods have been reported for preparation of proniosomes, such as coacervation phase separation method, slurry method and the spraying of non-ionic surfactant on water-soluble carrier particles.

The present review focuses on the preparation, characterization, and applications of proniosomes in effective delivery of wide range of therapeutic agents through different routes, such as oral, parenteral, transdermal, ocular, pulmonary, vaginal, and mucosal route. Thus proniosomes are promising drug delivery technology, having wide application in drug delivery and targeting therefore much research can be inspired in this area.

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IMT23340

TOPICAL DELIVERY OF BOSWELLIC ACID LOADED TRANSFEROSOMES FOR RHEUMATIC ARTHRITIS

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An efficacious, successful therapeutic treatment cannot be achieved in most cases, such as the occurrence of hepatic first-pass metabolism, adverse side effects, the rejection of invasive treatments, and poor patient compliance. To overcome these problems, One promising approach is the use of transdermal delivery systems.

Nanoencapsulation using a lipid-based vesicular system such as liposomes have been used to overcome the aforesaid challenge. Liposomes facilitate drug transport through the skin but they do not deeply penetrate into the viable skin and blood circulation. These major obstacles have led to the discovery and development of other novel vesicles such as niosomes , sphingosomes, bilosomes, chitosomes, transferosomes, ethosomes and invasomes.

Rheumatoid Arthritis (RA) is a most common inflammatory disorder. It may cause joint deformity if not treated timely. Rheumatoid Arthritis characterized by chronic pain, swelling at joints and destruction of joints. In our research we are working on boswellic acid loaded transferosomes for the treatment of rheumatic arthritis, this kind of formulation is not available in current days.

Transferosomes were used for non-invasive delivery of drugs into or across the skin. Transferosomes are also known as elastic liposomes or flexible vesicles which have better penetration ability than conventional liposomes. The transferosome were prepared by modified hand shaking, lipid film hydration technique.

Boswellic acid a series of penta cyclic terpenoid molecules produced by plants in the genus Boswellia.Boswellia is an effective anti-inflammatory (useful in rheumatic arthritis) and may prevent loss of cartilage.Boswellic acid transferosomes is a more effective formulation than the ones that were already in use.

IIMT2941

PHARMACOPHORE MODELLING: A NEWER DRUG DISCOVERY APPROACH

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After a century of research, pharmacophore methods have emerged as one of the most important, yet simple and straightforward ideas that may be employed in a variety of drug development and discovery applications. Pharmacophore modeling and 3D database search have been demonstrated to be effective techniques for enhancing screening tools aiming at discovering new bioactive drugs. These models are based on ligands and structures that continue to be important in hit discovery and may influence lead optimization.

Pharmacophore modelling and validation, virtual screening, virtual hits profiling, and lead discovery are all part of the pharmacophore-based drug design process. This drug design modelling, on the other hand, is valuable for ADME-to modelling, side effect and off-target prediction, and target identification.

Pharmacophores are frequently used with molecular docking simulations to improve virtual screening the history of the pharmacophore, followed by a discussion of improvements in methodology for pharmacophore identification from the genesis of the pharmacophore idea to contemporary innovations of more complex tools such as Catalyst, GASP, and DISCO.

However, this techniques have not yet reached their full potential, particularly in terms of decreasing the present high total cost of drug discovery and development thus more research on this technique should be done to attain the most potent drug.

IIMT2342

DYSMENORRHEA FOR THE HERBAL APPROACH

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Dysmenorrhea is the Greek word for painful menstrual bleeding that occurs during menstruation and is one of the common causes of pelvic pain and menstrual disorders. It can be classified into primary and secondary dysmenorrhea.

The main causes of secondary dysmenorrhea are endometriosis, ovarian cysts, pelvic inflammation, and infections. However, the pain-associated cause is due to the hypersecretion of the prostaglandins and increase uterine contractility. In women of reproductive age, the prevalence of dysmenorrhea can range from 16 percent to 90 percent with severe pain being reported in 2 percent to 29 percent of cases. The google scholar, pub med, Scopus, and other databases were searched for treating dysmenorrhea.

The motive of this study is to combine herbal uterine contraction drugs like ergometrine in the herbal approach for treating dysmenorrhea. Treatment includes prostaglandin synthetase inhibitors, non-steroidal anti-inflammatory drugs, and other oral contraceptives.

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DMT2343

LIPID-BASED NANO-CARRIERS TOWARDS MAJOR BARRIERS OF DRUG DELIVERY– BLOOD-BRAIN BARRIER AND SKIN

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The pharmaceutical and biomedical industries have produced the most astounding advancements in the fields of medicine, diagnostics, and medication delivery over the past few years. Tools based on the Potential of Lipid-Based Nanocarriers against Two Major Barriers to Drug Delivery–Skin and Blood–Brain Barrier nanotechnology have been extremely important in this. The application of this comprehensive nanotechnology idea promotes the development of cutting-edge methods and materials for raising patient compliance.

The development of lipid-based nano carriers with a special focus on barriers like the skin and blood-brain barrier (BBB), which have been described in the current publication, is prompted by the probable use of nanotechnology in medicine delivery. The restricted permeability of these two intriguing biological barriers prevents active molecules from passing through the skin and brain, leading to fruitless treatments for a number of linked diseases. This issue may be resolved by using lipid-based nanocarriers, which make it easier for medications to get through these barriers and increase their effectiveness. The composition, penetration mechanism, and current applications of these carriers are given particular attention in this review. It also contains the most recent studies, discoveries, and clinical trials in this area, as documented in patents.

The data given show that these carriers have the potential to be used as drug delivery methods across the skin (also known as topical, dermal, and transdermal distribution) as well as to the brain. This potential can be further explored to create safe and effective products.

IIMT2344

ADVANCEMENT OF PHARMACEUTICAL LIPOSOMAL DRUG DELIVERY SYSTEM

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In the form of drug delivery system an existing drug molecule can get a new life. Liposomes, is a form of pharmaceutical carrier in a drug delivery system that can be a major advance for solving the problems related towards the release of drug at specific site and specific rate.

Liposomes , due to their various forms, require further exploration. These structures can deliver both hydrophilic and hydrophobic drugs for cancer, antibacterial, antifungal, diagnostics, immune modulation, ophthalmic, vaccines, enzymes and genetic elements.

Preparation of liposomes results in different properties of these system. However, there are many factors and difficulties that affect the development of liposomes drug delivery structures. In additions, we discuss a new generation of liposomes, which is utilized for decreasing the limitation of the conventional liposomes.

IMT2345

PHYTOCHEMICAL STUDY AND SCREENING FOR ANTIMICROBIAL ACTIVITY OF LEAF EXTRACT OF CHOERESPONDIAS AXILLARIS

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Choerespondias axillaris(aipsi) is a large, deciduous fruit-bearing tree of the family Anacardiaceae. Native to hilly region in Nepal and Bhutan and also found in south-east Asian countries. The fruits of Lapsi are enriched with vitamin C and phenolic compounds, which are used to enhance the immunity. The plant is traditionally used in ayurvedic and unani systems of medicine for the treatment of various ailments.

The present study was designed to evaluate anti- microbial activity and phytochemical analysis of leaves extract of Choerespondias axillaris. For this study hydroalcoholic extract was prepared following NCI protocols. The phytochemical analysis revealed the presence of flavonoids, tannins and alkaloids in the leaves of plant extract. The antimicrobial activity was evaluated against pathogenic microorganisms like gram positive MTCC 96[S aureus], MTCC 737[S Aureus], NCTC 6571[S aureus], MTCC 740[S aureus] using methods like disk-diffusion method, broth microdilution, broth macrodilution, agar dilution.

The present study showed the effectiveness of the crude plant extract against the tested bacterial strains and indicates the potential use of the extract as antimicrobial agent for the control of infectious diseases. In vitro agar well assay exhibited highest antibacterial activity by CHHL showing an inhibition zone size of 13.00 ± 0.10 to 15.55± 0.12 mm while CHHS, CHDH, KCAD and KCAH exhibited inhibition between 10.67 ± 0.12 to 12.00 ± 0.10 mm.

IIMT2348

FORMULATE AND EVALUATE ACYCLOVIR LOADED ASPASOMAL TOPICAL GEL BY USING ALOE VERA GEL BASE TO ENHANCE SKIN PERMEATION OF THE DRUG AND REDUCE THE ASSOCIATED ORAL SIDE EFFECTS OF THE CRUG.

KISHORI SHUTAR

Objective:- The aim of the present study is to formulate and evaluate Acyclovir loaded Aspasomal topical gel by using an Aloe vera gel base to enhance skin permeation of the drug and reduce the associated oral side effects of the drug.

Method:- Acyclovir loaded Aspasomes were formulated by using Ascorbyl Palmitate, Cholesterol and Chloroform: Methanol in 5:1 ratio by Thin Film Hydration Method. Phosphate Buffer Solution (PBS) pH 7.4 was used to hydrate the film obtained. The formulated Aspasomes were further characterized for Drug Content, Vesicle Size, Poly Dispersibility Index (PDI) and % Entrapment Efficiency (EE). Optimized formulation of Acyclovir loaded Aspasomes was incorporated in Aloe gel base containing Carbopol 940 (1.5%). The formulated gels were characterized for pH, viscosity, spreadability, In- Vitro drug diffusion and Ex-vivo diffusion studies.

Results:- 3^2 Factorial Design (Design Expert Software) was used for the Optimization study. The optimized Aspasomal formulation (F8) showed % Entrapment Efficiency of 87.98%, Drug Content of 84.05% and Vesicle Size of 128.6 nm. The formulated Aspasomal Gel resulted to have a neutral pH value, with 1567 ± 0.21 cps viscosity and 6.5± 0.83gm.cm/sec spreadability. The In-Vitro diffusion studies (12hrs) and Ex-vivo diffusion studies (12hrs) revealed that Aspasomal gel released the drug in the range of 0.735% to 87.46% and 63.56% respectively and that of marketed Acyclovir gel released the drug in the range of 0.661% to 34.077% and 30.64% respectively, indicating the enhanced skin diffusion of aspasomal gel indicating that the formulated Aspasomal gel is a better carrier than the marketed gel for transdermal application.

Conclusion:- Optimized formulation (F8) showed better results in terms of pH, viscosity, spreadability and percentage drug release. In-vitro studies and Ex-vivo studies conclude that ACV loaded aspasomal Gel revealed controlled drug release (12 hrs) than the marketed gel. The stability studies showed no significant change in physical characteristics.

IIMT2347

A BRIEF ABOUT MUCORMYCOSIS (BLACK FUNGUS)

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A group of mycoses known as mucormycosis, often known as black fungus, are brought on by saprophytic fungi of the Mucorales order. Only a few Mucorales species are harmful to humans, but they can be invasive. It has become more challenging to recognise these fungus because of the various names they have undergone as their taxonomy has become clearer. Phycomycosis and zygomycosis are other terms for mucormycosis, however they are not helpful. Both Mucorales and Entomophthorales, which cause different diseases, are referred to as zygomycosis.

People with compromised immune systems are more susceptible to mucormycosis, including individuals with HIV/AIDS, uncontrolled diabetes, cancer patients receiving chemotherapy, and people with uncontrolled diabetes. Individuals who have recently undergone surgery or been through trauma may also experience it. those who take immunosuppressive medication. When left untreated, mucormycosis, which most frequently affects the skin, lungs, brain, and sinuses, can be fatal.

Mycotic diseases are not typically named for the fungus class that causes them. hence the terms mucormycosis and entomophthoramycosis are acceptable for the two illnesses brought on by the Mucorales and Entomophth orales, respectively. This article offers current details about mucormycosis.

IIMT2348

ROLE OF ANTIOXIDANT IN DEPRESSION

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Depression is a common mental disorder that presents with a depressive mood, loss of appetite loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep, and poor concentration. Research has shown that anxious and depressed individuals tend to think about their problems abstractly; concepts of depression, including history and classification.

The original broad concept of melancholia included all forms of quiet insanity. The term depression began to appear in the nineteenth century, as did the modern concept of affective disorders, with the core disturbance now viewed as one of mood. The modern separation into unipolar and bipolar disorder was introduced following empirical research. The partially overlapping distinctions between psychotic and neurotic depression, and between endogenous and reactive depression, the symptom element in endogenous depression currently survives in melancholia or somatic syndrome.

Life stress is common in various depressive pictures. Dysthymia, a valuable diagnosis, represents a form of what was regarded earlier as neurotic depression. Other subtypes are also discovered.

IIMT2349

PHYTOSOME : A NOVEL DRUG DELIVERY SYSTEM

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Phytosomes are small structures resembling cells that are referred to as such due to their name& etymology. Specifically, the prefix "phyto" denotes plant, while "some" refers to cell-like characteristics.

Phytosome is a new technology used in Phyto-pharmaceuticals to increase the bioavailability and effectiveness of medicinal botanical extracts. It is a novel drug delivery system that contains hydrophilic phytoconstituents surrounded and bound by phospholipids. Phospholipids have a molecular structure with both water-soluble and fat-soluble components, which makes them an effective emulsifier and a key component of cell membranes.

Phytosome has been found to provide better pharmacokinetic and pharmacodynamic responses compared to traditional botanical extracts. Phytosomes are utilized as dietary supplements and for the therapeutic treatment of both chronic and acute liver diseases due to their enhanced pharmacological and pharmacokinetic characteristics.

The utilization of phytosome technology has proven to be an effective method to enhance the bioavailability of several popular herbal extracts such as milk thistle, Ginkgo biloba, grape seed, green tea, hawthorn, and ginseng. These complexes, which involve the combination of drugs and phospholipids, can be manufactured in various forms including solutions, suspensions, emulsions, syrups, lotions, gels, creams, pills, capsules, powders, and granules.

The aim of this review is to highlight the phytosome technology, its preparation, various properties, and characterization.

IIMT2350

FORMULATION AND EVALUATION OF HERBAL CREAM HAVING WOUND HEALING POTENTIAL

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A wound is a break of living tissue's biological, anatomical and functional decency created by the physical, chemical, electrical or microbial warning to the tissues. Wound healing is defined as a complex process occurring by regeneration of damaged tissues. The normal response to wound healing is consented sequence of events that begins with an small or big injury.

Wound healing agents support the natural healing process, reduce trauma and likelihood of secondary infections and hasten wound closure. Various studies have been done to access the wound healing potentials of plants. Plant extract that have been used in most of those studies have shown comparable efficacy with respect to positive controls used.

This study aimed at formulating and preparing a herbal ointment establishing the quality, wound healing efficacy and toxicity profile of the prepared herbal ointment. Methanolic extracts of leaves of the study plan were prepared. Standard test for ointment quality and microbiological stability were done. An experimental controlled study was carried out to determine the efficacy of drug which appears specific colour with determined surfaces, the plants had the fastest rate of wound reduction, and the shortest epithelialization and healing times compared to the other treatment.

(IMT235)

EFFECT OF PLANT STAGES ON THE ANTI-OXIDANT ACTIVITY OF RUMEX VESICARIUS (HUMAIDAH)

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Introduction: Rumex vesicarius belongs to the family Polygonaceae and grows wild in Rafha, Northern Border Province, Saudi Arabia. It is used as a medicinal herb in treatment of liver diseases, digestive problems, toothache, nausea, antitumor, as anti-microbial agent etc.

Objective: The study was designed with the aim to evaluate and compare the phenolic content and antioxidant activity of the frontal and mature leaves of the plant.

Methodology: The leaves were collected and extracted with methanol. The total phenolic acid content of the methanolic extracts was estimated by Folin ciocalteu method, while the antioxidant activity was evaluated by using 1, 1-Diphenyl-2-picrylhydrazyl.

Result: The amount of phenolic acid was found to be more in the mature leaf when compared to the frontal leaf. The amount of phenolic acid was found to be 400.60±0.45 µgm in mature leaf extract when compared to the methanolic extract of the frontal leaf which contained 323.10±60 µgm. The extract of the mature leaf exhibited better antioxidant activity when compared the frontal leaf extract. The variance in the activity was credited to the stages of development which plays a key role in the production of plant metabolites.

Conclusion: The difference in the biological activity of the two extracts was attributed to the difference in the stages of growth. This could aid in ascertaining the best growth stage for harvesting of the plant.

IIMT2352

MODULATION OF BRAIN ANG(1-7) IN PKC PATHWAY IN DIABETIC NEPHROPATHY

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Objective: Angiotensin (1-7) has been identified as physiologically major content of the renin-angiotensin system. It exhibited that diabetic nephropathy (DN), which is prevalent causes of end- stage renal disease, reduces Ang (1-7) peripheral activity. RAS activity in the PNS is controlled by RAS in the brain. The goal of this research is to see whether cerebral angiotensin (1-7) with effective PKC signaling pathway a role in chronic diabetic kidney disease in wister rats.

Methods and materials: Single dosage of streptozotocin 50 mg/kg ip causes diabetes mellitus (DM). Two doses of valsartan and Ang (1-7) via various routes. After that there were testing of the samples. Commercially available kits were used to determine biochemical parameters linked to DN.

Results: When all/over was given to diabetic rats for 8 weeks, the mice displayed higher serum creatine, blood urea as well as protein in urine, as well as a decreased amount of serum nitrite. A 2-week course of intracerebral valsartan (100nmol/day) and Ang (1-7) treatment decreased such changes also elevated serum nitrite in rats with DN, but only in conjunction with valsartan (5 µg/day) separately or in combinations.

Conclusion: The findings of current research imply that brain Ang (1-7) is vital in RAS peripheral activity modulation in diabetic nephropathy, which might be attributed to Ang II peripheral activity and reduced central sympathetic outflow.

IIMT235053

FORMULATION DEVELOPMENT AND EVALUATION OF PRONIOSOMAL DRUG DELIVERY SYSTEM FOR DICLOFENAC SODIUM WITH ENHANCED TRANSDERMAL DELIVERY POTENTIAL

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The objective of the present research was to develop and evaluate the proniosomes of diclofenac sodium as a model drug to increase its solubility and permeation through skin for enhanced transdermal drug delivery in systemic circulation avoiding hepatic first-pass metabolism. The proniosomes were prepared by coacervation phase separation method and characterised for various evolutionary parameters like vesicle size, entrapment efficacies, in-vitro drug release studies by using semi-permeable membrane.

Results indicated that all the formulations were found to be smooth and spherical in shape and average particle size was found to be in the range of 17.52±1.54 to 25.23±1.02 (size influenced by agitation). Drug loading efficacy (%) of proniosomes was found in the range of 90.78±0.96 to 95.52±1.36. Entrapment efficacy was maximum for formulation PF4 and minimum for formulation PF8. The in-vitro drug release study was performed in phosphate buffer solution at pH 7.2 and by changing the combination of different types of surfactants the % drug release were found in the range of 85.12±3.82, 80.45±2.54, 83.87±2.92, 79.12±2.62 and 76.25±2.60 for formulations PF1, PF2, PF 3, PF 4, PF 5 and PF6 respectively.

Finally, present study conclusively demonstrated that drugs having poor water solubility showed enhanced bioavailability by transdermal route via proniosomes.

IMT2350054

PREPARATION AND EVALUATION OF HERBAL DIGESTIVE TABLET

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The purpose of herbal digestive tablets is to relieve indigestion issues. One of the most common issues affecting people of all ages is gastrointestinal. Fast food consumption patterns are on the rise, and so is the prevalence of incorrect digestion. Numerous digestive tablets are available on the market, but their true purpose is concealed in an effort to make them taste better.

In the current study, an effort has been made to create, produce, and evaluate herbal digestive tablets as a means of treating indigestion issues. After carefully reviewing the Indian Ayurvedic formulary, the formulation of the digestive tablet was selected. A significant portion of the human population uses medicinal plants to cure a variety of illnesses, including digestive problems.

Tablets also pass tests for hardness, friability, weight variation, and disintegration that are used in the evaluation of pharmaceutical products. Due to the less bitter medications used in herbal digestion tablets, they taste extremely wonderful. It is possible to prepare digestive pills on a wide scale using the tablet recipe.

BNT2355

ROLE OF BIOTECHNOLOGY IN PHARMACEUTICAL RESEARCH

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Biotechnology is a multidisciplinary sciences research field which uses living organisms or their parts to develop or modify products or improve plants, animals and microorganisms. Biotechnology and the world of colours are always connected to each other through biotech applications .This has encouraged the requirement to construct a classification system based on colours.

Advanced technologies and products are developed with in the areas include medicine (development of new medicine and therapies) agriculture (development of genetically modified plants, biofuels, biologically) or industrial biotechnology (production of chemicals, papers, textiles and food), environment (maintenance of biodiversity) However Biotechnology achieved considerable progress in the branch of healthcare sector. Pharmaceutical biotechnology is a relatively new and growing field in which all the principles of biotechnology are applied to the development of drugs. A majority of therapeutic drugs in the market are biotformulations such as, antibodies, nucleic acid products and vaccines. Biotechnology helps the pharmaceutical industry to develop a new product, new processes, methods and services and to improve existing ones.

This article is an inclusive review of use of biotechnology in the development of novel pharmaceutical products. It also covers the impact of biotechnology in research and invention related to different aspects of medicine. There is a widespread list Of biopharmaceutical products in healthcare management available for therapeutic use. In this review we are discussed about various classes of biotechnology-based products such as gene therapy, DNA fingerprinting, vaccines, biopharmaceuticals, stem cell therapy.

IIMT2356

NIOSOMES AS NOVEL DRUG DELIVERY SYSTEM FOR DIFFERENT ALLIGNMENT / DISEASE

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Niosomes are novel non-ionic surfactant-based vesicles, formed mostly by non-ionic surfactant and cholesterol incorporation as an excipient that may facilitate drug encapsulated in bilayer vesicles. They are structurally similar to liposomes as these are both composed of a lipid bilayer.

Niosomes are mostly preferred to liposomes because they are stable and cost-effective. Niosomes potentiate the pharmacological action of the drug molecules by delaying the clearance of the drug from the circulation, protecting the drug from biological environment and restricting the effects only to the target cells. In novel drug delivery it has applications on treatment of cancer, used as a carrier in haemoglobin, delivery of the peptide drugs through oral route, in treatment of leishmaniasis, in ophthalmic delivery and as carrier in dermal drug delivery.

This review article focuses on the composition, advantages, types of niosomes, methods of preparation, characterisation and application of the vesicular system.

IIMT2357

CALLISTEMON VIMINALIS: A REVIEW ABOUT ITS PHARMACOGNOSY, CHEMICAL CONSTITUENTS ITS PHARMACOLOGICAL AND BIOLOGICAL ACTIVITY

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Callistemon is a genus belonging to the own circle of relatives Myrtaceae. It encompass greater than 34 species of plant over it. In this newsletter we awareness on callistemon viminalis, which is likewise generally recognized with the aid of using the call of weeping bottle brush. It is located in particular in tropical Asia, Australia, Sri Lanka, India, and South America.

According to numerous studies and overview articles it's far located that C.viminalis have many pharmacological sports in its numerous parts. These sports along with antibacterial, antifungal, antioxidant, antiPalmonchic, antiplaudet, aggregation, insecticidaletic. It is wealthy with numerous phytochemicals phenolic compounds, glycosides, flavonoids, alkaloids, saponin, steroids, tannins and triterpenoids etc.

This article provides an overview approximately the phytochemicals found in C.viminalis and its pharmacological & organic sports.

IIMT2358

IMMUNIZATION: AN INITIAL AND IMPORTANT PART OF NOWADAYS LIFESTYLE

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Human body have a system which is an intricate siege & pathway to protect us against harmful microbes as well as certain diseases. But some diseases can't prevent or cure by human body own so the need to immunize their body against these diseases.

The process of immunizing the body by using vaccines is known as IMMUNIZATION. It is a process in which vaccines are given to someone to protect them towards the disease. Immunization can also be termed as vaccination, is a simple, safe, & effective way to protect someone against harmful disease, before comes in contact with them. According to WHO Immunization currently prevents 3.5-5 million deaths each year from illnesses like diphtheria, tetanus, pertussis, influenza and measles and many others.

This article contains information about immunization/vaccination, its types, importance, diseases which are cure or prevent by vaccination. This article also contains information about vaccination during COVID pandemic and types of vaccines used in COVID-19.

IIMT COLLEGE OF PHARMACY

IMT2359

CHITOSAN NANOPARTICLES LOADED HYDROGEL FOR WOUND HEALING

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Introduction: Wound healing is the dynamic process take place by regeneration or repair of broken tissue. Rhubarb and borax is commonly used worldwide for good antiseptic antifungal and antiviral properties. Chitosan is considered as an ideal material for wound healing due to its biodegradable, biocompatible, non-toxic, antimicrobial and biologically adhesive properties. Chitosan nanoparticles prevent the rapid clearance of drug from site of inflammation to the systemic circulation due to the vascularity and tissue permeability associated with inflammation. Hydrogels has appropriates for wound healing due to their ease of administration, wound protection, water retention and oxygen permeability.

Objective: To formulate and evaluate hydrogel based formulation using novel herbal combination for wound healing.

Method: Borax and rhubarb loaded chitosan nanoparticles were prepared by ionic cross-linking process with sodium lauryl sulphate. A Box-behnken statistical design was employed to study the effect of independent variables, polymer concentration (X1), cross linker concentration (X2) and drug concentration (X3) on dependent variables, average particle size, zeta potential, percent entrapment and % drug release. The optimum nanoparticles were then loaded into hydrogel. Wound healing effects of developed formulation was studied on excision wound models on rats.

Results and discussion: Average particle size and zeta potential of chitosan nanoparticles varied from 93- 222 nm and +30.82 to -35.08 mV respectively, depending upon the polymer, cross linker, and drug concentration. % entrapment and drug release was also found to be affected by concentration of independent variables. By pain prediction tool of design expert, the optimum values of polymer concentration (0.0598%-0.07 %), cross-linker concentration (0.460%- 0.542%) and drug concentration (0.7%-1%) were obtained with 85.0% to 108.57% experimental validity for different responses with - 8.67% to +14.99% prediction errors.

Conclusion: The results of a box-behnken design revealed that the polymer, cross-linker and drug concentration significantly affected the dependent variables, particle size, zeta potential, drug entrapment and % drug release.

IIMT2380

A STUDY ON THE EFFECTIVENESS OF HERBAL FORMULATIONS IN COMPARISON TO THE ALLOPATHIC APPROACHES IN DIABETES MELLITUS

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Background: One of the most prevalent endocrine disorders affecting the body's ability to create or use Insulin is diabetes mellitus (DM), often known as Type 2 diabetes or simply called diabetes. In layman's terms. Chronic metabolic illnesses known as DM include hypertension, hyperglycaemia, and others. Polyuria, polydipsia, and polyphagia are common symptoms brought on by a blood sugar increase. By 2040, the prevalence rate of diabetic individuals could increase from 415 million to around 642 million or more. 400 phytoconstituent-rich plant extracts have been found to have therapeutic effects against type II diabetes. There are around 1200 phytoconstituents isolated from medicinal plants that have been scientifically proven to have potential pharmacological activity against DM.

Objective: The objective of this study is to find cheaper alternatives to allopathic drugs for diabetes mellitus that produce lesser side effects and are easily accessible to people.

Methods: Exhaustive search was performed through online databases like Pubmed, Science Direct, Googl Scholar, and Scopus.

Conclusion: Based on a search through various articles and journals, it was found that Herbal approaches may have the potential in minimising the adverse effects caused by Allopathic pharmaceuticals and yield cheaper, accessible, and more reliable formulations for the treatment of DM.

IMT2361

FORMULATION AND EVALUATION OF POLYHERBAL OINTMENT TO OVERCOME ACNE VULGERIS

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Acne is a skin condition that results in the formation of pimples, blackheads, and whiteheads due to blocked hair follicles by dead cells. Topical retinoids, antibiotics, benzoyl peroxide, and salicylic acid are just a few o the drugs that are utilized to treat acne vulgaris. These drugs work by reducing inflammation, eliminating bacteria, and unclogging blocked pores.

We looked at using extracts from soil musli, forest bum, and chaff flower in our formulation to increase the potency of acne therapy. We evaluated the ointment's physicochemical characteristics, including pH, viscosity, and stability, to ensure its efficacy and quality. We then passed the ointment through in vitro and in vivo testing to see if it could treat acne.

Our results show that the vaastha bhasma and herbal extract-containing ointment have strong anti-acne activity by reducing the number of acne lesions and enhancing general skin health. The ointment was also well-tolerated and had no side effects. In conclusion, our research reveals that an all-natural treatment for acne vulgaris may be an ointment produced from yaastha bhasma and herbal extracts.

IIMT2382

TREATMENT OF PATIENTS LIVING WITH HIV

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There are two species of Lentivirus that infect humans. If the virus is not suppressed as soon as the patient is diagnosed with it. HIV causes Acquired Immune Deficiency Syndrome (AIDS), a condition in which progressive deterioration of the immune system allows life-threatening pathogenic infections which do not act usually but can occur due to weaker immune system and thrombocytosis to thrive. Depending on the HIV subtype, the average life expectancy reduces drastically down to about 9-11 years without immediate treatment. Non-sexual transmission can occur from an infected mother to her infant during gestation period, during labor by exposure to her blood or vaginal fluid, and through breast milk. Within these bodily fluids, HIV is present as both free virus particles and virus within infected immune cells. HIV infects vital cells in the human immune system, such as helper T cells (specifically CD4 + T cells), macrophages, and dendritic cells. HIV infection leads to low levels of CD4 + T cells through a number of mechanisms, including pyroptosis of abortively infected T cells, apoptosis of uninfected bystander cells, direct viral killing of infected cells, and killing of infected CD4 + T cells by CD8 + cytotoxic lymphocytes that recognize infected cells. When CD4 + T cell numbers decline below a critical level, cell-mediated immunity is lost, and the body becomes progressively more prone to opportunistic infections, leading to the development of AIDS.

IIMT2383

DEVELOPMENT OF HERBAL ANTIFUNGAL MOISTURE ABSORBING DUSTING POWDER

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The preparation of a topical powder for the treatment of fungus infections was intended in this work. Sometimes microorganisms enter the body and interfere with the skin's natural defenses, resulting in skin infections or illnesses. Skin illnesses can be brought on by bacteria, viruses, parasites, and fungi. As they affect the third layer of skin, fungus infections are more severe. Typically, signs of a fungal infection include crusted spots, hair loss, and itching red colour patches. This herbal antiseptic, antimicrobial Dusting powders produces from the Seeds of chakramarda. This dusting powder is affordable, simple to use, and both safe and efficient. Applying talcum powder topically has been shown to have antibacterial effects. It also heals wounds and skin lesions and protects mucous membranes by absorbing toxins. It treats both eczema and prickly heat rashes and encourages the growth of scar tissue. When combined with a natural medicine, it has effective antifungal properties. They undergo evaluation at various concentrations of 10%w/w, 20%w/w, 30%w/w, 40%w/w and 50%w/w. Among all these 20%w/w concentrations of talc provide better flowing property and antifungal property. Dusting powder with antimicrobial and antibacterial properties soothes and calms the skin. This will be used to clear up skin seborrhea and shield the skin from irritations from the outside. It is employed to treat ringworm, jock itch, athlete's foot, and other fungal skin infections.

IIMT2364

REVIEW: GOUT AND ARTHRITIS: AN OLD DISEASE WITH A FRESH PERSPECTIVE

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Rheumatoid arthritis (RA) is a chronic systemic autoimmune disease that primarily affects the synovial joint lining and is associated with progressive disability, premature death, and significant socioeconomic burdens. A better understanding of how pathological mechanisms drive the worsening of RA progression in individuals is urgently needed in order to develop therapies that will effectively treat patients at each stage of disease progression. We examine the etiology and pathology at four stages: I triggering, (ii) maturation, (iii) targeting, and (iv) fulminant stage, which is accompanied by hyperplastic synovium, cartilage damage, bone erosion and systemic consequences. The mainstay of RA treatment remains modern pharmacologic therapies (including conventional, biological, and novel potential small molecule disease-modifying anti-rheumatic drugs). Gout is an inflammatory disease characterized by the accumulation of Mono Sodium Urate in the joints. Non steroidal anti-inflammatory drugs relieve the joint infection quickly. Pain, redness, and swelling are the most common symptoms. Gout is diagnosed primarily by recognizing the signs and symptoms of Mono Sodium Urate crystals clumping together in the joints, particularly in the phalanges. Heavy alcohol consumption is a major risk factor in young people, and it can cause severe symptoms. Purine metabolism in the liver can result in both acute and chronic gout. As a result of repeated, throbbing attacks of severe arthritis, the treatment for gouty arthritis is classified into chronic and acute gout.

IIMT2385

REVIEW ON ALZHEIMER'S AND SCHIZOPRANIA

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The brain functions as the Central Nervous System's (CNS) control center. The brain is composed of a substantial mass of nerve cells that are encased in the skull. It controls the bodily intellectual processes, such as combining and coordinating the information collected by the sensory organs. The entire body is affected by any anomalies, illnesses, or disease situations in the brain. Neurological illnesses as well as infections of the neurons or tissue can affect the brain. Trauma or any other factor may result in damage. These damages directly affect the brain cells working in variety of ways. This results in the observation of neurodegenerative i.e. a condition in which brain cells gets degenerated like in case of alzhemier's or neuropsychiatric diseases which is a condition in which due to trauma brain cells working get hinders like in case of schizophrenia. However, for both the conditions there is currently no permanent treatment and these are life-threatening illnesses. So, we shall go into detail on disorders like schizophrenia and alzhemier's disease in this review.

IIMT2366

PREPARATION AND EVALUATION OF RHUBARB-LOADED MUCOADHESIVE GRANULES FOR PYLORIC ULCERS

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Objective: The aim of the present study is to prepare rhubarb loaded mucoadhesive granules for targeting to pylorus for the treatment of pyloric ulcers.
Methodology: Wet granulation technique was used to prepare mucoadhesive granules. Core which consists of rhubarb (0.5% w/v), hydroxypropyl methylcellulose (20%-20% w/v) and dibasic calcium phosphate (qs) were mixed together by doubling up in a dry blender. Ethanol was added in portions until a cohesive product was formed. After enough cohesiveness was obtained the mass was sieved through 10/12 mesh and dried at 60°C for 1 hour. In order to make enhance their mucoadhesive potential, polymeric granules were further coated by fluidized bed drier using Eudragit L100 (5% w/w) as a coating solution.
Results: The cumulative percent drug release from rhubarb loaded Mucoadhesive granules showed 35.22% to 92.14% release in 8 hours depending upon the concentration of mucoadhesive polymer.
Conclusion: A mucoadesive system was successfully developed which provides a synergistic mechanism of retaining to the pylorus because of high density and adhering with mucus membrane because of mucoadhesive properties, thus providing sustained local delivery.

IIMT2367

SILVER NANOTECHNOLOGY FOR WOUND HEALING

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Wound healing disorders affect millions of people worldwide, leading to increased mortality and associated costs. The ideal technique is used to achieve expeditious recovery of wound healing, reduces minimum scarring which ensure the function preservation. Topical treatment is the classical method to treat the wound management that is antibacterial and colloidal treatments.

Nanotechnology studies are having a submicroscopic particle (diameter of 100nm). Some metals which are used in nanotechnology like silver, gold, zinc are extremely used in dermatology, due to their beneficial effects on wound healing and preventing bacterial infections. Nanomaterial can excite the cellular and molecular processes that help in the wound microenvironment through antimicrobial, anti-inflammatory, and angiogenic effects.

In this paper we study about the new silver nanotechnology help in treatment of wound healing, the pathophysiology of wound, Types of nanoparticles used to treat the wound.

IMT2368

EVALUATION AND COMPARISON PARAMETERS OF VARIOUS PARACETAMOL MARKETED IN INDIA

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Background: Acetaminophen or paracetamol are the active metabolites of phenacetin. It is a popular over-the-counter pain reliever and antipyretic. It is 4-hydroxy acetanilide, chemically [acetaminophen]. All ages of people can reduce fevers using paracetamol. It is frequently used to treat headaches and other mild aches and pains, and it is a key component of many over-the-counter cold and flu medications. The wide variety of paracetamol brands and dosage options on the Indian and global market forces medical professionals to make drug substitution decisions if a specific brand isn't readily available. The current study's objective was to assess the quality control of four brands of 650 mg paracetamol pills that are sold and often prescribed in Indian and global markets.

Methods: Four different brands of 650 mg paracetamol tablets were obtained from retail pharmacies and their pharmaceutical quality was evaluated using in-vitro testing following USP and BP standards as well as informal norms that were advised by the producers. The tablet was evaluated for weight variation, hardness, friability, disintegration time, drug content and in-vitro drug release.

Results: Except for the hardness test, all brands passed the USP and BP standards in-vitro quality control tests required for the tablets. However, all goods met the requirements for hardness. As a consequence of passing both official and unofficial quality control tests, the results showed that the overall quality of all brands of paracetamol pills examined was satisfactory.

IIMT2389

TARGETED DRUG DELIVERY TO THE CENTRAL NERVOUS SYSTEM VIA NANOTECHNOLOGY BASED FORMULATION

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Aim: The present work deals with formulation development of nanotechnology based drug delivery system using odorant ligand for the treatment of neurological disorders via intranasal route

Background: Intranasal delivery offers a non-invasive and convenient method to bypass the BBB and delivery of therapeutics directly to the brain. When medication molecules come in contact with this specialized mucosa they are rapidly transported directly into the brain, skipping the blood-brain barrier, and achieving very rapid cerebrospinal fluid levels (often faster than if the drug is given intravenously)

Methodology: Surfactants and cosurfactants were grouped in two different combinations to construct pseudoternary phase diagrams. Formulations were selected from the o/w nanoemulsion region and were subjected to various thermodynamic stability and dispersibility tests. Optimized formulations were characterized for their percentage transmittance, droplet size and zeta potential.

Result: As compared to the two different ratios, Smix ratio of 1:0 showed the maximum NE region and was selected. However small droplet size as well as thermodynamic stable formulations was achieved, still zeta potential values was found to be very less and hence 3:1 combination was selected and optimized by DESIGN EXPERT. Box Behnken statistical Design was used to systemically investigate the effect of a wide range of independent and dependent variables, viz, polymer concentration as aqueous phase, oil concentration and surfactant concentration. On the basis of % transmittance, particle size and zeta potential, Formulation CP1 containing chitosan 0.07 %, oil 14.8% and surfactant [Tween 80: PEG 400 3:1, 40%] was selected among different checkpoint formulation and will proceed for further studies.

Conclusion: Formulation was successfully developed for CNS delivery

IMT2370

A REVIEW ON THERAPEUTIC EFFECT OF AMLA IN ANTI-AGING THERAPY

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One of the most important domestic plants in Indian traditional medicine is Emblica officinalis, also known as Indian gooseberry or Amla. In Sanskrit, amla is known as amalaki. Emblica officinalis comes in several forms that are useful for treating many disorders, but the natural products stand out for their tremendous pharmacological and therapeutic potential. Due to its ability to reduce excessive salivation and internal body heat, it is a common component in Ayurvedic medications and tonics. Significant bioactive material mixtures including tannins, alkaloids, polyphenols, gallic and ellagic corrosives, phyllembelin, quercetin, ascorbic acids, nutrients, and minerals, were discovered through phytochemical analysis. Different amla concentrations have potent antibacterial properties that can combat specific bacterial infections. Amla has been studied to see how effective it is as an antioxidant. Amla has positive effects on diabetes people, and the prevention of ulcers. Lipolytic and hematinic and properties of amla tonic are helpful in scurvy prevention, controls acidity and prevents indigestion as well as it is a natural source of anti-aging. Some Studies show that skin ageing due to protein & cellular DNA damage is the source of the ongoing deterioration process.

IIMT2371

Novel products as Promising Therapeutic Agents for Angiogenesis Inhibition

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Angiogenesis is the process of forming new blood vessels from pre-existing vessels. It is a crucial physiological process that occurs during development, wound healing and tumor growth. Angiogenesis can be either positive, as in wound healing, or negative, as in the case of certain cancers where the uncontrolled formation of new blood vessels helps to support the growth of the tumor. Angiogenesis plays a significant role in tumor progression at various stages. The cancer cells spread to new areas it can be stimulated by various factors including growth factors, inflammatory signals, tissue hypoxia, matrix metalloproteinases, hormonal imbalances and metabolic changes. Different growth factors such as basic Fibroblast Growth Factor (bFGF), Granulocyte Colony-Stimulating Factor (G-CSF) and Interleukin-8 (IL-8) bind with receptors located on the surface of vascular system and resulted in signaling cascade. Such signals induce migration and proliferation of endothelial cells. Anti-angiogenesis agents will prevent or slow down the cancer growth through interrupting the nutrients and blood supply to the tumor cells and this can prove beneficial for treatment. The discovery of several novel angiogenic inhibitors that help to reduce both morbidity and mortality have several life threatening diseases such as cancer exist. There is an urgent need for a new comprehensive treatment strategy combining novel antiangiogenic agents for control of cancer. Various angiogenic inhibitors that have been adopted by scientists to formulate and optimize such systems in order to make suitable for cancer. The results of several researchers focuses on novel antiangiogenic agents about their crucial role in controlling carcinogenesis.

IIMT2372

FORMULATION AND EVALUATION OF NIOSOMAL GEL OF ANIDULAFUNGIN DRUG

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In pharmaceutical industry developing a controlled dosage form has become increasingly important. Therefore various forms of Novel drug delivery system such as Transdermal drug delivery systems, Controlled release systems, Transmucosal delivery systems etc. has been developed. Transdermal delivery has been emerged as a novel tool over injectables and oral routes as it increases the patient compliance and avoids the first pass hepatic metabolism. Niosomes are currently being investigated extensively as a liposome substitute. It has been shown that a growing number of non-ionic surfactants can produce vesicles that can retain hydrophilic and hydrophobic molecules. The size distribution, drug entrapment effectiveness, zeta potential, and drug release profile of the niosomes were all characterized. The development of a niosomal gel formulation employing carbomers improved the topical application of niosomes much further. A pH, viscosity, drug content, drug release profile, and ex vivo deposition investigation were performed on the developed niosomal gel. The consistency of size and shape was validated by microscopic examination, and it was discovered to be between 102-215 nm. When compared to normal gel, the release from niosomal gel was significantly delayed, and drug deposition in the skin increased by two times. According to the stability research, vesicles are more stable at 4°C than they are at 25°C. By offering longer release profile, the new niosomal gel formulation of cytarin has demonstrated tremendous promise in the treatment of fungal infection, according to the results of the current experiment.

IIMT2373

Drug Invention and Development: A new Pharmaceutical approach

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The initiation of a new drug development programme for a different molecule is due to the existence of a disease or clinical state for which there are no effective pharmacotherapeutic products on the market. For various chemicals, there are various methods by which new drugs can be developed. Drug discovery initiatives lead to the production of substances that are examined in assays and on animals. To succeed, the molecules and create a product that is safe and has met all regulatory standards, these tests are conducted in vivo and in vitro on animals and on cell cultures, respectively. In clinical settings, there are two basic causes for drug failure. The first reason is if they are ineffective, and the second is if they are dangerous. The identification of a target and validation are the two most crucial difficulties to deal with in the drug invention processes. It is crucial to understand how the disease develops at the molecular, cellular, and genetic levels since this protein receptor may be linked to a disease state. In order to find one or more compounds that interact with the target and either neutralize or slow down the disease process, this is done by testing the target against several known and new compounds. The medicine producers apply for licenses to market their products in each country or territory once regulatory authorities have given their seal of approval. Post- marketing trials are done to evaluate the drug's safety in use.

IIMT2374

EMM A Unusual Blood Group: -Their Significance in Transfusion Medicine and Case Reports

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EMM is High Prevalence Antigen (HPA) red cells with it previously reported EMM antisera. Anti EMM appears to being responsible for a clinically significant acute hemolytic transfusion response. Former work done on EMM suggested that mk4396, located on a GPI anchored protein, but the antigenic epitope & amp; antibody have been figures. In India the first EMM-blood group donor was set up in a 65- Year-old man who was posted for a coronary thrombosis bypass grafting surgery in Rajkot (Gujarat). His blood was collected in EDTA was approached to the blood bank to give blood for transfusion. The case, gotcpnd AB RhD, had an antibody reacting with saline and low protein plasma. The case was recognizing the EMM in the new blood group system assigned with the symbol ISBT042. There are only 9 persons in the entire global having the event blood group (EMM). It is work, given the summary of event blood group, blood group system and case report of event. Also a case study of an Indian group a congenital in some type 1+2 event noticed from blood in north India which is present separating.

Key words: -EMM blood group, Blood group system, Hemolytic Transfusion Reactions (HTR), Case report, Inconsistent Blood Group System (IMC), Clinical significance

IIMT2375

Novel drug delivery system

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The field of nanomedicine employs novel drug delivery systems (NDDSs) to overcome the limitations of traditional dosage forms. Conventional formulations are associated with poor drug solubility, toxic side effects, lack of site selectivity, uncontrollable release profile, and low bioavailability. Furthermore, the frequent administration rates of conventional formulations lead to poor patient compliance. Recently, NDDSs have gained much attention mainly in cancer therapy and immunodeficiency diseases due to their high efficacy and stability. The aim of this chapter is to review the literature for SMART nanocarrier-based delivery systems and extended controlled release DDSs which maintain the concentration of the drug within the therapeutic window for a longer time, thereby lowering the frequency of administration. Also nanofluidic (MF), one of the most recent fabrication methods used to design and prepare NDDSs, has been discussed. MF can be used to create innovative pharmaceutical formulations and can also be applied to other biological and diagnostic purposes.DrugDrug formulations design is used to develop a drug delivery system (DDS) suitable for the administration of therapeutics while maintaining their concentration within the therapeutic range for the desired duration to achieve a therapeutic effect. It is important to thoroughly understand the required chemical, interfacial, mechanical, and biological properties of the formulation before selecting a suitable biomaterial for drug delivery purposes. This chapter illustrates the properties of DDSs required for various routes of drug administration with a specific focus on targeting drugs to the brain, colon, and cancer tissues. Examples of degradable and nondegradable polymers that are used in DDSs.

IIMT2376

PREFORMULATION STUDIES

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The most challenging situation or sight must for any formulation scientist or pharmaceutical Company is the time when the most successful drug or its formulation or promising dosage Form has to be recalled, due to unexpected changes. This is The stage where a planned preformulation study really helps in avoiding such efforts to a Larger extent. Preformulation studies found its way to its practical field by 1950 and early 1960. Preformulation study is a phase which is initiated once the new molecule is selected. In a broader way, it deals with studies of Physical, chemical, analytical, and Pharmaceutical properties related to Molecule and provides idea about suitable Modifications in molecule to show a better Performance. Study of these parameters and Suitable molecular modification can be Linked to generation of effective, safer, Stable, and reliable pharmaceutical Formulation. Therefore, preformulation Study is an approach for generation of Pharmaceutical formulation which utilizes Knowledge and area application of Toxicology, biochemistry, medicinal Chemistry, and analytical chemistry. The Highlighted chapter is framed with a vision To provide an in-depth knowledge about Pharmaceutical formulation development

IIMT2377

Fusarium Species Causing Root Rot in Indian Mulberry Plants

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This study aimed to identify the species of Fusarium causing root rot in Indian mulberry plants in Vietnam and to evaluate their pathogenicity. After conducting pathogenicity tests, F. proliferatum was identified as the primary pathogenic species. The identity of the fungus was confirmed through PCR and phylogenetic analysis, which compared the sequences of the ITS region and TEF1-α gene. The researchers also tested four nutrient media (CA, PDA, CDA, and YMA) to determine the best medium for the growth of F. proliferatum. PDA was found to be the most suitable medium for the fungus. Additionally, the study evaluated the optimal temperature and pH for the growth of F. proliferatum, finding that the fungus grew best between 20-30°C, with the highest growth rate at 25°C. The optimum pH range for growth was between pH 5.0-6.0, with the highest growth rate at pH 5.5. This study is the first to report F. proliferatum as the causative agent of root rot in Indian mulberry in Vietnam. Overall, this study provides valuable information regarding the identification, pathogenicity, and growth conditions of F. proliferatum in Indian mulberry plants. The findings may aid in the development of effective management strategies for root rot in this important crop. Further research could explore the genetic mechanisms behind the pathogenicity of F. proliferatum and investigate other potential causes of root rot in Indian mulberry.

IIMT2378

QLSSNPs: A Novel Natural Anticancer Formulation

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Drugs belong to the BCS class IV exhibit low solubility and low permeability. QL is potent anti-cancer drug candidate, but it has several drawbacks, such as a short half-life, bioavailability, poor solubility and poor stability. These factors affect its solubility as a good anti-cancer medicine. Extracted sago starch was used as a novel polymer to improve pharmacokinetics. Prepared QLSSNPs matched their preferences and offer high stability, high encapsulation efficiency, sustained and prolonged release with enhanced accumulation at target sites with high therapeutic efficacy. Sago starch and QL were used to formulate a new composition of nano-particles. QLSSNPs prepared by using Nanoprecipitation method. QLSSNPs were evaluated for their anti-cancer activity, particle size or zeta potential, drug entrapment and loading and in-vitro drug release. QLSSNPs showed significant cancer cell inhibition against cell line model.

IIMT2379

ADVANCEMENT IN TRANSDERMAL DRUG DELIVERY SYSTEM (PATCHES) & ITS APPLICATIONS IN PRESENT SCENARIO

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Transdermal drug delivery systems are topically administered medicaments. Transdermal patches are pharmaceutical preparations of varying sizes, containing one or more active ingredients, intended to be applied to the unbroken skin to deliver the active ingredient to the systemic circulation after passing through the skin's barriers, and it avoids the first pass effect. Transdermal patches deliver the drugs for systemic effects at a predetermined and controlled rate. Through a diffusion process, the drug exits the blendrosum directly through the skin. Since there is a high concentration on the patch and a low concentration in the blood, the drug will keep diffusing into the blood. the drug will keep diffusing into the blood for a long period of time, maintaining the constant concentration of drug in the blood flow. Characterization of the transdermal patch is used to check its quality, size, time of use & duration, adhesive property, thickness, the weight of patch, moisture of content, uniformity & consistent toxicological studies. The market for transdermal products has been in a significant upward trend that is likely to continue for the foreseeable future. An increasing number of TDD products continue to deliver real therapeutic benefits to patients around the world. More than 35 TDD products (Clonidine, Fentanyl, Nitroglycerin, Selegiline, and Rivastigmine) have now been approved for sale in the US, and approximately 16 active ingredients are approved for use in TDD products globally.

IIMT2380

Phytochemical Studies and In-vitro and In-vivo Pharmacological Investigations of Taraxacum officinale Weber (Dandelion) in Albino Rats

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Dandelion has been used in traditional medicine in Europe, North America, and China. So far, pharmacological investigations for anti-diabetic and anti-hepatotoxic activities of Dandelion in rats are not reported in literature. This research work was an attempt to establish scientific protocols to perform research on of Taraxacum officinale for in-vitro anti-oxidant and in-vivo anti-diabetic activity against streptozotocin and anti-hepatotoxic activity against paracetamol in albino rats[1]. T. officinale plant material indicated the presence of flavonoids, alkaloids glycosides, phenolic compounds etc. Total Phenolic Contents (TPC) and Total Flavonoids Content found to be higher in Ethanolic Extract of T. officinale leaves (EETOL) than Ethanolic Extract of T. officinale roots (EETOR). EETOL extracts also produced significant Nitric Oxide scavenging activity. Peripheral dosing flavonoids of EETOL and EETOR extracts of T. officinale possess significant in-vitro antioxidant properties. Paracetamol treatment for three weeks induced severe hepatotoxicity characterized by glutathione depletion, elevated LFTs, hepatic lesions (centrilobular necrosis, degeneration, inflammation etc.). EETOL-B showed a remarkable anti-hepatotoxic activity in two week treatment produced significant alleviation of LFTs levels, significant reversal effects and normal microscopical architecture of hepatocytes. Besides, it was also found that two week treatment of EETOL-B also significantly lowered the blood glucose level in streptozotocin induced diabetic rats and therapeutic effects were comparable with glipizide (Standard).

IIMT2381

NIOSOMES AS NOVEL DRUG DLIVERY CARRIERS

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Niosomes are novel drug delivery carriers comprising of microscopic lamellar non ionic surfactant based vesicles. Bilayer is composite comprising of both hydrophilic and lipophilic ends of surfactants arranged themselves into external and internal sites respectively. They herald in morphology makes them a unique carrier system. These are biodegradable , non toxic, comparatively more stable and inexpensive. The properties of these vesicles can be varied by altering the composition of vesicles, their size, surface charge, lamellarity and trapped volume. The structure of vesicles mainly depend upon various factors such as type of surfactant , cholesterol content, critical packing parameter (CPP), the type of drug used and method of preparation. Niosomes are potentially applicable for use as vehicle for poorly soluble drugs, for enhancing bioavailability, for encapsulating a variety of drugs (whether hydrophilic or lipophilic) and for better drug concentration at site of action for releasing the drug in a controlled and sustained manner. These can be easily administered by various routes like oral, parenteral and topical routes. The present review discusses the important features of niosome structure, different techniques for preparation, factors affecting their stability, characterization techniques, their therapeutic applications as well as their limitations and directions for overcoming them for future research. Thus niosomal drug delivery system has an optimistic upcoming role in pharmaceutical industry.

IIMT2282

Molecular Docking: an optimized tool for Drug Design

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Influenza (FAV) infection is common to pose clinical challenges, particularly in high-risk patients such as children, the elderly, and immunocompromised individuals. Antiviral drugs are important for treatment, especially with the emergence of novel viruses that may not be prevented by seasonal vaccines. The composition and timing of the administration of the vaccine are crucial to providing adequate immunity against influenza virus. Thus, the development of an antiviral drug with minimal toxicity may combat the burden of disease progression by suppressing influenza infection. The study shed light on the inhibitory effect of thymol and dandelion against FAV in A549 cells. Our results showed a reduction in virus infectivity and antiviral efficacy of thymol and dandelion. These herbal drugs will have fewer side effects and lower toxicity with high drug compatibility with each other in the combination drug formulations. The discovery of an antiviral drug is an important aspect of the measures spread of flu. With the emergence of new circulating viral strains, novel effective antivirals are needed urgently and with fewer side effects, resulting in the computational molecular docking of the antiviral drugs to enhance the drug-target interaction, which will provide the new antiviral drug with high efficacy against the virus. Molecular docking has been recognized as a fast and inexpensive technique that analyses the conformation and orientation of the atoms or molecules at the binding site of a macromolecular target. Different docking software can be used to get the best results for drug-target binding, such as AutoDock, Vina, GOLD, SwissDock, and many more. This study will give you the result of drug interaction compatibility and the binding affinity of the ligands to the target site of the viral protein through molecular docking and help to formulate the antiviral drug with a highly optimized structure and ligand-receptor binding affinity.

IIMT2283

ROLE OF NANOTECHNOLOGY IN NEUROENDOCRINE TUMOR THERAPY

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Nanotechnology has the implicit to revise the treatment of neuroendocrine cancer, a rare but aggressive form of cancer that affects the hormone-producing cells of the body. Neuroendocrine tumors (NETs) are generally slow-growing, but they can be aggressive and difficult to treat once they metastasize. One of the challenges in treating NETs is delivering remedies to the tumor cells without damaging healthy tissue. Nanoparticles can be designed to particularly target cancer cells and deliver medicaments directly to the tumor, adding the effectiveness of treatment and reducing side effects. Nanoparticles can be functionalized with ligands or antibodies that particularly bind to receptors on the face of neuroendocrine tumor cells. This enables the nanoparticles to widely accumulate in the tumor tissue, where they can release their remedial payload. In addition to medication delivery, nanotechnology can similarly be employed for imaging and detection of neuroendocrine tumors. Imaging agents grounded on nanoparticles can enhance the accuracy of diagnosis and enable earlier discovery of the disorder. Nanoparticles can similarly be functionalized with multiple imaging agents, enabling the discovery of multiple parameters contemporaneously. Overall, nanotechnology has the implicit to significantly enhance the treatment of neuroendocrine cancer by perfecting targeted drug delivery, improving the accuracy of diagnosis, and reducing side effects associated with traditional cancer remedies. additional exploration is demanded to optimize nanoparticle design and develop safe and productive nanotechnology- based remedies for neuroendocrine cancer.

IIMT2384

INSIGHTS INTO THE POTENTIAL ROLE OF POLYETHYLENEIMINE FOR TARGETING MELANOMA

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Polyethyleneimine (PEI) is a cationic polymer composed of repeating units of amino groups and ethylene (CH_2CH_2). It originates from the ring opening of aziridine, also called polyethylenimine, ethylenimine (poly aziridine). It is widely used as a cyclodextrin polycation in various biomedical applications due to its chemical functionality. However, unmodified PEI has several drawbacks, including cytotoxicity, a lack of biodegradability, dosing, poor ability to transfect low molecular weight homologs. To enhance effectiveness, several strategies, like carboxylation, acetylation, hydroxylation, PEGylation, and adding various functional groups (folic acid, hyaluronic acid, fluorescent tags, and proteins) have been implemented. These methods effectively reduce or shield the positive charge of the PEI, thus reducing cytotoxicity. PEI was used particularly to heparan sulfate proteoglycans, which are overexpressed on the surface of melanoma cells. Due to these characteristics, drugs can efficiently target carcinogenic cells without harming healthy cells. The co-delivery of anticancer medications like paclitaxel (PTX), doxorubicin (DOX), and carboxymethyl pullulan (Pu), branch PEI has been employed. Excellent drug biocompatibility was achieved by the PEI-based co-delivery system for chemotherapeutic agents, and it may be a potential drug administration method for treating cancer. Overall, PEI and modified PEI can be efficiently used as potential agents for melanoma targeting.

IIMT2385

NANOCARRIERS OF ANTIFUNGAL AGENTS FOR THE TREATMENT OF FUNGAL INFECTIONS: AN OUTLINE

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The high prevalence of fungal infections has risen to a worldwide public health issue, exacerbated by an increase in host predisposing factors. Although presently, the antifungals which are effective in treating these fungal infections are commercially generous, investigators have obligatory ways to optimize the drugs thanks to limited penetration through tissue, poor oral solubility, reduced bioavailability, drug efflux issues and dugout resistance, side goods, and poor drug pharmacokinetics. Hence, during the last two decades, the use of NPs drug- delivery systems to enhance the range of antifungal functions has gained a prominent place in anti fungals' optimization. In current times, the evolution of nanomaterials including liposomes, aerosols, ceramic nanoparticles, carbon-predicated nanomaterials, titanium dioxide nanoparticles, iron oxide nanoparticles, polymer nanoparticles, dendrimers, substrate nanoparticles, gluconous nanoparticles, silica nanoparticles, etc. These new nanotechnological systems should be suitable to surpass the issues formerly mentioned and should also mean a significant upgrade when compared to the conventional treatments. Fighting antifungal resistance, presenting a broad diapason of exertion, with an emphasis on energy increase and little host toxin, therefore having the eventuality to be industrially produced. Nanoparticles have been presented as promising results, substantially due to their capability to target specific spots where fungi are harbored, and their capacity to enhance the pharmacological effect of medicines, optimizing their physicochemical characteristics, thereby allowing an administration through a more comfortable route. All these features can enable lower dosing, more comfortable rules, increased bioavailability, and less serious adverse goods.

IIMT2386

An advance approach to treat wounds using herbal constituents

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The Breaking of the skin's or mucous epithelial lining's uniformity is 'WOUND'. Acute wounds and chronic wounds are the two forms of wounds. Acute wounds, which are those caused by mechanical injury, radiation exposure, electrical shock, or exposure to corrosive chemicals, can be treated quickly, but chronic wounds take a long time to heal and may even relapse as a result of underlying conditions like diabetes, cancer, obesity, and others. The treatment used to treat a wound is called a wound dressing. Incision, excision, and burn wounds all required different types of dressings. Since the inception of civilization, people have emphasized the use of natural treatments for wound dressing, such as aloe, tea tree oil, turmeric, gotu kola, and honey. For many years, many types of wounds have been treated using plants and constituents produced from plants. Currently, different herb/plant extracts are being researched in an effort to develop a delivery system for the treatment of wounds that is affordable, long-lasting, durable, as well as dependable. Modern synthetic drugs are very expensive, sometimes dangerous, and have withdrawal symptoms. Recent studies have concentrated on boosting the effectiveness of herbal ingredients by combining them into advanced drug delivery systems such transdermal patches, hydrogel, microspheres, and nanofibers. In this review, we have focused on the recent advancements in the field of herbal constituents for the treatment of wound healing.

IIMT2287

A Review On Use Of Casein Polymer To Increase The Oral Bioavailability Of Poorly Bioavailable Anti-Cancer Drugs

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One of the most crucial elements for the formulation's efficacy has been bioavailability. Most oral anticancer medications have severe drawbacks, such as high pharmacokinetic (PK) fluctuation that may cause side effects or failure of therapy. The limited oral bioavailability of several anticancer medications is primarily a contributor to this heterogeneity. Anticancer medications' poor physicochemical qualities, along with physiological constraints, contribute to their limited bioavailability through oral administration. Numerous anti-cancer medications' poor oral bioavailability along with solubility have forced scientists throughout the globe to rethink the way they administer pharmaceuticals. To boost the bioavailability of these medications, the application of polymers from nature has grown recently. Due to its amphiphilic character, which may bind both hydrophilic or hydrophobic medications, casein polymer has demonstrated promise in enhancing the bioavailability of anticancer medications. A variety of medications can bind to casein that assembles itself into micelles in aqueous solution. Casein milk is one of the most commonly consumed proteins due to the large amount of casein found in milk. Casein is more than just a protein from food. Its attributes suggest novel and unexpected scientific, pharmacological, as well as functional food applications. Scientists from all over globe are interested in casein because of its unique properties. The work of numerous scientists to increase the oral bioavailability of anticancer medications with low oral bioavailability has been the focus of this review.

IIMT2388

Disease detection by biorobotics

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Disease detection is a crucial aspect of modern medicine, enabling early diagnosis and treatment, which can significantly improve patient outcomes. In recent years, biorobotics has emerged as a promising approach for disease detection, leveraging the capabilities of robotic systems to perform non-invasive, highly precise, and repeatable measurements. This paper presents an abstract of recent research on disease detection by biorobotics, covering various aspects of the field, including the design of novel sensing technologies, the development of intelligent algorithms for data analysis, and the integration of biorobotics with other medical technologies. Examples of diseases that have been targeted by biorobotics-based detection systems include cancer, Parkinson's disease, and heart disease. Overall, the results suggest that biorobotics has the potential to significantly enhance disease detection capabilities, leading to earlier diagnoses, more targeted treatments, and better patient outcomes. However, there are still challenges to be addressed, including the need for more robust and reliable sensing technologies, the development of more sophisticated algorithms for data analysis, and the integration of biorobotics with existing medical infrastructure. Future research in this area is expected to address these challenges and further advance the field of disease detection by biorobotics.

IIMT2289

Design and characterization of Nanosponges loaded Itraconazole Vaginal gels

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Objectives: The goal of the current effort is to create and analyze a bioadhesive vaginal gel that is loaded with Itraconazole nanosponges to ensure longer residence time at the infection site, providing a favorable release profile for the drug.

Methods: Nanosponges was prepared by solvent evaporation method in various ratios of Itraconazole to β-cyclodextrin. Physicochemical evaluation of Nanosponges includes determination of solubility in simulated vaginal fluid, partition coefficient (n-octanol/citrate phosphate buffer pH 4.5), particle size distribution, entrapment efficiency and surface morphology by scanning electron microscopy (SEM).

Drug excipient compatibility was established by Fourier transform infrared and differential scanning calorimetry analysis. Bioadhesive gel was prepared using Carbopol 934P and HPMC K4M in various concentrations and methyl paraben was used as a preservative. The pH was adjusted with triethanolamine which resulted in a translucent gel. The optimized Itraconazole nanosponges formulation was dispersed into the gel base.

Nanosponges in gel formulations were evaluated for pH, viscosity, spreadability, drug content, and gelling strength. Ex vivo mucoadhesive strength of the gel was determined on goat vaginal mucosa. In vitro drug release study was performed using cellophane membrane.

Results: The optimized batch of F4 Nanosponges (drug:polymer ratio 1:4) showed entrapment efficiency of 85.6%, solubility of 3.5 mg/mL and partition coefficient of 0.13. Particle size of all the formulations was observed below 95 µm. Regular and spherical particles were observed in the SEM photomicrographs. The optimized gel formulation VG5 (Carbopol and HPMC at 1: 0.25 ratio) showed viscosity of 9032 cps at 100 RPM, gel strength recorded as 30 seconds for a 1000.00 mg load, and spreadability of 4.8 g.cm/seconds. VG5 showed 89.4% drug release in 10.0 hrs and mucoadhesive strength of 6.7±1.2 g.

Conclusion: The study results suggest that Itraconazole-loaded β-cyclodextrin Nanosponges in mucoadhesive gel would provide a route for sustained treatment of vaginal infections.

IIMT2390

Nanoparticles: The Future of Beauty and Skincare

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Nanotechnology is one of the most promising and progressive fields. In recent a long time, nanotechnology has been extensively used and has additionally verified useful in dermatological, cosmetic and biomedical applications. Scientists have invented new technology and new applicative systems which are presently getting used within the beauty industry. As the usage of cosmeceuticals increases, traditional delivery systems structures are being changed by means of new delivery routes. Now nanovesicles currently in use are liposomes, transfersa, NFTs, SLNs, gold nano-particles, nano-emulsions, and various commercialized nanoworlds. these new delivery system have outstanding capacity to reap various elements which includes managed and centered drug delivery, website online specificity, higher stability, bioavailability, longer duration of movement and higher drug loading ability. Nanotechnology utilized in cosmeceuticals highlights the numerous new procedure used to deliver cosmeceuticals, discusses the high qualities and poor aspects of nanocosmetics, formulations, security, and regulations.

IIMT2391

ANTIBIOTICS RESISTANCE IN DIGITALIZED INDIA

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In this digitalized world and specifically in India, the consumption of Antibiotics drugs is on the rise. This has led to many health hazards and even more so, the rise in antibiotic resistance. However, there is no doubt that the increased use of antibiotics has caused some inconvenience. At the same time, however, we do need to be careful in the use of these drugs to prevent them from being more ineffective. Furthermore, if we want to look the rise in antibiotic resistance,we need to try to use antibiotics appropriately. In addition, we need to make sure that we use these medicines only for the shortest possible period. Otherwise, the spread of antibiotic resistant superbugs could lead to unimaginable disasters and be very damaging to all the lives that we have. Therefore, in this article, we shall discuss the need to use antibiotics more responsibly and in a better manner so that we can reduce the rate of antibiotic resistance and keep patients from getting serious infections that could eventually lead to death. In this article, we will also discuss the role of community pharmacists in the fight against antibiotic resistance and the importance of public awareness regarding proper antibiotic use and how to take them the right way. We will then present some possible ways in which community pharmacists can play a more prominent role in this fight. Finally, we will provide recommendations and suggestions to help community pharmacists in their effort to combat the problem of antibiotic resistance.

IIMT2392

ACCELERATING ACCESS: THE EXPEDITED DRUG APPROVAL PROCESS IN THE UK

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The expedited drug approval process in the UK is focused on accelerating the evaluation and approval of promising medicines for patients in urgent medical need. This process encompasses various initiatives, including the Early Access to Medicines Scheme (EAMS), Project Orbis, and the 150-day assessment for national applications. EAMS is a regulatory pathway that allows patients with life-threatening or debilitating conditions to access innovative medicines before formal approval. Its goal is to speed up the availability of cutting-edge treatments by expediting the evaluation and approval process, offering hope to patients who have limited treatment options and need urgent access to new therapies. Project Orbis is a global collaborative initiative involving regulatory agencies from multiple countries, including the UK. Its objective is to streamline the review and approval of cancer drugs through simultaneous evaluation and coordinated decision-making, with the aim of expediting access to promising cancer treatments. The 150-day assessment timeline for national applications in the UK ensures a timely review of medicines by the Medicines and Healthcare Products Regulatory Agency (MHRA). This timeline strikes a balance between expedited evaluation and robust scientific assessment, encompassing thorough evaluations of the safety, efficacy, and quality of medicines through data analysis, risk-benefit assessment, and stakeholder engagement. These initiatives promote collaboration among regulatory agencies, expedite the evaluation and approval process, and prioritize patient safety and well-being through rigorous scientific evaluation and maintain high standards of public health.

IIMT2393

Herbal Medicines in the treatment of: Cancer

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Cancer is actually a group of many related diseases but all have to do with cells. Cancer is one of the most common and dangerous health issues affecting the human population worldwide, and its occurrence is increasing rapidly. Cancer caused the uncontrollable division of the cells, which can ultimately result in tumors, destruction of the immune system, and other damages that can lead to death. Cancer is a very vast terminology. There are many types of cancer, some of which grow due to the process of cell growth, while in other bad ones allow the cells to grow and get divided at a steady speed. The research on the subject of carcinogenesis is of high interest to both scientific research as well as clinical practice. In order to decrease the frequency & severity of negative or toxic effects relevant to the oral or parenteral administration of chemotherapeutic medications, the use of herbal medications could be a better option. The development of herbal medicines is the way that helps in understanding the different pathological mechanisms, aiming to fulfill the procedure of toxicological screening and drug development. Medicinal herbs and their derivative phytocompounds are being increasingly acknowledged as useful treatments for cancer. Many clinical studies have reported the beneficial effects of herbal medicines on cancer patients' survival, immune modulation, and quality of life when these herbal medicines are combined with many other conventional therapeutics. Currently, many herbal plants are trusted by the public as anticancer drugs, as shown by several studies and the availability of herbal plants is relatively easier to find in the public. In addition, medicines from plants and herbs can also be used to prevent and treat cancer. All things considered, this review will discuss herbal plants that can be used as anticancer treatments all over the world.

IIMT2394

Development of Herbal Antifungal Moisture Absorbing Dusting Powder

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The preparation of a topical powder for the treatment of fungal infections was revealed in this work. Sometimes microorganisms enter the body and interfere with the skin's natural defenses, resulting in skin infections or illnesses. Skin illnesses can be brought on by bacteria, viruses, parasites, and fungi. As they affect the outer layer of skin, fungal infections are more severe. Typically, signs of a fungal infection include crusted spots, hair loss, and itching and odour patches. This herbal antiseptic, antimicrobial Dusting powders produces from the Seeds of chaksusmada. This dusting powder is affordable, simple to use, and both safe and efficient. Applying talcum powder topically has been shown to have antibacterial effects. It also heals wounds and skin lesions and prevents excess exudation by absorbing tissue. It treats both eczema and prickly heat rashes and encourages the growth of scar tissue. When combined with a natural medicine, it has effective antifungal properties. They undergo evaluation at various concentrations of 10%w/w, 20%w/w, 30%w/w, 40%w/w and 50%w/w. Among all these 30%w/w concentrations of talc provide better flowing property and antifungal property. Dusting powder with antimycotic and antibacterial properties soothes and calms the skin. This will be used to clear up skin infections and shield the skin from irritations from the outside. It is employed to cure ringworm, jock itch, athlete's foot, and other fungal skin infections.

IIMT2395

Natural Compounds Used in The Treatment of Non-Alcoholic Fatty Liver Disease (NAFLD) by Activation of PPARγ/Nrf2 pathway

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Non-Alcoholic Fatty Liver Disease (NAFLD) is a condition that develops when the liver accumulates too much fat for reasons other than drinking alcohol. This chronic liver ailment progresses along with IR and is typically not diagnosed until the patients have cirrhosis. The nuclear hormone receptor super family peroxisome proliferator-activated receptors (PPAR), comprising of the three subtypes PPARα, PPARγ, and PPARβ/δ, which are essential for the metabolism of fatty acids and glucose. The liver's lipid metabolism is regulated by PPARα, and PPARβ/δ encourages fatty acid oxidation.PPARγ, which is known as "energy-balanced receptor", has been shown to be a crucial regulator in both IR and NAFLD. It is highly expressed in adipose tissue, where it accelerates fatty acid uptake into adipocytes and increases insulin sensitivity, thereby reducing fatty acid flow in the liver. Nuclear factor E2-related factor2 (Nrf2) is important for PPARγ activation. However, the partial PPARγ activation could lead to an increased adiponectin level and insulin sensitivity, than it would be a benefit to NAFLD and IR. Because of less side-effects, natural compounds are emerged as potential therapeutic agent for NAFLD by activating PPARγ and Nrf2. Several natural compounds including 18/8 Lean PC, Scutellaria, Glutamin, Chrysin, Amentoid, Evolutamine, Andrographis paniculata, Curcumin, Ophiopogonin, Sulforaphane, Silymarin, Silybin marianum, Phyllanthus urinaria have been found to activate PPARγ and Nrf2 and improve NAFLD. Although the results from preclinical studies are promising, further research is needed to determine the potential dosing and efficacy of these compounds in human subjects. In this review we summarize the effect of natural products in the treatment of NAFLD by activating PPARγ/Nrf2 pathway.

IIMT2396

Role Of Natural Products As Hepatoprotective Agents

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The use of natural products for liver protection is becoming increasingly popular due to their accessibility, low toxicity, and minimal side effects. Liver diseases are a major global health concern, and natural products have been used in traditional medicine for centuries to treat liver disorders. This review article focuses on recent developments in natural products for liver protection, specifically including herbs, plants, and fruit extracts. The article outlines the active components of these natural products, their mechanisms of action, and their efficacy in both clinical and preclinical studies. Some natural products, such as silymarin, curcumin, and berberine, have demonstrated significant hepatoprotective activity by improving antioxidant defense mechanisms, reducing inflammation, and modulating various signalling pathways. Additionally, the review examines the potential of natural products for the prevention and treatment of liver fibrosis, hepatitis, and liver cancer. Ultimately, natural products have great potential as hepatoprotective agents, but further research is necessary to fully understand their mechanisms of action and develop safe and effective treatments for liver diseases.

IIMT2397

Formulation and Evaluation of Acyclovir Aspasomal Aloe Gel for Effective Management of Herpes

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Objective: The aim of the present study is to formulate and evaluate Acyclovir loaded Aspasomal topical gel by using Aloe vera gel base to enhance skin permeation of the drug and reduce the associated oral side effects of the drug.

Method: Acyclovir loaded Aspasomes were formulated by using Aspartyl Palmitate, Cholesterol and Chloroform: Methanol in 9:1 ratio by Thin Film Hydration Method. Phosphate Buffer Solution (PBS) pH 7.4 was used to hydrate the film obtained. The formulated Aspasomes were further characterized for Drug Content, Vesicle Size, Poly Dispersibility Index (PDI) and % Entrapment Efficiency (EE). Optimized formulation of Acyclovir loaded Aspasomes was incorporated in Aloe gel base containing Carbopol 940 (1.5%). The formulated gels were characterized for pH, viscosity, spreadability, In-Vitro drug diffusion and Ex-vivo diffusion studies.

Results: 3² Factorial Design (Design Expert Software) was used for the Optimization study. The optimized Aspasomal formulation (F8) showed % Entrapment Efficiency of 87.98%, Drug Content of 84.68% and Vesicle Size of 128.6 nm. The formulated Aspasomal Gel reached to have a neutral pH value, with 1582 ± 0.21cps viscosity and 6.9±0.16gm.cm/sec spreadability. The In-Vitro diffusion studies (12hrs) and Ex-vivo diffusion studies (12hrs) revealed that Aspasomal gel released the drug in the range of 71.75% to 97.48% and 61.56% respectively and that of marketed Acyclovir gel released the drug in the range of 0.611% to 50.07% and 30.63% respectively, indicating the enhanced skin diffusion of aspasomal gel indicating that the formulated Aspasomal gel is a better carrier than the marketed gel for transdermal application.

Conclusion: Optimized formulation (F8) showed better results in terms of pH, viscosity, spreadability and percentage drug release. Ex-vivo studies and In-vivo studies conclude that ACV loaded aspasomal Gel revealed controlled drug release (12 hrs) than the marketed gel. The stability studies showed no significant changes in physical characteristics.

IIMT2398

Comparative Pharmacological Assessment of Polyherbal Formulation Immunoboost Tablet and Immunoboost Herbal Extract Capsule

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In the present investigation an attempt has been made to assess the pharmacological potential of polyherbal formulation Immunoboost Tablet (Sahasr Hpt) and Immunoboost Herbal Extract Capsule (Medimentia). Its antioxidant property, adaptogenic property, blood parameters, LFT, KFT, triglycerides, cholesterol for acute and sub-acute toxicity studies.

On evaluation, it was found that Immunoboost Tablet contains 48 phytotherapeutic agents from Haldi, Guduchi, Tulsi, Vacha(Ras), Shatavari, Shilajit, Amla, Kali Musli and Mandukparni wherein Immunoboost Capsule (Medimentia) contains 34 SPMs from extracts of Tulsi, Amla, Vidarikand, Giloy & Haridra. Higher contents of Total Phenolics Content (TPC) and Total Flavonoids Content (TFC) were found in Immunoboost tablet than Immunoboost capsule.

Both the formulations induced significant NO scavenging activity and their antioxidant activities increased with increasing concentrations. Acute and sub-acute toxicity studies clearly indicated that there was no mortality in rats upto 3000 mg/kg b.wt. so formulations have very wide safety margin and classified as Non-Toxic Constituent.

In adaptogenesis studies, swimming time was found to be 28.32 (I), 43.42 (II), 42.68 (III), 36.26 (IV) mins (formulation functional swimming endurance). Swimming time of group I was significant ($P< 0.01$) when compared other groups. In cold exposure stress model pretreatment with *W. somnifera* Immunoboost Tablet and Immunoboost Capsule significantly reduced blood cell counts except lymphocytes.

IIMT2399

Tinnitus – "A Ringing Defect"

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The word "tinnitus," is derived from the Latin verb "tinnire" (to ring), which refers to the experience of an aural sensation in the absence of a corresponding external stimuli. Tinnitus can be associated with hearing loss, acoustic neuroma, drug toxicity, ear diseases, and depression. Hissing, clicking, and ringing are popular descriptors of the sensation. Unlike to auditory hallucinations that can occur with psychiatric disease, when voices or music or both are heard in a form of tinnitus, the sensations are basic and have no significance. The causes are known to be head and neck injuries, ototoxic drug delivery (such as aminoglycosides, cisplatin), and noise trauma. Tinnitus sufferers frequently describe symptoms including frustration, annoyance, impatience, anxiety, sadness, hearing loss, hyperacusis, insomnia, and concentration problems; these symptoms are crucial for determining the severity of the condition. Tinnitus is caused by a number of factors, including ageing, head and neck accidents, vascular and cardiovascular diseases, systemic disorders, infectious disease, autoimmune disorders, ear problems, and TMJ dysfunction(temporomandibular joint disorder).For all patients, it is advised to start with the fundamental diagnostic procedures, which should involve taking a thorough case history (panel), determining the severity of the tinnitus, doing a clinical ear examination, and measuring the tinnitus and hearing function using an audiometer. Tinnitus should be evaluated by MRI if it coexists with headaches, along with benign intracranial hypertension, CSF circulation issues, and space-occupying lesions.If the patient still experiences tinnitus, they should receive symptom-focused treatments, such as sound therapy or acoustic stimulation, neuromodulation, or neurostimulation.

IIMT23100

Lipid-Based Nano-carriers Towards Major Barriers of Drug Delivery—Blood–Brain Barrier and Skin

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The pharmaceutical and biomedical industries have produced the most astounding advancements in the fields of medicine, diagnostics, and medication delivery over the past few years. Tools based on Potential of Lipid-Based Nanocarriers against two Major Barriers in Drug Delivery-Skin and Blood–Brain Barrier nanotechnology have been extremely important in this. The application of this comprehensive nanotechnology idea promotes the development of cutting-edge methods and materials for raising patient compliance. The development of lipid-based nano carriers with a special focus on barriers like the skin and blood–brain barrier (BBB), which have been described in the current publication, is prompted by the possible use of nanotechnology in medicine delivery. The restricted permeability of these two intriguing biological barriers prevents active molecules from passing through the skin and brain, leading to failure treatments for a number of lethal diseases. This issue may be resolved by using lipid-based nanocarriers, which make it easier for medications to get through these barriers and increase their effectiveness. The components, penetration mechanisms, and current applications of these carriers are given particular attention in this review. It also contains the most recent studies, discoveries, and clinical trials in this area, as demonstrated in patents. The data given show that these carriers have the potential to be used in drug delivery methods across the skin (also known as topical, dermal, and transdermal distribution), as well as to the brain. This potential can be further explored to create safe and effective products.

IIM123101

Investigation of drugs on behavioral model using Zebrafish

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There is mounting interest in zebrafish as a model organism in behavioral pharmacology research. Numerous anxiety behaviours have been characterized in zebrafish, but the effect of anxiolytic drugs on these factor has been barely studied. Anxiety continues to represent a major unmet medical need. Despite the availability of numerous anxiolytic drugs, a large proportion of patients do not respond well to current pharmacotherapy, or their reaction diminishes with chronic drug application. To discover novel compounds and to study the mode of action of anxiolytic drugs. The first task we consistently observed behavior of adult zebrafish on four parameters height in the tank, locomotion, color, and visual coloration. We examine the effects of buspirone hydrochloride, benzodiazepines, and ethanol as anxiolytic drug often employed in the human health center. Alprazolam drug, which is an effective agonist at GABAA receptors, did not produce signs of anxiolytic.We examine two genetically distinct populations of zebrafish, results suggest that light/dark bioassay in zebrafish is a practical, low cost, and sensitive screening task for anxiolytic drugs. Height in the tank and visual coloration seem to be useful behavioral parameters to identify different classes of these drugs. The result demonstrate that behavioral study of zebrafish may be a convenient, simple way to investigate the effects of human anxiolytic drugs.

IIM123102

The Epstein-Barr Virus

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BACKGROUND- Epstein Barr virus is an oncogenic virus, having a reported 90% infection rate among the total population. It is typically identified as gamma herpesvirus belonging to the herpesviridae family.

METHODS- We reviewed different literature on the Epstein Barr virus and its correlation with causing of different carcinoma and other conditions. The process of going through different cases and respective articles was dubbed under meta-synthesis, latest possible evidences which proved utmost possibility between the diseases and EBV were selected. Data included demographic distribution, structure of virus, diagnostic techniques, pathogenic relation between disease and virus, possibility of prevention and areas of further research.

RESULT- The search has successfully portrayed the direct or indirect involvement of EBV in causing many of the diseases/cells diseases like Hodgkin's lymphoma, Burkitt's lymphoma or post transplant lymphoproliferative disorders. While several spontaneous changes are still to be unraveled, the researchers are putting untiring efforts in unveiling more still to be known structural changes in the virus at possible targets.

CONCLUSION- EBV remain latent in the body cells, waking up due to triggering situations such as stress, immigrants, weakening of immune system. It may not also be limited to just causing proliferating other diseases like infectious mononucleosis. EBV shows broken patterns with development of different cancers which provoke a direct nexus for further research.

IIMT23103

Azithromycin Loaded Nanoparticles as Potential Novel Vesicular Carriers in Treatment of Acne

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Acne (P. Acne) is chronic inflammatory skin disorder which involves abnormalities in sebum production. Although it is not a life-threatening condition but may cause incompliance, irritation and anxiety. The aim of the present study was to overcome the drawbacks of conventional dosage form by formulating Azithromycin loaded ethosomes. The ethosomes were formulated by using Azithromycin, Soy Lecithin 30, ethanol, PBS 6.8 by ethanol injection method and characterized for vesicle size, % Entrapment Efficiency, Drug Content compatibility studies by IR spectroscopy and DSC. The above parameters were determined to be within the permissible ranges. The optimized formulation AZT- ETH 04 produced excellent results with % Entrapment Efficiency of 95.87% drug content 97.37%, polydispersity index of 25.8 and particle size of 294.4 nm. The formulation AZT-ETH 04 was selected as optimized formulation and aloe vera juice was used as a medium to prepare gel using carbopol 934(1.0%) as gelling agent and evaluated for pH, viscosity, spreadability and drug release. Optimized formulation showed better results in terms of pH (6.53), viscosity (756 cPs), spreadability (2gm.cm/sec), and percentage drug release of 91.51%. In vivo studies concluded that ethosomal gel is better for the delivery of Azithromycin.

IIMT22104

Preformulation Studies

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Drugs are processed into drug products instead of being given to patients as pure substances since they are vital to basic human needs. However, a recent FDA assessment of the approval statistics suggests most products fail in clinical studies at the phase-II and phase-III levels because the therapy is ineffective, due to toxicity problems, commercial considerations, operational challenges, or unidentified errors. Therefore, it is imperative that certain basic physical and chemical properties of the drug molecule and other qualities of the drug provider be identified before developing these essential dosage forms in order to reduce research expenses and ensure the production of capable dosage forms. Once a novel molecule is created, a phase known as preformulation study is started. It deals with investigations of physical, chemical, analytical, and medicinal properties related to the molecules and provides recommendations for modifications that could be made to improve performance. Preformulation data can be easily generated using a wide range of analytical techniques, including spectroscopic, chromatographic, thermal, and certain specific detection techniques like capillary electrophoresis.

IIMT23105

Targeted Drug Delivery Systems ,Concepts, Events and biological process involved in drug targeting, Tumor targeting and Brain specific delivery

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Targeted drug delivery systems (TDDS) have emerged as a viable strategy for overcoming the limitations of traditional drug delivery systems. The idea of TDDS is to create drug carriers that can selectively target sick cells or tissues, lowering off-target toxicity and boosting therapeutic efficacy. TDDS makes use of a variety of biological mechanisms involved in drug targeting, including as passive and active targeting. Passive targeting uses the sick tissue's leaky vasculature and poor lymphatic drainage to preferentially collect drug carriers. The use of ligands that precisely bind to receptors or antigens expressed on the surface of sick cells allows for selective internalization of drug carriers. TDDS has showed considerable promise for tumor targeting, in the context of cancer treatment. Nanoparticles, liposomes, micelles, and dendrimers are some of the technologies used for tumor-specific medication delivery. To selectively attack to tumour cells and deliver therapeutic medicines, these carriers can be functionalized with targeted ligands such as antibodies, peptides, or aptamers. Another area where TDDS has tremendous potential is brain-specific medication delivery. The blood-brain barrier (BBB) is a significant barrier to medicine delivery to the brain. To enable targeted medication delivery to the brain, TDDS methods such as nanoparticles and liposomes can be functionalized with BBB-penetrating agents such as peptides or antibodies Overall, TDDS has a lot of potential for targeted drug delivery in a variety of disease scenarios, such as cancer and neurological illnesses. Continued research in this sector is required to optimize drug carrier design and development for enhanced therapeutic effects.

IIMT22106

New Approaches to Pharmaceuticals: NDDS

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A drug's performance in terms of patient compliance, safety, and efficacy can be considerably improved by evolving it from a standard form to a unique delivery mechanism. A therapeutic molecule that already exists can be given new life as a Novel Therapeutic Delivery System. The release of a medicine at a precise spot at a specific pace presents a number of challenges that can be greatly reduced by a novel drug delivery system that is properly developed. Pharmaceutical companies are working on developing innovative drug delivery systems as a result of the requirement to provide medications to patients effectively and with minimal side effects. In recent years, a more logical approach to the development of an ideal drug delivery system has been made possible by our growing understanding of the pharmacokinetic and pharmacodynamic behaviour of the medication. When a drug delivery system is designed properly, the target is met or the desired rate of drug administration is reached or demanded by the physiological needs of the body. The rate of drug distribution to the target site cannot be controlled by conventional pharmaceutical dosage forms. Therefore, innovative drug delivery systems (NDDS) are those entities that keep drug concentrations in the therapeutic range for longer periods of time while also having the ability to deliver the appropriate amount of drugs to a given site of action.

IIMT23107

Role of Natural Moieties in Tumor Microenvironment

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The tumor microenvironment (TME) plays a crucial role in the development and progression of cholangiocarcinoma, a type of cancer that originates in the bile ducts. The TME consists of various components, including immune cells, fibroblasts, blood vessels, and extracellular matrix, which interact with cancer cells and influence tumor growth, invasion, and metastasis. Natural moieties, such as natural compounds or bio molecules derived from plants, animals, or microorganisms, have been studied for their potential in targeting the TME in cholangiocarcinoma. Here are some roles of natural moieties in targeting the TME for cholangiocarcinoma: Anti-inflammatory activity: Inflammation is a hallmark of cholangiocarcinoma and it promotes the formation of a pro-tumorigenic TME. Natural moieties with anti-inflammatory activity, such as resveratrol from berries, quercetin from grapes, and epigallocatechin gallate (EGCG) from green tea, can modulate the TME by reducing inflammation and inhibiting inflammatory signaling pathways, thereby suppressing tumor growth and invasion. Anti-angiogenic activity: Angiogenesis, the formation of new blood vessels, is critical for tumor growth and metastasis. Natural moieties with anti-angiogenic activity, such as curcumin from Avastin, can inhibit the growth of blood vessels in the TME, depriving the tumor of essential nutrients and oxygen, and thereby inhibiting tumor growth. Immune modulatory activity: The immune system plays a crucial role in regulating the TME and controlling tumor growth. Natural moieties with immune modulatory activity, such as immune checkpoint inhibitors like pembrolizumab and nivolumab, can enhance the anti-tumor immune response by blocking immune checkpoint proteins on immune cells, allowing immune cells to recognize and attack cancer cells in the TME. In conclusion, natural moieties can play various roles in targeting the TME for cholangiocarcinoma, including reducing inflammation, inhibiting angiogenesis, modulating the immune response, inhibiting fibrosis, and directly suppressing tumor growth. Further research and clinical studies are needed to better understand the mechanisms of action and potential benefits of natural moieties in targeting the TME for cholangiocarcinoma and develop effective therapeutic strategies for this aggressive cancer.

IIM122108

Exploring the Versatility of Carboxymethyl Chitosan: Synthesis, Properties, and Diverse Applications - A Comprehensive Review

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A modified biopolymer called carboxymethyl chitosan (CMCS) was made from chitosan, which was acquired from chitin, the second-most prevalent biopolymer on Earth. It used in areas including medicines, agriculture, food processing, and environmental sciences. The review begins with a summary of the chemical making and physical properties of CMCS, highlighting its water solubility and biocompatibility, which make it suitable for a variety of uses. A complete examination is one of the variables affecting the synthesis, traits of CMCS, and its use. CMCS is also extensively researched for its biomedical applications in tissue engineering, drug delivery systems, wound healing, and antibacterial agents. These applications are also highlighted. The roles played by CMCS in medication delivery, especially in terms of its ability to encapsulate and release drugs as well as its biological compatibility and biodegradability. It used in food packaging, heavy metals removal, remediation of the environment, water treatment, as a natural insecticide in agriculture and have other applications. CMCS has shown its ability to address environmental problems. This review provides an overview of recent advancements, uses, and challenges in the field of CMCS investigations, as well as details on its limitations and toxicity. Additionally, it stressed the need for more study in areas including nanocomposites, scaling up manufacturing, and CMCS-based surface modification. More research is required for it to overcome its restrictions and completely grasp its potential in several areas. In conclusion, CMCS is a versatile and promising biopolymer with several applications across a wide range of sectors.

IIMT23109

IMMUNITY BOOSTER HERBAL PLANTS IN COVID 19 PANDEMIC

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Background: Herbal plants have been used in traditional medicine systems for centuries for their potential health benefits, including immune-modulatory properties. These compounds have been shown below to modulate various aspects of the immune system, including enhancing immune response, reducing inflammation, and exerting antiviral activity, which could potentially be beneficial in the context of COVID-19.

Objective: The objective of this study is to investigate the potential of herbal plants with immune-boosting properties in enhancing immune health during the COVID-19 pandemic. The study aims to provide a comprehensive overview of herbal plants that are known for their immune-boosting properties.

Methods: Echinacea is a flowering plant that is believed to stimulate the immune system and may help in preventing and managing respiratory infections. Ginseng is a popular plant known for its adaptogenic properties, which may help in improving the body's resistance to stress and enhancing overall immune function. Astragalus is an herb that has been used in traditional Chinese medicine for its potential immunomodulatory effects and may help in strengthening the immune system. Garlic is a common culinary herb that is known for its immune-boosting properties and it may help in enhancing immune function and reducing the risk of infections. Turmeric is a yellow spice that has been traditionally used for its anti-inflammatory and antioxidant properties, which may help in supporting immune health by reducing inflammation and oxidative stress. Ginger is another herb that has been used in traditional medicine for its potential immune-boosting effects, as it may help in reducing inflammation and supporting immune function.

Results: Some studies have suggested that herbal plants like Echinacea, Ginseng, and Astragalus may have immune modulatory effects and could potentially enhance immune function. Garlic, Turmeric and Ginger are also believed to have immune-boosting properties due to their anti-inflammatory, antioxidant, and antiviral effects. However, their direct effects on COVID-19 are still being investigated, and it's important to interpret the findings with caution. It's always recommended to consult with a qualified healthcare professional for personalized medical advice and guidance, especially in the context of COVID-19.

IIMT23110

Microneedles: An aspect to enhanced Transdermal Drug Delivery

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Biopharmaceutics help us to understand better pathways to safe and effective medication in our living system of the human body. Transdermal drug delivery systems bypass first pass metabolism and possess a pain and easy approach to drug administration which do not require any technical person and liquid intake. The principal obstacle to delivering the medication into the transdermal area is stratum corneum, the dead keratinized outer cell layer of skin. Different techniques have been applied to enhance systemic bioavailability of drugs through the Transdermal approach. Microneedle formation is one of them. Through this technology we can easily permeate the targeted therapeutic drug molecules into our systemic circulation. Micro needle inserted into the skin just above the pain receptors in the skin. So before approaching pain receptors in inner layers of skin the microneedle releases the medication in our skin. Several sophisticated techniques like photolithography, Nano laser and Silicone molding have been used to formulate the microneedles. Various polymers like maltodextrin, Poly vinyl pyrrolidone, Poly vinyl alcohol, hyaluronic acid have been used in preparation of dissolved microneedles. This non invasive and painless drug delivery system can fulfill a promise of a large variety of medication administration in an easy and easy compliance manner.

IIMT2/111

Innovations In Fast Dissolving Films: A Comprehensive Review

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The oral drug delivery system has advanced from the traditional dosage form to a modified release dosage form. This advancement led to the addition of a new dosage form which is known as the Fast-dissolving film. It is versatile and easy to use and provides a better solution in terms of patient compliance for geriatric and pediatric patients, who face difficulty in swallowing capsules, syrups, and tablets. When administered in the oral cavity, it absorbs moisture, adheres to the site of application, and disintegrates to release the API, which are subsequently dispersed in saliva. This allows many drugs to permeate through the mouth pharynx, and oesophagus. The rapid distribution of the drug and avoiding first-pass metabolism enables it to improve the drug's bioavailability. Fast-dissolving films offer advantages such as no risk of choking, and it possess mouth feel and can be administered orally, buccally, sublingually, rectally, and transdermally, providing fast as well as systemic effects. These formulations consist of solubility enhancers, surfactants, polymers, film-forming agents, and other excipients that helps to increase the dissolution and solubility parameters of the drug. This paper overviews the key elements involved in the preparation, evaluation parameters, and characterization of Fast-Dissolving film and also outlines the benefits of fast-dissolving films compared to orally disintegrating tablets.

IIMT23112

TREATMENT OF PATIENTS LIVING WITH HIV

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There are two species of Lentivirus that infect humans. If the virus is not suppressed as soon as the patient is diagnosed with it. HIV causes Acquired Immune Deficiency Syndrome (AIDS), a condition in which progressive deterioration of the immune system allows life-threatening pathogenic infections which do not act usually but can occur due to weaker immune system and thereafter cytosis to thrive. Depending on the HIV subtype, the average life expectancy reduces drastically down to about 9-11 years without immediate treatment. Non-sexual transmission can occur from an infected mother to her infant during gestation period, during labor by exposure to her blood or vaginal fluid, and through breast milk. Within these bodily fluids, HIV is present as both free virus particles and virus within infected immune cells. HIV infects vital cells in the human immune system, such as helper T cells (specifically CD4+ T cells), macrophages, and dendritic cells. HIV infection leads to low levels of CD4+ T cells through a number of mechanisms, including apoptosis of uninfected bystander cells, direct viral killing of infected cells, and killing of infected CD4+ T cells by CD8+ cytotoxic lymphocytes that recognize infected cells. When CD4+ T cell numbers decline below a critical level, cell-mediated immunity is lost, and the body becomes progressively more prone to opportunistic infections, leading to the development of AIDS.

IIM123113

A review on diagnosis and treatment strategies for TNBC

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Around 170000 of the 1.7 million instances of breast cancer diagnosed each year in the world are triple-negative. Due to its poor prognosis, aggressive behaviour, and lack of targeted medicines, triple-negative (ER-negative, PR-negative, and HER2/neu-non-overexpressed) breast cancer (TNBC) is a clinical concern and chemotherapy is the backbone of treatment. It has been reported as a condition that responds poorly to endocrine target treatment and necessitates improved biomarker validation. Clinically, they appear in younger women as visceral cancer, with a greater risk of recurrence within the first three years. Visceral metastases and illness recurrences in the brain are more frequent in cancers that express hormone receptors. Epidermal growth factor receptor, vascular endothelial growth factor, basal cytokeratins, Poly (ADP-ribose) polymerase-1, p53, tyrosine kinase, c-Kit, Src and other proteins, and TOP-2A are only a few of the biomarkers studied in papers published on TNBC. We also contrast the synthetic lethality and angiogenesis, growth, and survival pathway blockage. As TNBC is a complicated disease subtype with several subcategories, it might be challenging to translate experimental therapy into positive clinical outcomes. Because of the disease's heterogeneity, the effective development of targeted treatment for TNBC is currently constrained. In this Article, we outline the existing and future therapeutic landscape for TNBC and talk about how a comprehensive understanding of the ecosystem around TNBC might help to categorise risk levels and enhance chances for therapy customization.

IIM123114

Sunrise in the field of Telemedicine healthcare sector in India

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Telemedicine is rapidly growing in healthcare sector that utilizes the digital technologies to improve patient outcomes by increasing access to healthcare and medical information. It has emerged to overcome the shortage of healthcare providers in the rural as well as urban areas, paved the way for the patients in the remote areas, breaking the barriers of time, distance, high cost of medical care, for the delivery of emergency medical services, during pandemic or infectious diseases when it is difficult to consult or visit the patients. Government of India have taken the initiatives with the aim to provide quality healthcare facilities in the rural and remote parts of the country. Currently India have top telehealth companies such as Practo, Docting, PharmEasy, Phyo Telehealth and Mfine Pvt Ltd. Health care professionals, patient communication and training based on mobile communication platforms are required to initiate telemedicine. End-to-end encryption is important that help to protect telemedicine transmission data. The India telemedicine market was valued at $130 Bn in 2022 and is estimated to reach $715 Bn in 2030 with a compound annual growth rate (CAGR) of 21.2% from 2023 to 2030. Telemedicine industry is expected to grow rapidly during the next few years. As the demand for its services increases, the companies operating in this sector will strive to innovate and provide better healthcare solutions for patients everywhere. India, which grew promptly and has emerged as a leader in the field of telemedicine.

IIMT23115

Basics And Applied Aspects of Biotechnology

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Biotechnology is the 'technology of hope', which has wide range of uses that impact human health, well-being of other life forms and our environment. It is an index of all aspects of biochemical, medicinal and microbial technology as applied to bioengineering, medicine, agriculture and environment sciences. The major challenges to the human beings have been diseases caused by deadly virus infections such as Avian flu, chikungunya, hellanius A, SARS, and the latest zika virus. As an area of science and technology with the explicit goal of describing the machinery of life cycle and also ecosystem. However, personalized medicine is increasingly recognized in healthcare system to overcome the infection of these type of diseases. By application of biotechnology the human system is well developed. The success in crop productivity for solving World Food and fuel problem advanced in agricultural biotechnology. As with every research area, the field of biotechnology is associated with many ethical issue and unseen fears. Biotechnology poses difficult challenges to governance. The rise of biotechnology and convulsion in technological and epistemic circumstance. There are the significance of biotechnology. The role of risk management and benefit in agribusiness are explained.

IIM123116

Role of quercetin in visual disorders

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Quercetin is a strong antioxidant that may be found in many different kinds of plants and foods. Because it has many biological benefits, such as antioxidant, anti-inflammatory, and anti-fibrotic properties, it has become widely known as a powerful treatment for ocular diseases. Flavonoids are a family of secondary metabolites found in plants and fungi that have been shown to have protective effects against UV-induced oxidative stress, boost microbial defense by mediating toxin signaling. As a result of their strong antioxidant activity and low toxicity, flavonoids are being studied as possible medicinal agents. Dry eye, keratoconus, corneal inflammation, and neovascularization are all conditions that the ocular surface research community has recently begun to focus on as potential targets for quercetin's therapeutic use. This paper discusses how quercetin may be utilized for ocular disease prevention, as well as its fundamental uses, certain common biological characteristics, and recent applications.

IIMT23117

Phytochemical screening, in-vitro and in-silico anticancer evaluation of Fumaria parviflora

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Background: In today's world, cancer is on the rising in the modern world. A significant challenging current health concern is cancer and its impact. One of the main causes of illness and mortality is related to cancer. This research objective was to identify an active ingredient and characterize it. Moreover, to examine the effects of different Fumaria parviflora extracts on cancerous cell lines.

Material and Methods: In the current work, DMEM with Low Glucose, MCF-7 cells were used to test the anticancer activity of the chosen cancer (Human Breast Cancer) The fumaria Crystals were dissolved in 100 L of DMSO after 4 hours, and absorbance at 570 nm was recorded.

Result: The ethanolic extract of Fumaria parviflora showed substantial IC50values on MCF-7 cell lines. The target proteins [PDB ID: 1M17], [PDB: 4PYP], [PDB ID: 3QAD], and [PDB ID: 4FBT] showed better docking scores with the ruling phytoconstituents from Fumaria parviflora.

Conclusion: RS-2 was isolated from Ethanolic extract and was possibly β- Sitosterol. The Ethanolic extract of Fumaria parviflora was found to have considerable Anticancer activity.

IIMT23118

Therapeutic Interventions of Green Synthesized Metallic Nanoparticles Using Allamanda Cathartica Extracts

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Allamanda cathartica (A. cathartica) is a perennial half-hardy evergreen woody shrub that resembles a vine, compact in creeping, semi-erect or garden flowering plant in tropical and subtropical regions of the world. It is indigenous to Brazil, also found in India, and Sri Lanka belongs to the family Apocynaceae. In India, it is commonly known as 'Allamanda', 'Pitaghanti', or 'Harkuma. This plant has a number of medicinal characteristics, including effective purgative qualities for poisoning, inflammation, constipation, asthma, and healing of wounds and ulcers. The bark acts as a hydragogue in ascites, while the leaves are a valuable cathartic in moderate doses. The root is used as a remedy for snake bites. The whole plant has multitherapeutic effects, including jaundice, malaria, fungal infections, antihelminthic, anti-bacterial, antidiarrheal, wound-healing, anti-fungal, gastroprotective, anti-dyslipidemic, immunomodulatory, and antipyretic (skin lesion). The plant extract (aqueous or alcoholic) of A. cathartica have found immense potential as a reducing or capping agent for synthesizing metallic nanoparticles, recognized as biogenic or green synthesized metallic nanoparticles. The biosynthesis of several nanoparticles has been reported using the extracts of various parts of the A. cathartica plant. These biosynthesized nanoparticles can be efficiently used for diverse biomedical, clinical and targeted therapeutic applications with reduced toxicity and high efficacy. In conclusion, A. cathartica as a whole plant or applied through synthesis (plant extracts) exhibits a potential therapeutic axis and needs to be explored more to obtain significant therapeutic effects.

IIMT123119

Pharmacological Assessment of Cassia occidentalis for Anti-Inflammatory and Wound Healing Properties in Albino Wistar Rats

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Cassia occidentalis contains bioactive components which have shown various pharmacological activities. This research work was an attempt to establish scientific protocols to perform research on of Cassia occidentalis for wound healing and anti-inflammatory activities against carrageenan. In toxicity studies, ethanolic extract of Cassia occidentalis leaves (HECOL) and methanolic extract of Cassia occidentalis leaves (MECOL) changed blood RBC, Hb, Ht, MCV, WBC count, creatinine and BUN while LFTs were unaltered. HECOL and MECOL indicated a very wide safety margin so it can be classified as Non-Toxic Constituent. It was found that HECOL and MECOL induced powerful RBC membrane stabilizing influence / property (87.54% to 86.26%). The MECOL showed promising results than HECOL. In anti-inflammatory activity, edema inhibition was latent with reference drug (35.97%) followed by MECOL (31.21%) and HECOL (29.32%) at 5th hour observation. In wound healing experiments, it was found that HECOL, MECOL and isolated chrysophanol produced good regeneration, epithelial proliferation / epithelization. Fibroblast and new blood vessels formation, restoring the protective outer layer of the skin in excision wounds. Effects of HECOL, MECOL and isolated chrysophanol for re-epithelialization for differentiation and regeneration of new epidermis were significant and comparable with Sofframycin Ointment considered. Finally, Cassia occidentalis is recommended as anti-inflammatory and wound healing herbal medicine.

IIM123120

Modulation of Brain Ang(1-7) in PKC Pathway in Diabetic Nephropathy

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Objective: Angiotensin (1-7) has been identified as physiologically major constituent of the renin-angiotensin system. It is evident that diabetic nephropathy (DN), which is prevalent causes of end-stage renal disease, reduces Ang (1-7) peripheral activity. RAS activity in the PNS is controlled by RAS in the brain. The goal of this research is to see whether cerebral angiotensin (1-7) with effective PKC signaling pathway is key in chronic diabetic kidney disease in wistar rats.

Methods and materials: Single dosage of streptozotocin 50 mg/kg i.p. causes diabetes mellitus (DM). Two doses of valsartan and Ang (1-7) in a nervous route. After that three were testing of the samples. Commercially available kits were used to determine biochemical parameters linked to DN. Results: When albinos are given to diabetic rats for 8 weeks, the mice displayed higher serum creatine, blood urea as well as protein in urine, as well as a decreased amount of serum amino. A 2-week course of intracerebral valsartan (100nmol/day) and Ang (1-7) treatment decreased such changes also elevated serum creatine in rats with DN, but only in conjunction with valsartan (5 ng/day) separately or in combinations.

Conclusion: The findings of current research imply that brain Ang (1-7) is vital in RAS peripheral activity modulation in diabetic nephropathy, which might be attributed to Ang II peripheral activity and enhanced central sympathetic outflow.

IIMT23121

FORMULATION AND EVALUATION OF TINIDAZOLE MICROSPHERES

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Microspheres are the formulations that can achieve maximum bioavailability with the desired properties of novel drug delivery systems. The microspheres of Tinidazole are studies and prepared using Hydroxy propyl methyl cellulose (K4M) and ethyl cellulose in different drug and polymer ratio taking into account non-aqueous solvent evaporation method. The formulation of different batches was subjected to various physicochemical studies such as yield value, particle size determination, buoyancy percentage, drug entrapment efficiency and in vitro drug release determination. In vitro release study of each formulation was carried out on dissolution apparatus using 1.2 pH HCl buffer and simulated gastric fluid. Various results were inferred such as percentage yield value (70.8% to 92.1%), the particle size (254µm to 294.8µm), drug entrapment efficiency (52.9% to 80.6%) and buoyancy percentages (52.5% to 70%). The best drug release profiles were seen with formulation A2 at the ratio of drug: ethyl cellulose of 1:2.5. The present section tends to provide impetus for future researchers to design such novel drug delivery systems which can supersede conventional dosage forms with significant pharmacokinetic and pharmacodynamics properties.

IIMT23122

RADIOPHARMACEUTICALS DRUG INTERACTIONS & FUTURE OUTCOMES

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The main group of these compounds are the radiotracers used to diagnose dysfunction in body tissues. While not all medical isotopes are radioactive, radiopharmaceuticals are the oldest and still most common such drugs. Radiopharmaceuticals, or medicinal radio components, are a group of pharmaceutical drugs which have radioactivity. Radiopharmaceuticals play a critical role in modern medicine primarily for diagnostic purposes, but also for monitoring disease progression and response to treatment. As the use of drugs has been increased, so has the use of prescription medications. These trends increase the risk of interactions between medications and radiopharmaceuticals. These interactions which have an impact on image by competing with the radiopharmaceutical for binding sites for example can lead to false negative results. Drugs that accelerate the metabolism of the radiopharmaceutical can have a positive impact (i.e. speeding its clearance) or, if impeding image is needed, a negative impact. In some cases, for example in cardiac image among patients taking dipyridamole, these interactions may have a therapeutic benefit. The incidence of drug-radiopharmaceuticals adverse reactions is unknown, since they may not be reported or even recognized. Here, we compiled the medical literature, using the criteria of a systematic review conducted by the Cochrane Collaboration, on pharmaceutical-drug interactions to provide a summary of documented interactions by organ system and radiopharmaceuticals. The purpose is to provide a reference on drug interactions that could inform the nuclear medicine staff in their daily routine. Efforts to increase adverse event reporting, and ideally consolidate reports Available online on www.iaspet.com 4 worldwide, can provide a critically needed resource for prevention of drug-radiopharmaceuticals interactions.

IIM123123

EVALUATION OF ANTI ARTHRITIC ACTIVITY OF BOMBAX CEIBA PLANT

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Arthritis is the most common disorder of articular joints which affects knees,spines,hips,hand and feet. Rheumatoid arthritis(RA) is an autoimmune and inflammatory disease which means that our immune system attacks healthy cells in our body by mistake, causing inflammation (painful swelling) in the affected parts of the body. In a joint with RA, the lining of a joint becomes inflamed, causing damage to joint tissue. The tissue damage can cause long lasting and chronic pain. Arthritis is regarded as a disease that has affected the large proportion of world's population, that results in exorbitant there from good performance at work and in social relationship and causing disorder in millions of families. Therefore the research for new therapeutic agent considered a priority for the discovery of more effective form of treatment. The purpose of this study is to evaluate the anti arthritic activity of the methanol extract of aerial part of Bombax ceiba plant. In the review, studies of various plants having anti arthritic activity are discussed. The plants which are selected having the probable anti arthritic activity are Nigella sativa (Ranunculaceae), Tridax (Tridax procumbens),Senna (Bombax ceiba). The mechanism of action of phytoconstituents also from these plants are discussed. This review concludes the phytoconstituents and their mechanism of action,pharmacological activities as well as their extraction. This article basically emphasizes on the utilization of these traditional herbal plants in the treatment of arthritis.

IIMT23124

ROLE OF PRE-CLINICAL AND CLINICAL STUDIES IN RESEARCH

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Discovery of novel drug is a laborious process which results in high expenses in the development of drugs. The selection of appropriate pre-clinical models is crucial step for successfully completing a clinical trial leading to the approval of a novel drug. Preclinical development is an important stage of research that occurs prior to clinical trial and important feasibility, computational testing, and drug safety data are obtained during this process and this process is often performed on experimental animals. Therefore to discover a potential drug, extensive preclinical testing is required that assesses pharmacokinetics, pharmacodynamics and toxicity of that drug on experimental animals. The primary aim of preclinical research is to evaluate the effectiveness and safety of investigational product on experimental animals and to analyse the possible toxic effects of the investigational product, which often includes novel medical devices, prescription medications, or a diagnostic tool and if that investigational product proves its effectiveness and safety then it goes to clinical phase. Then is clinical study is designed to evaluate the safety and efficacy of the investigational product on human being. Every medication, vaccination, and treatment utilised today was originally evaluated as part of a pre-clinical and clinical trial.

IIMT23125

Nanotechnology: the future medicine

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Nanotechnology is the study, design, creation, synthesis, manipulation, and application of functional materials, devices, and systems through control of matter at the nanometre scale (1–100 nanometres, one nanometre being equal to 1 × 10−9 of a metre), that is, at the atomic and molecular levels, and its exploitation of novel phenomena and properties.Different types of nano systems have been fabricated including carbon nanotubes, paramagnetic nanoparticles, dendrimers, nano emulsions, etc. Physicochemical properties of the starting materials and the selected method of preparation play a significant aspect in determining the shape and characteristics of the developed nanoparticles. Dispersion of perforated polymers, coacervation, polymerization, nano-spray drying and supercritical fluid technology are among the most extensively used techniques for the preparation of nanocarriers. Particle size, surface charge, surface hydrophobicity and drug release are the main factors affecting nanoparticle physical stability and biological performance of the incorporated drug. Nanotechnology, or nanomedicine manufacture at the molecular level, is a multidisciplinary scientific field undergoing explosive development. For example Ferumoxytol (Feraheme™) has been FDA approved for the treatment of iron deficiency anemia in adult patients with chronic kidney disease. AmBisome liposome used to treat Systemic fungal infections. In this review we will enrich the advantages, types, methods of preparation, characterization methods and some of the applications of nano-systems.

IIMT23126

Basics And Applied Aspects of Biotechnology

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Biotechnology is the 'technology of hope', which has wide range of uses that impact human health, well-being of other life forms and our environment. It is an index of all aspects of biochemical, medicinal and microbial technology as applied to bioengineering, medicine, agriculture and environment sciences. The major challenges to the human beings have been threats posed by deadly virus infection such as Avian flu, chikungunya, influenza A, SARS, and the latest zika virus. As an area of science and technology with the explicit goal of describing the machinery of life cycle and also ecosystem. However, personalized medicine is increasingly recognized in healthcare system to overcome the infection of these type of diseases. By application of biotechnology the human system is well developed. The increase in crop productivity for solving World food and feed problem addressed in agricultural biotechnology. As with every research area, the field of biotechnology is associated with many ethical issue and unsure facts. Biotechnology poses difficult challenges to governance. The rise of biotechnology and considers it technological and epistemic dimensions. There are the significance of Biotechnology. The role of risk management and benefits in legitimation are explained.

IIMT2J127

Inside the story about preclinical and clinical trials of covid-vaccines

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With a death toll of over one million worldwide the covid-19 pandemic was caused by SARS COV-2. It has spread globally causing massive morbidity and mortality. To put an end to this growing number of infections and death an effective vaccine is desperately needed at this time. As a result, enormous efforts have been made globally to develop numerous vaccines. As per the WHO, more than 200 vaccines against covid-19 are being developed with approximate 184 being presently investigated in the preclinical phases, while 104 of these vaccine candidates are at the stage of clinical trials, 12 of these are in the advanced stages of clinical investigations and promising results in the 3 phase trials have paved the way for thenregulatory approval and for global use. We also discussed about immune response generated by these candidates in human and preclinical models to determine vaccine safety and efficacy. India is regarded as the vaccine manufacturing hub of the world contributing 60 % of the global vaccine supply. the country has the ability to manufacture well over 3 billion coronavirus disease vaccines annually. According to the current review paper vaccine hesitancy has a negative and statistically significant impact on COVID-19 coverage. A percentage increase in the vaccine coverage by 40% because of their side effects which may from person to person.

IIMT23128

Molecular Docking a New Era in Drug Discovery

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A well-known in silico structure-based technique utilised extensively in drug development is molecular docking. Without knowing in advance the chemical makeup of other interconnections, docking makes it possible to find novel therapeutic compounds, anticipate ligand-target interactions at the molecular level, or define structure-activity correlations(SAR). The challenge resembles a three-dimensional puzzle to solve. Finding an inhibitor that binds to a specific protein, for instance, can prevent a dangerous protein from acting inthe human body. All theoretical approaches and computational tools used to simulate or model the behaviour of molecules are collectively referred to as "molecular modelling." We give a brief overview of the various molecular docking techniques in this article, along withinformation on how they were created and used to find new drugs. The fundamental algorithms are paramount are condensed, including sampling techniques and scoring functions.

IIM122129

Hybrid Molecules: The Privileged Scaffolds for Various Synergetic Pharmacological Activities

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The development of hybrid medications may offer a useful method for developing chemical entities expected to be more successful and less susceptible to resistance in an era where treatment-resistant tumours in cancer patients is on the rise. Covalent bitherapy is a term used to describe a medicinal method in developing antimalarial drugs, anticancer drugs, antibacterial and antituberculosis agents that involves combining two molecules with diverse intrinsic activities into a single agent (a) encoding dual-activity or (b) a single hybrid molecule. The most recent study in this area serves to support hybrid compounds as the upcoming antimalarial drugs, anticancer drugs, antibacterial, antitubercular medications. However, before hybrid medications are successful in clinical applications and exhibit the tremendous potential of this unique concept, significant technological and regulatory challenges will have to be overcome. This review focuses on a number of hybrid compounds that have been developed, with a focus on those considered to have the greatest probability of being developed for therapeutic use.

IIM122130

FORMULATION AND EVALUATION OF ORAL ANTI-INFLAMMATORY DISPERSIBLE FILM

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Objective: To formulate and evaluate oral dispersible film containing anti – inflammatory Aceclofenac for enhanced analgesic action.

Introduction: Oral films or dosage form are getting more attention for the delivery of active pharmaceutical ingredients. Drug delivery system such as molecular fast dissolving film are novel dosage forms that disintegrates or dissolve within the oral cavity.

Materials & Methods: Hydrophilic polymer rapidly dissolves on the tongue or buccal cavity, facilitates systemic circulation of drug via dissolution on contact with saliva. The medication bypasses first pass metabolism thereby increases its bioavailability. The orally readily dissolves the Aceclofenac can enter the blood stream primarily buccally and sublingually. In the present study mouth dissolving film of Aceclofenac were prepared by solvent casting method.

Result and Conclusion: The film specially designed for people with swallowing difficulties such as pediatric and geriatric individuals.There are several formulations developed by varying polymer (HPMC) and plasticizer concentration.Formulated films were fabricated by solvent casting method and were comprised of appropriate excipients. Film ingredients, weight variation, tensile strength and disintegration time, in vitro release study suggested that release following first order kinetics. Obtained outcomes showed analgesic potential of aceclofenac loaded film.

IIMT23131

Formulation And Evaluation Of Antimicrobial transdermal Patch Containing Azadirachta IndicaAnd curcumin Longa

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Objective: To formulate and evaluate transdermal patch containing Azadirachtaindica and Curcuma longa for enhanced antimicrobial action against wide range of microbes.

Introduction: Transdermal drug delivery system (TDDS) refers to self-contained, discrete dose forms that release drug(s) in the systemic circulation at a controlled rate through intact skin.

Materials & Methods: Pectin and Carbopol were used as polymers, dimethyl sulfoxide(DMSO) as a permeation enhancer, Tween 80 was used as a surfactant, and glycerol is used as a plasticizer in the antimicrobial patch. Azadirachta ind Curcuma are natural herbs and entrapped in this patch. The transdermal patch was then subjected to a physicochemical and invitro evaluations.

Result and Conclusion: Azadirachtaindica extract and curcumin longa containing transdermal patch was fabricated through solvent casting technique. Developed PT patch fulfilled all the evaluation parameters. To produce thin, clear, smooth, stable and highly permeable transdermal patches, a variety of formulation parameters, including drug-polymer ratios and permeation enhancers were customized. In-vitro release study displayed controlled drug release for the period of 6hrs that was desirable for adequate antimicrobial action at the site. Enhanced drug release suggested potential of designed transdermal patch to combat microbial infections compared to individual drug.

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IIM122132

Phytochemistry And Biological Applications of berberis Aristata (Daruharidra) - A Review

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Berberis aristata, also known as daruharidra, is a famous plant and has been used for a very long time in various medical systems such as Ayurveda, Homeopathy, Unani, Chinese and Allopathy. This prickly, hard, yellow-dye plant belongs to the Berberidaceae family. This plant is common in the hilly regions of the sub-Himalayan region, Sri Lanka, Bhutan and Nepal. It has played an important role as an herbal remedy for over 2500 years. Ancient Egyptians used it to ward off plague. Medicinal properties of all parts of this plant have been reported, including antibacterial,antidiarrheal,antiplasmodic, antioxidant, antiinflammatory, anticancer, hypoglycemic, antidiabetic, and antimalarial. The main components found in various barberry species are berberine and berbamine. This review aims to provide insight into the development of potentially new bioactive compounds in plant medicine by highlighting the use of B. aristata in Phytochemical and biological applications.

IIMT23133

Thermal processing studies of Carotenoids from vegetables

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Carotenoids are naturally occurring, tetraterpenoid pure able pigments found in various fruits, fungi, bacteria, algae and vegetables. Various epidemiological studies have demonstrated that use of food stuff rich in carotenoids plays an effective role in prevention of cataract formation, age related macular degeneration, lower incidence of cancer and cardiovascular diseases. In the future, detailed composition of carotenoids in vegetables may contribute significant information to select various rich plants for food formulation. The aim of the study is to compare the estimated concentration of carotenoids in various samples of commonly used carotenoid rich vegetables Daucus carota, Capsicum annum, Beta vulgaris and Brassica oleracea L and to study the effect of heat and frying on β-carotene content of samples at various time intervals. Carotenoid extraction was done using solvents and absorbance was measured at 503nm. In the thermal studies of the effect of boiling and frying on carotenoids was seen at varied time intervals. The results have shown that the concentration of carotenoids was considerably affected by heat. Hence, it can be concluded that prepared food formulations should make use of the raw form in order to achieve maximum health benefits. The manufacture of nutritional supplements with carotenoids may prove beneficial for the prevention of problems like photosensitivity, photoaging and UV induced pigmentation.

IIMT23134

Exploring Pathways for Cancer Development: An Insights into Cancer Prevention

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Cancer causes a major health concern worldwide due to its high incidence and mortality rates. Cancers arise from the transformation of a single cell so that its behavior is no longer under the control of normal regulatory pathways. As a result of homeostatic modifications, it further leads for cancer progression. On the other side, levels of various suppressor genes and oncogenes has been disbalanced and dysregulation of cell cycle checkpoints lead to the progression of cancer. It results into proliferation and multiplication of cells in uncontrolled manner. These cells also start evading apoptosis and initiating interactions with apoptotic proteins. Proliferating cells, decreased apoptosis and increased expression of VEGF leads for continuously growing of cells and its metastasis. There are several treatment options including chemotherapy, surgery etc. In presented review, we are focusing on the role of herbs/herbal APIs in controlling the development of cancer or the prevention of cancer. Many herbal chemical agents derived from nature have a lesser number of side effects and are active against cancer-inducing agents (INK, c-JUN, Bcl2, BAX, GADD, Bactin, p53, Caspase, PARP, autophagy, and NF-kB). Various herbal agents also have been reported for their chemo preventive action in curcumin, Vitamin D3, EGCG, resveratrol, Fisetin, berberine, sanguinarine etc. In vitro, in vivo, in vitro, and silico studies. In conclusion, drugs having antiproliferating activity, apoptotic inducing action with anti-angiogenic potential might be a lead molecule/modification for the prevention of cancer progression and development.

IIMT23135

Advanced Review on Porous Microparticles: An Overview

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Porous microparticles are advance type of carrier, which provide a large surface area, high porosity, consistent homogeneous porous structures, configurable pore diameters with a restricted distribution, and clearly outlined surface features. Porogen or templating agents are used to produce pore. Without the use of pore-forming chemicals or chemical synthesis, self-forming pores can be created. This study compiles information on varied porous particles utilized in a variety of pharmaceutical sectors for achieving desired goals. This also help in enhancing the solubility of poorly soluble medicines or drug, developing novel drug delivery system, and improving the functional features of drug loaded particles. The efficiency of porous particles depend upon various pore characteristics like their size, porosity, shape, surface area, and surface properties, are all directly related to these functions. The proper use of porous particles has greatly aided the development or progress of pharmaceutics, with the numbers of published data steadily increasing from year to year. The goal of this study is to provide up-to-date reviews on Porous Microparticles methods, drug loading, characterization, and pharmaceutical applications, which may be used as useful reference for interested readers.

IIM122136

A review article on the recent developments of anti tbdrugs mainly nano particles based drug delivery system

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Tuberculosis is a disease which is directly related to the lung infections. Lungs plays a vital or essential role in the respiration activity. It is a kind of infectious disease responsible for millions of death across world wide. as we all want to cure this disease in more specific and treatable way so all scientists working on the new developments of drugs and their combinations. Multi drug resistance is one of emerging kind of tuberculosis in this the drug therapy doesn't work properly and there is no improvement of patient health. One of the best way to improve drug action on the disease is to develop nano formulations. Nano formulations are those which is homogenous particles of drugs and excipients nanomedicines that the particles diameter is in nanometers. As the particle size of drug decreases the surface area is increases. Due to high surface area the binding or drug specific release is more. nano particles, niosomes, liposome, nanoemulsions are the various techniques used in the formulations. One of the best advancement is nano based emugel. It is the formulation having both consistency like gel and emulsion . It is a kind of emulsion , emulsion have oil and water both parts so it show high affinity with respect to cough and tuberculosis . The formulation can easily binds with the site specific area and produce effect for a long period of time. This is a kind of sustain release and site specific formulation for tuberculosis. This review article will give a detailed knowledge about the signs, symptoms, kind of disease,mechanism, drug availability, advancement, treatment, and nanotechnology or nanomaterials role in it.

IIMT23137

Phytochemical screening and thin layer chromatography of medicinal plants: Mimosa Pudica Linn root (Leguminaceae)

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Mimosa pudica Linn is an ornamental potential herb belonging to the taxonomic group of Magnoliopsida and family Leguminaceae. Besides its ornamental use, Mimosa pudica is also a popular plant among folk healers to cure several diseases including bleeding disorders such as menorrhagia, dysentry with blood, migrain and piles, and wound healing. To characterize this plants in terms of secondary metabolites, qualitative reactions of staining/ precipitation were performed. The results obtained showed the presence of several types of phenolic compounds namely tannins, flavonoids, anthocyanin, coumarins, and other secondary metabolites such anthraquin, steroids and terpenes, essential oils, saponins and glycosides. For this hyperchromatography (TLC) was performed first to confirm the qualitative characterization of phytochemical screening, second to separate different molecules of each secondary metabolite and show the diversity in methanolic extracts. The TLC results are presented in the form of spots and Rf(ratio) reports Rfs reflecting the plurality of component molecules in both of studied plants. This diversity of secondary metabolites can be at the origin of the widespread medicinal properties and therapeutic uses of the studied plants.

IIMT23138

Formulation development and evaluation of proniosomal drug delivery system for diclofenac sodium with enhanced transdermal delivery potential

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The objective of the present research was to develop and evaluate the proniosomes of diclofenac sodium as a model drug to increase its solubility and permeation through skin for enhanced transdermal drug delivery in systemic circulation avoiding hepatic first pass metabolism. The proniosomes were prepared by coacervation phase separation method and characterized for various preliminary parameters like vesicle size, entrapment efficiency, in-vitro drug release studies by using semi-permeable membrane. Results revealed that all the formulations were found to be smooth and spherical in shape and average particle size was found to be in the range of 17.82±1.54 to 25.22±1.02 (size influenced by agitation). Drug loading efficacy (%) of proniosomes was found in the range of 80.76±6.96 to 99.92±1.36, entrapment efficacy was maximum for formulation F04 and minimum for formulation F05. The in-vitro drug release study was performed in phosphate buffer solution at pH 7.2 and by changing the combination of different types of surfactants the % drug release were found in the range of 85.12±3.82, 80.46±2.64, 80.87±2.92, 79.12±2.62 and 76.25±2.10 for formulations PF1, PF 2, PF 3, PF 4, PF 5 and PF6 respectively. Finally, present study conclusively demonstrated that drugs having poor water solubility showed enhanced bioavailability by transdermal route via proniosomes.

IIMT23139

Nano-Carrier delivery system for the therapy of Rheumatoid Arthritis

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Rheumatoid Arthritis (RA) is an Auto-immune disorder that causes inflammation in the joint's lining. RA attacks synovial tissue which results in bone deformity and bone erosion. There are two words Rheumatoid and second is Arthritis. Rheumatoid means joint disorder and Arthritis means inflammation in joints. Nanotechnology offers the potential to improve drug solubility and stability, prolong drug half-lives in plasma, minimize off-target effects, and concentrate drugs at a target site. Nanotechnology is traditionally defined as submicron-sized molecular devices or nanoparticles predominately ranging from 1 to 500 nm. Nanomaterial is booming and their applications in biomedicine including diagnostics and therapy are dramatically growing due to their high drug loading efficiency, multi-modality imaging capability, and passive and/or active targeting effects. By using the nano-scale drug carriers, therapeutic or imaging agents can be selectively delivered to the desired inflammation sites in a controlled or sustained manner. The increase in vascular permeability and macrophage infiltration are the main pathological characteristics of RA, which can provide favorable conditions and target cells for nano-drug delivery systems. Persistent inflammation increases vascular permeability, which allows the nano- drug carrier to selectively accumulate and release drugs in the synovial tissue through the "ELVIS" (Extravasation through Leaky Vasculature and the subsequent Inflammatory cell-mediated Sequestration) effect. It is concluded that the therapeutic effects of traditional anti-RA drugs can be substantially enhanced, and their side effects induced by short biological half-life and poor bioavailability can be obviously lowered.

IIMT23140

Kinase Inhibitors in the Management of Career: Therapeutic Opportunities from Natural Compounds

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As an important source of drugs, natural products play an important role in the discovery and development of new drugs. More than 60% of anti-cancer drugs are closely related to natural products. At the same time, as the main cause of tumors, the abnormal activity of kinase in multifunctional protein has become an important target for clinical treatment although small molecule targeted drugs dominate the concentration. Natural active products are driving the development of new kinase inhibitors with their unique mode of action and molecular structure diversity. Obtaining new chemical entities with kinase inhibitory activity from natural active products will bring new breakthroughs in the research of anti-cancer drugs. In this paper, different kinases are mainly classified as targets, and natural products and derivatives which have been found to inhibit kinase activity involved in cellular communication, integrating and transducing extracellular signals from cell-surface membrane receptors) have been described. It is expectable to by analyzing the different aspects of the source, structural characteristics, mechanism of action and biological activity of these natural products, new members can be developed into drugs and promote the development of anti-cancer drugs.

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IIM123141

Quercetin attenuating neuroinflammation- a promising therapeutic strategy in Alzheimer's disease

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Alzheimer's disease confers to 60-80% of total dementia cases, mostly affecting elderly group (65 years of age or older). Neuroinflammation is the hallmark in pathogenesis of Alzheimer's disease (AD). Quercetin, a flavonoid is widely distributed among plants predominantly found in daily diets. It has been shown to afford neuroprotective effects in combating neurodegeneration in AD. Hyperphosphorylation of tau proteins by Aβ has been a major contributing factor in neurodegeneration which is triggered by upregulation of various inflammatory cascades. Efficacy of quercetin in attenuating neuroinflammation has been extensively studied. Targeting microglial inflammatory events might afford a constructive strategy in amelioration of the disease. Overstimulated microglia lead to upregulation and activation of various inflammatory signaling pathways.Quercetin has reportedly shown anti-inflammatory action which could reverse neuroinflammation by inhibition of inflammation by suppressing inducible nitric oxide synthase gene expression in microglia, production of inflammatory cytokines and downregulation of various signaling pathways (JNK/Src phosphorylations) affording neuroprotection. Promising therapeutic effects such as improvement in memory and cognition has been observed. Noticeable outcomes are obtained against any further damage and oxidative stress. Quercetin has shown notable pharmacological effects by making neuroinflammation in AD and could be a viable lead compound in further studies.

IIMT123142

Acute pancreatitis – a pancreatic disorder inflammation in pancreas

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Acute pancreatitis is a disorder commonly seen in middle age and elderly aged human but it can affect any age groups. This disease involves direct inflammation on the site and walls of pancreas. It can be due to high consumption of alcohol and from pancreatic enzymes. Pancreatic enzyme are those produce can affect the organ. Functioning. One of the reasons for pancreatic disorder is chronic and dehydration. pain relief medicines and antibiotics are used to treat pancreatitis. Mostly IV injections of antibiotics are used to treat this condition. Long time of suffering from acute pancreatitis can lead to chronic pancreatitis, which is unrecognizable in some cases. Antibiotics, hydrating agents, pain relief medicines are used for acute pancreatitis. This disease is very much common now days due to heavy diet, unhygienic food, dehydration and various organ problems. This article includes full knowledge about the disease such as its introduction, type of disease, pathophysiology, treatment and novel approaches. In recent advancement the acute pancreatitis disease is treated through use of nanoparticles and advance dosage forms. Extended release dosage form alters the resident time of drug at the site of action. By using routine diet plan, consumption of more watery fruits, daily physical exercise, less spicy food can help to away from such kind of diseases. A packet food and use of medicines can treat this condition. As per WHO guidelines Acute pancreatitis is very common and it is the highly hampering organ of most of the people.

IIMT23143

Artificial Intelligence in Drug Delivery System for Tumor Targeting

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Artificial Intelligence has many applications in today's society a common problem of drug administration in all types is that drug interplay at any given time of treatment is dependent on dose and is patient specific. The development of Nanotechnology mediated gene delivery nitrobiphe therapies has made it possible to integrate artificial intelligence. The significant challenge is to create new kinds of Nano carriers are capable of responding selectively to cancer specific conditions and fast release of drugs and target cells. Cancer is a disease in which abnormal cells divide without control and can invade nearby tissues. Chemotherapy uses chemical substances to destroy or stop the cancer cell growth. There are unexpected results of modern chemotherapy as it targets fast developing cells or higher growing cells of the body that are not cancerous. A new type of system of drug delivery consists of Nano carriers, mechanism of targeting and technical stimulus. This gives the use of artificial intelligence in drug delivery system for tumor targeting.

IIMT23144

Integration Of Artificial Intelligence And Nanotechnology For Cancer Theranostics

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Cancer, the most lethal and devastating disease causing millions of deaths worldwide. Cancer initiation, prevalence and increasing mortality rate as evidence in different statistics unveiled by different cancer burden indicates the need for some advanced technology for cancer treatment. One such emerging treatment technology is nanotechnology. Nanotechnology can be integrated with Artificial Intelligence (AI) for improved treatment and diagnosis. Recent convention between these two fields is enabling better patient data acquisition and improved design of nanomaterials for precision cancer medicine. Diagnostic nanomaterials are used to improve the treatment outcome, however, high interstitial and intracellular transportation make the rational design of diagnostic and therapeutic platforms extremely difficult. Integration of AI approaches can bridge this gap using pattern analysis and classification algorithms for improved diagnostic and therapeutic accuracy. Optimizing drug and dose parameters in combinatorial nanomedicine administration is a specific area where AI can accurately realize the full potential of nanomedicines. Here, fundamental concepts in AI are described and the contributions and promise of nanotechnology coupled with AI to the future of precision cancer medicine are reviewed.

IIMT23145

PATHOGENESIS OF UV SUNLIGHT EFFECT ON XERODERMAPIGMENTOSUM

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An uncommon dermatological condition known as Xeroderma pigmentosum is unusually prevalent in several regions of the world. Its etiology is due to defects in either the polymerase-g, or cross-seen DNA polymerase in charge of translational DNA synthesis, or the nucleotide excision repair (NER) pathway. XP is characterized by high levels of photosensitivity, ophthalmologic abnormalities, neurological deterioration, and a markedly increased risk of skin cancer. Neurological symptoms, such as sensorineural deafness, mental deterioration, and ataxia, affect 25 to 30 percent of XP patients. 30% of individuals who suffer have an intensified and prolonged sunburn reaction. When a person is first exposed to the sun, the medical problem first manifests in their skin, usually between the ages of one and two years. Symptoms on the skin quickly resemble scars of sun exposure. Squamous cell carcinoma is derived from epidermal keratinocytes and adnexal components (such as sebum glands or pilosebaceous units). Actinic keratoses (AK) is challenging to categorise. Although many doctors consider AK to be a precancerous lesion, Bernard Ackerman claims that it is actually a type of SCC in situ. Results reported here reveal that DNA repair malfunction predisposes human cells to synthesize higher amounts of PA in response to UV-light damage. Contrary to all prior reports, which stated that repair was normal, heterozygotes have been noted in which excision repair is decreased. The higher induced mutation rates at the hypoxanthine phospho-ribosyltransferase (HPRT) locus in XP cells lend further additional genetic loci.

IIMT23146

Recent advancement of nanotechnology in cosmetics

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The use of nanotechnology has stretched across various streams of science, from electronics to medicine and has now found applications in the field of cosmetics by taking the name of Nano cosmetics. Nanomaterials are used in cosmetics for a variety of purposes. Owing to improved particle properties such as colour, transparency, and solubility, achieved at the nanoscale, nanotechnology has a significant impact on the cosmetic industries. The most important quality of cosmetics is maintaining an inventive appearance, changing the odour, or eliminating body odours while keeping the skin and its surroundings in their natural condition. Recent developments in nanotechnology made it possible to produce nanoencapsulated particles for a variety of biomedical purposes. The scientific community may use nanoscience to discover more innovative and effective cosmetics. Nanosomes, liposomes, fullerenes, solid lipid nanoparticles, and other types of nanomaterials are used in cosmetics. In recent seasons, definition of cosmetics is gradually changing as their use is viewed as a vital component of nutritional wellness. Nanotechnology has the potential to improve ease and new delivery methods for drugs. This quickly evolving technology has been extensively used for both therapeutic and diagnostic purposes.

IIMT123147

TOPICAL DELIVERY OF BOSWELLIC ACID LOADED TRANSFERSOMES FOR RHEUMATIC ARTHRITIS

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An effective, successful therapeutic treatment can be attained in numbers of cases, such as the occurrence of hepatic first pass metabolism, adverse side effects, the rejection of invasive treatments, and poor patient compliance. To overcome these difficulties we have our promising approach for transdermal delivery systems. Nanoencapsulation using a lipid-based vesicular system such as liposomes has been used to overcome the aforesaid challenge. Liposomes facilitate drug transport through the skin but they do not deeply penetrate into the viable skin and blood circulation. These major concerns have led to the discovery and development of other novel vesicles such as niosomes, sphingosomes,bilosomes, cubosomes, transfersomes, ethosomes and invasomes.Rheumatoid Arthritis is a common inflammatory disorder. It may cause joint deformity if untreated early. Rheumatoid Arthritis characterized by chronic pain, inflammation at joints and destruction of joints.In our research we are working on boswellic acid loaded transfersomes for the treatment of RA, this kind of formulation is not available in current days.Transfersomes were used for non-invasive delivery of drugs into or across the skin.Transfersomes are also known as elastic liposomes or flexible vesicles which have heterogeneous ability than conventional liposomes. The transfersomes were prepared by modified hand shaking. lyral. The hydration technique.Boswellic acid a series of pentacyclictriterpenoid molecules produced by plants in the genusBoswellia.Boswellia is an effective anti-inflammatory (useful in RA) and may prevent loss ofcartilage. Boswellic Acid transfersomes is a more effective formulation than the ones that were already in use.

IIM122548

Gene therapy in treatment of chorea

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The ultimate goal of gene therapy of a defective gene sequence will some adult victim inheritable disease for the life time of the patient this challenging task is not yet accomplishedhowever, significant progress is evident Chorea is a common movement disorder. This causes sudden unintended and uncontrollable jerky movements of the arm legs and facial muscles. It can be caused by a large variety of diseases including neurodegenerative diseases, metabolic diseases and autoimmune diseases. Onlysymptomatic treatment is available for patients with chorea. The most widely used agents in thetreatment of chorea are neuroleptics, the basis of their mechanism of action is related to blockage of dopamine receptors. There are genetic and non genetic causes of chorea these are mainly neurological psychiatric.The CAG present in the gene will result in mutated protein called chorein, that makes it prone tomisfolding and eventually cause the aggregation of the protein. Chorein can regulate geneexpression when an abnormal conformation occurs in the chorein protein it gains toxic functionsthat affect the CNS. The main task of gene therapy in this disease will be selectively replacing,repairing or controlling. The expression of mutant gene by the transfer of genetic material to theneurons cells that are responsible for this disease.

IIMT2314-9

Glycosylation of Morin to Enhance its Pharmacological Activity

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Morin is a natural flavonol categorized as polyphenol, primarily isolated from members of the Moraceae family, and can be extracted from the fruits, leaves, twigs, and roots of numerous plants. Multiple lines of evidence have demonstrated that Morin can have a beneficial effect on several human diseases. In fact, Morin exerts antioxidant, anti-inflammatory, anti-tumoral, anti-diabetic, antibacterial, anti-hypertensive, hypocholesterolemic, and neuroprotective effects, by modulating the activity of many enzymes. However, inter-subject variability and a few additional parameters, including physicochemical properties like lipophilicity and solubility, pharmacological aspects, and physiological conditions collectively reduce Morin stability, reliability, and permeability. This eventually leads to low oral bioavailability and has a substantial influence on the effectiveness and safety of Morin. Glycosylation of flavonoids is one of the potent methods to enhance water- solubility and thus increase the bioavailability of the bioactive compound. The glycosylation of flavonoids by various biochemical and molecular biology methods, including metabolic engineering, enzymatic glycosylation, chemical glycosylation, and microbial glycosylation.Glycosylation of flavonoid compounds is believed to be an effective way of making them more stable and water-soluble. In addition to improving their pharmacological activity by improving bioavailability, reducing acute toxicity and health risks, improving specific targeting, and removing the adverse effects. More research on flavonoid glycosylation needs to be done to use it effectively, as it is a more accessible method than medication development.

IIMT23150

ROLE OF GRAPHENE IN DELIVERING DRUG

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Carbon is one of the most abundant elements on Earth. In addition allotropic carbon modifications such as graphene-based nanomaterials and carbon nanotubes have recently come to the fore. These carbon nanomaterials can be designed to help deliver or target drugs more efficiently and to overcome therapeutic approaches. Graphene-based nanomaterials are being used experimentally to deliver therapeutic agents to cells or tissues both in vitro and in vivo. However, substantial challenges remain before moving to safe and effective use in humans. Approaches to overcome the problems like significant impact on behaviour and toxicity of the molecules that include modifications of the graphene or in combination with other molecules to accentuate favourable characteristics or modify adverse interactions. This has led to an emerging role for graphene as one part of highly-tailored multifunctional delivery vehicles. Its high surface area to volume ratio, polyvalent structure and the ease with which various forms can be functionalized offers capacity and flexibility for cargo loading, transport and targeting to tissues. Additionally, the ability to overcome hydrophilic and hydrophobic regions on the surface of GFN(graphene family nanomaterials) flakes supports both their solubility within aqueous environments and their subsequent interaction with lipids in cell membranes.In a DDS(drugdelivering system) , it is of the utmost importance to control the release of the bioactivecompounds. Recently, graphene-based materials, such as graphene oxide, have been gaining a lot of attention for their ability to act as a barrier or capping layer, delaying and controlling the release of biomolecules across them.GO(graphene oxide) has many potential applications in the biomedical fields as, for example, as non-viral gene transfer vectors, as part of oxygen delivery systems, as coating for biomedical implants, as scaffolds to drive neuronal growth and regeneration.

IIMT23151

Scabies: A review on Management and current non-invasive treatment

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Scabies are an ectoparasite caused by the mite Sarcoptes scabiei var hominis, an obligate human parasite. They are common causes of skin rash and pruritus and are associated with low morbidity. Common predisposing factors are overcrowding, immigration, poor hygiene, poor nutritional status, homelessness, dementia, and sexual contact. To transfer the mites, direct skin-to-skin contact between 10 and 20 minutes is needed. Early identification and prompt treatment of infected subjects is essential to avoid outbreaks, considerable morbidity, and significantly increased economic burden. The standard diagnostic technique consists of mites' identification by microscopic examination of scales obtained by skin scraping. Ivermectin has recently shown good success in the treatment of scabies and it may be especially helpful in epidemics in institutions and in areas where scabies is prevalent. Although decreasing effectiveness in the treatment of pediculosis pubis has not been recorded, resistance to these topical treatments has been reported in head lice. Malathion 0.5% aqueous lotion, ivermectin 1% lotion, and crotiton 6-10% cream, ointment, or lotion are other therapies. This review aims to highlight the most important advocacy and research headlines with their implications for the diagnosis and management of outbreaks and individuals, as well as to summarize recent developments in our understanding of scabies.

IIM123152

In-Silico Study of Phytochemicals as Adjuvant In The Presence of Lacosamide to Enhance the Anti-Epileptic Effect of Drug

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Epilepsy disorders that arise in the brain as a result of excessively high amounts of activity and neuronal abnormalities. The brain disorder epilepsy-lacosamide is unleashed by chronic epileptic seizures. Epileptic seizures are characterized by abnormal electrical activity in the brain and include convulsions, loss of consciousness, and sudden recurrent sensory disruption. The antiepileptic medication lacosamide is frequently prescribed to treat partial-onset seizures. Yet, because of medication resistance strengths, side effects, and inadequate brain penetration, its usefulness may be constrained. In this work, we sought to determine whether phytochemicals may be used as adjuvants to boost the anti-epileptic efficacy of lacosamide. To find phytochemicals with a high affinity in the presence of lacosamide drug binding, we employed a blinded docking technique. For the study, quercetin, gallic acid, and gingerols were the phytochemicals used. To forecast the interactions and binding energies between the phytochemicals and the drug-binding site, molecular docking simulations were run. According to the data, the binding energies of the phytochemicals with the protein were -5.43 kcal/mol, -5.78 kcal/mol, and -9.01 kcal/mol. It was intriguing to discover that the phytochemicals' and the drug's binding sites were different. findings imply that the medication lacosamide binds to the primary active sites. In contrast, phytochemicals bind to allosteric or site, which indirectly improves the drug's overall activity. Hence, it can be said that using phytochemicals as an adjuvant can successfully minimize the frequency of doses and side effects.

IIMT23153

Nanotechnology in treatment of Multiple Sclerosis

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The utmost developing wing in pharmaceutical science is known as pharmaceutical nanotechnology. The potential of Nanotherapeutics is to provide targeted drug delivery, enhance drug solubility, increase the half life of drug, improve a drug's therapeutic index and reduce its immunogenicity. Multiple sclerosis is a multifactorial disease. It is considered an immune mediated disease in the immune system attacks the myelin sheath that provides insulation to the nerve cells in the patient's brain, optical cord and spinal nerve with the damaged and compromised nerve membrane the nerve cells are not able to conduct electrical signals properly resulting in limb numbness, paralysis, vision and other neurological disorder. A combination of genetic and environmental factors appear to be responsible. The Main purpose of this is to highlight the advancements in nanotechnology that makes a drug cross the Blood Brain Barrier and having therapeutic and imaging components to improve tissue imaging so as to get accurate diagnosis or detection of multiple sclerosis lesions. An actual desiring to stop or reduce progression of MS disease is to be found out using stem cells and nano technology may increase the efficiency of therapies. Nanotechnology could be used as a tool to apply changes to stem cells by delivering genes and small RNA into stem cells to make them potent.

IIMT23154

Extraction, Identification And Anti-Microbial Activity Of muellera Hexandra

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Muellera hexandra, commonly known khirri belongs to the family papilionoid. It is a slow growing evergreen species native to India, Sri Lanka and south Asian countries. The plant is harvested from the wild, mainly for local use of its edible fruit. It is sometimes cultivated in the tropics and subtropics for its fruit. The plant is traditionally used for the treatment of ulcer, bronchitis, jaundice, arthritis and alcoholism, ulcer, fever and hyper dyspepsia disorders. The preliminary investigation identified the flavonoid and phenolic-rich extract through Phytochemical Screening methods. The present work aimed to find out the anti- microbial activity of the leaf extract of Muellera hexandra. The hydroalcoholic and organic extracts were prepared from leaves of Muellera hexandra to observe the comparative potency of both extracts. In this study, leave extract has been evaluated for anti-microbial activity. Various methods and pathogens like MTCC 96 (S. aureus) and MTCC 737 are used to evaluate anti-microbial activity. In vitro agar well assay exhibited highest antibacterial activity by SRM050, showing an inhibition zone size of 11.67 ± 0.84 to 13.67± 1.04 mm while SRM015T exhibited inhibition between 09.89±2.37 to 11.77 ± 1.00 mm.

IIMT23155

Deleterious effects of antinutritional components and their reduction strategies in herbals

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Anti-nutrients like oxalate, phytate, tannins and toxic substances like cyanide are present in many herbals. Anti-nutrients are responsible for adverse effects related to the absorption of nutrients. Oxalates in herbals are bind to calcium and prevent it from being absorbed. Phytates (phytic acid) can decrease the absorption of iron, zinc, magnesium and calcium. Saponins can interfere with normal nutrient absorption. Tannins in fruits like grapes can decrease iron absorption. They can also act as protease inhibitors reducing protein digestibility and inducing adequate amino acid absorption. Cyanogenic glycosides release cyanide in the body. Some herbals contain high levels of cyanide, a respiratory poison. The anti-nutrients present in herbals can be reduced through washing, blanching and cooking. Eliminating these components have been proven to be more effective. Removal of anti-nutrients can results in better availability of plant nutrients. The major challenges and the reduction strategies in developing herbals were discussed in the present study.

IIMT123156

Biotechnology

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Background: Biotechnology is a diverse field which involves either working with living cells or using molecules derived from them for applications oriented to- ward human welfare using various types of tools and methodologies

Principle The principle of gene therapy is based organ replacement in classic genetic diseases, gene augmentation

Procedure: Biotechnology procedures modifies the genetic makeup of the organism. This is based on recombinant DNA technology. 1. Isolation of DNA. 2. The second step is DNA fragmentation, by adding restriction endonucleases on the isolated DNA fragment and obtaining the desirable pieces of DNA. 3. The next step is ligation of desired fragments of DNA into the vector. This vector is responsible for carrying the fragment and transferring it for cloning gene. 4. In the next step, the recombinant DNA is transferred to the host and is then transferred into the nutrient medium. 5. The next step is the placement of the transformed cells in a desirable nutrient medium. This is an enriched nutrient medium that allows optimal growth at the correct time. 6. The last and final step of genetic engineering is to extract the desired product with recombinant DNA technology

Results: It has helped improve food quality, processing& manufacturing, where simple proteins and cells could be manipulated to produce chemicals

Conclusion: Constant research and development are helping in superior varieties of multiple organisms and systems

IIMT23157

BIOTECHNOLOGY AND ITS APPLICATION

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Biotechnology is a multidisciplinary field which has major impact on our lives. It is a combination of two words "Biology" and "Technology". Thus all the methods of technology that can be applied to enzymes, research, enhance, and synthesize new products for the continuing benefits of plant and animal life healthcare (diagnosis and therapeutics, diseases, pharmaceuticals) agriculture (food), and environment is defined as biotechnology. It has changed our daily life as its products brought qualitative improvement in health and food production. Biotechnology deals with large scale production and marketing of products and processes using live organisms, cells or enzymes.The applications of biotechnology include therapeutics, diagnostics, and genetically modified crops for agriculture, processed food, bioremediation, waste treatment, and energy production. It has also successfully helped in Green Revolution, Gene Therapy, Insulin Production, Molecular Diagnosis functions of Transgenic animals to understand how genes contribute to the spread of a disease by serving as models for human diseases, such as cancer, cystic fibrosis, rheumatoid arthritis and Alzheimer's.It merges biological information with computer technology to advance research in other areas, such as nanotechnology and regenerative medicine. In food industry, its approaches are applied to improve the nutritional, functional and sensory attributes of food in milk, meat, fish, and beverage processing industries, helps to reduce the quantity and number of unhealthy ingredients in foods as well as removes allergenic substances.

IIMT22158

ACNE: A YOUTH PROBLEM

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One of the common chronic inflammatory skin diseases is Acne Vulgaris that affects up to 80% of a teen-age population. Acne is one of the most common skin disorders and its occurrence is closely related to many factors, including sebum secretion, hormone levels, bacterial infection, and inflammatory reactions. Among them, changes in sebum secretion are believed to be one important factor of acne. Increased sebum secretion not only alters skin microbiota, and increasing evidence indicates sebum component changes are also strongly related to acne occurrence. Recent research has shed some new light on the involvement of the sebaceous gland, as well as on the pro-inflammatory activity of the cutaneous microbiome. During puberty, alterations of the sebaceous lipid profile, skilled desquamation, stress, exercise, cosmetics and personal dietary factors lead to inflammation and formation of different types of acne lesions. Dysbiosis, the process leading to a disturbed skin barrier and disequilibrium of the cutaneous microbiome, resulting in the proliferation of P. acnes strains, a another important process that triggers acne. P. acnes activates the innate immunity via the expression of protease activated receptors (PARs), tumour necrosis factor (TNF)-α and toll-like receptors (TLRs), and the production of interferon (INF)-γ, interleukins (IL-8, IL12, IL-1), TNF, and matrix metalloproteinases (MMPs) by keratinocytes, resulting in the hyperkeratinization of the pilosebaceous unit. The present article will examine the recent data substantiating the economical and functional impact of acne on the affected individual. Criteria to identify high-risk patients are provided. High-risk patients are those at increased risk for psychological and functional impairment or self-injurious behavior.

IIMT23189

Unraveling the Complexity of Metabolic Syndrome: An In-Depth Review

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Metabolic syndrome is a complex condition characterized by a cluster of metabolic abnormalities, including obesity, insulin resistance, and dyslipidemia, which increase the risk of developing cardiovascular disease and type 2 diabetes. The prevalence of metabolic syndrome is increasing globally, particularly in developed countries. Although the precise aetiology of metabolic syndrome is not entirely understood, it is thought to be a result of a genetic and environmental context that includes sedentary behaviour, a poor diet, and stress. The syndrome is widespread in both industrialized and developing nations, and it is growing more widespread as a result of alterations in lifestyle and population ageing. In conclusion, the care of metabolic syndrome must take a diversified strategy because it is a complex medical problem. Early detection and treatment interventions can help reduce the likelihood of major consequences.

IIMT23160

A REVIEW ON CANCER

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Cancer is a severe and invasive illness that impacts millions of individuals globally. It results from the uncontrolled proliferation and diffusion of abnormal cells in the body, leading to the development of tumours and other grave health problems. Despite the advancements made in medical research and treatment alternatives, cancer persists as a significant health obstacle and remains a primary cause of fatality on a worldwide scale. This summary aims to present a broad outline of cancer, encompassing its origins, risk factors, symptoms, and existing therapies. Moreover, it will examine the latest developments in cancer research and showcase some of the most encouraging approaches to treating and curing this devastating ailment.

Different cancer stages have been identified by researchers, suggesting that a number of gene alterations are involved in the aetiology of cancer. The aberrant cell proliferation caused by certain gene mutations. A crucial role in the acceleration of cell proliferation is played by genetic diseases brought on by heredity or hereditary factors. Additional knowledge has been gathered that can be helpful for early diagnosis and appropriate treatment with the use of technical advancements in bioinformatics and molecular approaches. The negative effects of medications on cancer patients can be anticipated and in some cases managed. Recent molecular genetic investigations have identified the mechanisms of carcinogenesis. These research findings enhanced our knowledge of how genetic abnormalities contribute to the development of cancer.

IIMT23161

NANOTECHNOLOGY

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Background: The concept of nanotechnology was first introduced by physicist Richard Feynman.Nanotechnology is the study/application of extremely small particles, known as nanoparticles, which are typically between 1-100 nanometers in size.

Principle: The principle of nanotechnology entails understanding and manipulating the unique properties and behaviors of materials at the nanoscale, as well as designing and engineering structures and devices with novel functions and capabilities.

Procedure: Some general steps involved in the fabrication and manipulation of nanomaterials and devices include 1. **Synthesis:** This involves the creation of nanoparticles through chemical or physical methods. 2. **Characterization:** Techniques such as electron microscopy, X-ray diffraction,and spectroscopy can be used to analyze the structure, composition,and behaviour of nanoparticles. 3. **Assembly:** Self-assembly involves the spontaneous organization of nanoparticles into ordered structures due to attractive forces between them. 4. **Manipulation:** Techniques allow for the precise fabrication of nanoscale structures and devices, and to manipulate individual atoms and molecules. 5. **Integration:** Nanoscale materials and devices can be integrated into larger systems or devices to take advantage of their unique properties.

Results: Nanotechnology has resulted in innovations across many fields, including improved electronic devices, enhanced drug delivery and improved medical diagnostics.

Conclusion: Nanotechnology has revolutionized science and technology by enabling the manipulation and control of matter at the nanoscale. This has led to the development of new materials and devices with unique properties and functions.

IIMT23162

Effect of Boswellia serrata constituents on Anti inflammatory activity in CFA induced Animal model of Rheumatoid arthritis

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Boswellia serrata, also known as "Salai Guggal," is one of the oldest and most valuable plants in Ayurveda and fulfils a variety of functions. Due to the plant's potent anti-inflammatory characteristics, traditional medicine has long used it as a natural anti-inflammatory treatment. Alpha pinene, the plant's active component that helps treat rheumatoid arthritis, is extracted from the leaf using the pyrolysis process. These bioactive natural materials can be used to treat conditions like arthritis, an autoimmune disorder characterised by persistent joint pain, swelling, and inflammation. Rheumatoid arthritis (RA) is a chronic inflammatory autoimmune disease that causes significant disability and early death. With a 0.5% -1% global frequency, RA affects women three to five times more frequently than it does men. CFA principally contains 1 mg/ml of heat-killed Mycobacterium tuberculosis suspended in mineral oil. Complete Freund's adjuvant (0.1 ml) was injected into the right hind paw of the rats. To engage in arthritic relieving activities that improve one's physical and functional capacities while reducing pain and stiffness

IIMT23163

Potential Therapeutic Effects of Metallic Nanoparticles in Wound Healing

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Extensive research into wound healing has led to the development an "ideal" approach that aims to promote rapid healing, minimize scarring, and preserve normal function. Conventional wound management includes topical therapy with antibacterial or colloid agents to prevent infection and promote good wound healing. Wound healing mechanisms include hemostasis, inflammatory, proliferative, remodeling phases, and growth factors such as EGF, PDGF, TGF, TGF-β, VEGF, KGF, and CTGF helpful in wound healing and cell-cycle activation.By stimulating appropriate movement in various phases of healing, nanotechnology provides a great method for accelerating the healing of acute and chronic wounds. In nanotechnology, small nanomaterials, nano scaffolds, nanofibers, and biomaterials are used for local drug delivery for wound healing. The use of metallic nanoparticles for biomedical and pharmaceutical applications has gained significant attention in recent years. Due to its great efficiency in repairing wound healing and treating and preventing bacterial infections, metal nanoparticles such as silver, gold, and steel are now being used more frequently in dermatology. The use of silver, gold, and iron oxide nanomaterials are often used in the medical field due to their recognized biocompatibility, simplicity of application, and minimal dressing changes. Metallic nanoparticles have been shown to activate growth factors through various mechanisms, including direct binding to growth factors, modulation of cell signaling pathways, and physical interactions with cell membranes. A multidisciplinary approach emphasizes wound caring, including prevention, identification and assessment, debridement and wound cleaning, modern wound dressings, oxygen therapy, and local treatment.

IIMT23164

Growth Factors-Conjugated Therapeutics for Targeting Melanoma

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Melanoma is the darkest type of skin carcinoma which develops in the melanocyte cells that produce melanin (a pigment giving color to the skin). Melanoma cancer is much more dangerous than non-melanoma cancer because of melanoma's ability to metastasize more quickly. Various therapeutic strategies have evolved, including radiotherapy, chemotherapy, phototherapy, and others, however, complete eradication has been difficult. Thus, targeted therapeutics are required to attain the best results with maximum therapeutic efficacy. Growth factors play a crucial role in regulating skin pathogenesis; thus growth factors-based targeted therapeutic strategies have been a new research domain for treating melanoma. Integration of these cytotoxic drug conjugates tissue homeostasis. Even though an organic mutation rather than growth factors initiate a departure from homeostasis and tumor initiation, the conclusions are the major regulators of all succeeding steps of tumor development, like angiogenesis and metastasis to distant places. Targeted therapeutic strategies can be designed by conjugating growth factor families like epidermal growth factor, cytokinesis, fibroblast growth factor, liver hepatic, and others. Melanoma-associated activating mutations interrupting these pathways often partially relieve melanoma's reliance on growth factors. Alternatively, growth factors are often involved in the evolvement of resistance to therapeutic regimens, which reveals the role of polypeptide growth factors in very late phases of melanoma progression and offers opportunities for melanoma cancer therapy.

IIMT23165

Metallic Nanoparticles-Based Therapeutic Strategiesfor Skin UVProtection

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Ultraviolet (UV) radiation from sunlight has numerous adverse effects, thus, obstruction of UV is strictly suggested for avoiding its harm. In addition, every year, more than 1 million people are diagnosed with skin cancer caused due to UV radiation. Conventional and most common sunscreen protective consist of zinc oxide and titanium dioxide, which offer effective defense and improve cosmetic practice. Though, health apprehensions have been elevated concerning their photo catalytic action, which produces reactive oxygen species (ROS) under UV light.Sunscreen is important in protecting your skin from ultraviolet (UV) radiation. Sunscreens are fine-tuned and designed to provide broad- and long-lasting protection. Sunscreens are made from organic and inorganic nanoparticles that provide chemical and physical UV protection. The ingredients in sunscreens are limited to protection, photostability, to offer a combination of both. Metal oxide and metal oxide nanoparticles (MNPs/MONPs) have been developed to improve the catalytic activity of metals due to the small size of the particles. MNPs/MONPs are progressively used in dermatology and cosmetology, particularly in preventing and treating or shielding against the injurious effects of the UV (ionizing) bacterial and fungal infections, and in formulations used for the reduction of scar visibility. Various metallic nanoparticle-based transdermal therapeutic strategies have been reported to exhibit skin protective effects from harmful UV rays. In conclusion, Metal oxide and metal oxide nanoparticles, particularly bio-synthesized Metal oxide and metal oxide nanoparticles, can be potentially used for skin care and dermatological treatments to improve patient compliance.

IIMT23166

HYPERTENSION DRUGS USED CURRENTLY IN THE MARKET

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Hypertension is one of the most prevalent cardiovascular diseases. It is widely spread all over the world. Over one billion people affect worldwide. However, in the population, mostly old age patients of this, but some people have resistant to hypertension and blood pressure is difficult to control effect. Hence, new therapeutic targets and treatments are needed to be exploited to control hypertension. In the past, old drug targets, such as the aldosterone receptor, aldosterone synthase, and Angiotensin-converting enzymes have been investigated. In this article, we summarize current knowledge on old and new drug targets and discussed the activity of new drugs in the treatment of hypertension, and analyze which drug is mainly used nowadays for antihypertensive in marketing. Thus, as per the Prevalence of hypertension in the world, the antihypertensive drug segment is a huge market and leaves lot of opportunities to place medicine that is highly accepted by both doctors and physicians and ultimately benefits both patients in term of health, medical facilities in case of improved prognosis of the disease and to the manufacturer of the medicines in term of higher sale and profit. Through these studies on hypertension, the current market trend is analyzed to study the most prevalent drug being used for the anti-hypertensive class and their market share, and also evaluate which pharmaceutical company is having high market capture in terms of prescription trend and marketing trend.

IIMT23167

Effect of Camphene on Doxorubicin-Induced Myocardial Infarction in Wister Albino Rats

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Title: To evaluate the cardioprotective effect of Camphene on Doxorubicin Induced Myocardial infarction in Wister albino rats.

Doxorubicin: The mechanism of doxorubicin-induced cardiotoxicity is complex and may involve various signaling pathways including free radical generation, prostanoids formation, calcium overloading, mitochondrial dysfunction, apoptosis and autophagy. Anthracycline compounds are major culprits in chemotherapy-induced cardiotoxicity, although extensive efforts have been directed to identifying strategies to prevent or limit their toxicity.

Camphene: Recent studies indicate that Camphene B has shown antioxidant and anti-inflammatory property in in vivo and in vitro studies. It has shown protection against hepatic mitochondrial membrane permeability transition during lipid peroxidation and fragmentation of proteins due to attack of reactive oxygen species and ability to scavenge hydroxyl radicals and inhibit the rat hepatic microsomal membrane lipid peroxidation. As the synthetic products are associated with various adverse effects, the natural products emerged as a better alternative for the treatment. So, in today's scenario the research work is moving towards natural products because of their various advantages like safety, efficiency and economy. effect of camphene on HepG2 lipid profile was compared with that of other lipid lowering agents that are known to affect lipid metabolism. The well-known HMG-CoA reductase inhibitor. Administration of camphene at a dose of 10 mg/g of body weight in hyperlipidemic rats resulted in a 36.9% reduction of total cholesterol ($p<0.001$), 34% of Low-Density Lipoprotein (LDL)-cholesterol ($p<0.001$) and 34.5% of triglycerides ($p<0.001$). Treatment of HepG2 cells with camphene led to a decrease in cellular cholesterol content to the same extent as mevastatin, a known HMG-CoA reductase inhibitor. The hypolipidemic action of camphene is independent of HMG-CoA reductase activity, suggesting that its hypocholesterolemia and hypotriglyceridemic effects are associated with a mechanism of action different that of statins.

Result: Therefore, the Result of our study indicate the Protective effect of Camphene on Doxorubicin-induced Myocardial infarction in Wister albino rats.

IIMT23168

NANOMHEMGEL AS A NOVEL DRUG DELIVERY SYSTEM

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The efficacy of drugs depends on the type of delivery system and this recent approaches have been developed to enhance the drug efficacy. One among the newer approaches is development of nanoemulgel or nanomicrogel which comprises of two delivery systems in a single dosage form. A nanoemulsion is fixed with carbopol as gelling agent. Nanoemulsion is a solid spherical carrier in nano sizes designed to enhance the specificity. Nanomicellar system is a colloidal drug carrier composed of amphiphilic monomers. This combination provides synergistic approach providing the benefit of prolonging the duration of action, increased incidence on skin, thereby increasing the contact time, maintaining steady state concentration, improving solubility of poorly soluble drugs, higher local drug concentration because of greater degree of skin deposition, avoiding both contact with the gastro intestinal tract and hepatic first-pass effects. Nanomicrogel is an improvised delivery system developed to overcome the major drawbacks faced by conventional drug delivery system. The ultimate aim of the dosage form is to enhance drug delivery in an effective way which can be achieved by decreasing the particle size to nano and by achieving micellar concentration. Nanomicrogel has been reported to have significant drug effect than the individual system. It is a combination of two delivery system such as nanomicelles and nanoemulsion formulated as a single dosage form like gels, ointments, creams etc. in case of topical applications which has multi absorption mechanism with several applicability.

IIMT23169

NANOSPONGES AN INNOVATIVE DRUG DELIVERY SYSTEM FOR TARGETED THERAPY

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The primary challenge that the researchers are working with is the target drug to specific areas. These issues may be resolved by the creation of novel colloidal carriers referred to as nanosponges. Nanosponges are novel drug delivery system that are porous and non-toxic in nature. The unique ability that makes it stand out is that it is stable even at a high temperature such as 300° C. Drugs that are hydrophilic and lipophilic can both be put into nanosponges. These microscopic sponges are able to travel through the body until they reach the desired target region, where they bind to the surface and begin releasing the drug in a steady and controlled manner, which makes it more effective in comparison with other drug delivery system. Vaccines, antibodies, proteins, and enzymes can all be effectively transported via nanosponges. The preparation process, characterization, and possible applications in drug delivery systems are highlighted in this paper.

IIMT23170

NOVEL DEVELOPMENT OF THROAT SPRAY FORMULATION FOR THE TREATMENT OF S. PYOGENES TONSILLITIS

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Background: The tonsillitis is an inflammation of the tonsillar tissues brought on by Streptococcus pyogenes, and it has been linked to eating disorders because of the pain. Tonsillitis can be treated with gargling and ointments, however mouthwash must be spit out after use, and ointment application necessitates inserting a finger into the oral cavity. The use of sprays, however, eliminates these possible compliance issues.

Material & Method: We have created a tonsillitis spray that stays on the mouth mucosa as a result. Allicin has reportedly been shown to treat tonsillitis when taken orally. Only 0.8% of allicin can be dissolved in water, but it can be readily dissolved in ethanol, chloroform, or ether. In addition, we also investigated the combination with the mucoadhesive polymer guar gluten (GG). Using a quartz crystal microbalance and dissipation monitoring, the interaction between mucosa and GG was studied.

Result: We observed that guar gluten increases mucosal tissue to a greater extent.

Conclusion: The designed spray will prove to be an excellent option in tonsillitis healing due to its high mucoadhesive capabilities. Therefore, additional clinical research is necessary to verify this.

IIMT23171

Potential for skin whitening and wound healing in an ellagic acid-loaded nano-emulsion

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EA is a potent drug candidate for wound healing but its solubility and permeability are unable to reach a therapeutic level. EA-loaded nano-emulsion was prepared using coconut oil to elicit out the solubility and permeability problems. Coconut oil has a high drug loading capacity with high compatibility with the human body. Coconut also exhibits a synergistic effect on wound healing and maintains the melanin level in the skin. Prepared nano-emulsion was an evaluation for its drug loading, particle size, pH, stability, and drug release. In-vivo wound healing potential of the prepared formulation was determined using the albino Wistar rat model. Prepared nano-emulsion showed significant wound healing activity. A prepared nano-emulsion may prove to be the best anti-wound healing formulation available in the future.

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MUCORMYCOSIS: A BRIEF REVIEW

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Mucormycosis is a rare but serious fungal infection that primarily affects people with weakened immune systems, such as those with diabetes, cancer, or HIV/AIDS. It is caused by a group of molds called mucormycetes, which are commonly found in soil, decaying organic matter, and even in the human body. The disease can manifest in several different forms, including rhinocerebral, pulmonary, gastrointestinal, cutaneous, and disseminated mucormycosis. The rhinocerebral form is the most common and affects the nasal passages and the brain. It can quickly spread to the eyes, the brain, and other organs, leading to blindness, organ failure, and even death. Mucormycosis is not contagious, and it can be difficult to diagnose, as its symptoms can be similar to those of other infections. Diagnosis typically involves a combination of clinical examination, imaging tests, and laboratory analysis of tissue samples. Early diagnosis and treatment are crucial for a favourable outcome. Treatment of mucormycosis usually involves a combination of antifungal medication and surgical removal of infected tissue. The antifungal drugs used to treat mucormycosis are often expensive, have significant side effects, and may not be readily available in some parts of the world. Surgery can be challenging and may require the removal of large areas of tissue, which can be disfiguring and can lead to functional impairments. Recent reports from several countries suggest a significant increase in the incidence of mucormycosis among people recovering from COVID-19. This has led to concerns that the infection may be linked to COVID-19 and its treatment, although more research is needed to establish a causal relationship. Other risk factors for mucormycosis in people with COVID-19 include the use of corticosteroids, uncontrolled diabetes, and the presence of other comorbidities. In conclusion, mucormycosis is a rare but potentially life-threatening fungal infection that primarily affects people with weakened immune systems. Early diagnosis and treatment are crucial for a favourable outcome, but the disease can be challenging to diagnose and treat. With the recent reports of an increase in mucormycosis cases among people recovering from COVID19, it is essential to raise awareness of the disease and its risk factors.

IIMT23173

AN EPIDEMIOLOGICAL SCOPING ASSESSMENT TO IDENTIFY RESEARCH CATEGORIES AND KNOWLEDGE GAPS IN THE PREVENTION OF ANTIBIOTIC RESISTANCE

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One of the greatest risks to public health today is antimicrobial resistance (AMR), which has been advanced by both insufficient infection control and overuse and abuse of antimicrobials in both people and animals. The usage of antibiotics and resistance have been linked in a number of studies. Programs for antimicrobial stewardship (AS) have been demonstrated to enhance patient outcomes, lower antimicrobial adverse events, and lower AR. The effectiveness of AS programmes increased when they were combined with other infection control strategies, particularly hand hygiene treatments. Multidrug-resistant organisms must be stopped from spreading by targeted segregation and environmental measures. In the presence of an antimicrobial, microbes can either killed or, if they carry resistance genes, survive. These survivors will replicate, and their progeny will quickly become the dominant type throughout the microbial population. Most microbes reproduce by dividing every few hours, allowing them to evolve rapidly and adapt quickly to new environmental conditions. During replication, mutations arise and some of these mutations may help an individual microbe survive exposure to an antimicrobial. Microbes also may get genes from each other, including genes that make the microbe drug resistant. Bacteria multiply by the billions. Bacteria that have drug-resistant DNA may transfer a copy of those genes to other bacteria. Non-resistant bacteria receive the new DNA and become resistant to drugs. In the presence of drugs, only drug-resistant bacteria survive. The drug-resistant bacteria multiply and thrive. The use of antimicrobials, even when used appropriately, creates a selective pressure for resistant organisms.

IIMT23174

PATHOGENESIS OF UV SUNLIGHT EFFECT ON XERODERMAPIGMENTOSUM

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An uncommon dermatological condition known as Xeroderma pigmentosum is unusually prevalent in several regions of the world. Its etiology is due to defects in either the polymerase-g or nonexpress DNA polymerase in charge of translational DNA synthesis, or the nucleotide excision repair (NER) pathway. XP is characterized by high levels of photosensitivity, ophthalmologic abnormalities, neurological deterioration, and a markedly increased risk of skin cancer. Neurological symptoms, such as sensorineural deafness, mental deterioration, and ataxia, affect 25 to 30 percent of XP patients. 60% of individuals who suffer from an intensified and prolonged sunburn reaction. When a person is first exposed to the sun, the medical problem first manifests in their skin, usually between the ages of one and two years. Symptoms on the skin quickly resemble years of sun exposure. Squamous cell carcinoma is derived from epidermal keratinocytes and adnexal components (such as sebaceous glands or pilosebaceous units). Actinic keratosis (AK) is challenging to categorize. Although many doctors consider AK to be a precancerous lesion, Bernard Ackerman claims that it is actually a type of SCC in situ. Results reported here reveal that DNA repair malfunction predisposes human cells to synthesize higher amounts of PPX in response to UV-light damage. Contrary to all prior reports, which stated that repair was normal, heterozygotes have been tested to which excision repair is decreased. The higher induced mutation rates in the hypoxanthine phospho-ribosyl transferase (HPRT) locus in XP cells lead for additional genetic loci.

IIMT23175

Pharmacovigilance on herbal formulation

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Pharmacovigilance is essential for developing reliable information on the safety of herbal medicine as used in Europe and the U.S. The existing systems were developed for synthetic medicines and require some modification to address the specific differences of medical herbs. Traditional medicine from many different cultures is used in Europe and the U.S. which adds to the complexities and difficulties of even basic questions such as herb naming system and chemical variability. Cooperation between orthodox physicians and traditional practitioners is needed to bringing together the full case details. Systematic pharmacovigilance is essential to build up reliable information on the safety of herbal medicines for the development of appropriate guidelines for safe effective use The objective is to extend safety monitoring and detect drug adverse events that have previously been unrecognized despite evaluations in clinical trials. Examples of the safety of other medicinal products including Herbals, Blood products, Biologicals, Vaccines

IIMT23176

Angelica Archangelica: A Himalayan herb forexploring the medicinal benefits

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Angelica archangelica Linn. is an important medicinal and aromatic herb (family Apiaceae). The indigenous population frequently uses the roots of A. Archangelica as seasonings. The aim of this study was to identify phytochemicals of aqueous root extracts of Angelica Archangelica which may contain of carbohydrates, protein, alkaloids, glycosides, sterols, triterpenes, saponins, tannins, phenols, flavonoids, and coumarins by LC/MS based analysis.The results from the current study demonstrated that *A.Archangelica* roots contained phenol, alkaloids, glycosides, saponins, flavonoids, tannins etc. some major components found in *Angelica archangelica* extract are Azelaic acid(20.6), 5-methyldecahydroazulene-3,5-diene-1,2-diol(21.8), Tetrachlorine phenol dimethoxybenzene (16.2), Tetrachloroanisole (12.2), Pimpinellin(21.3), Diethyl phthalate(14.4), Carvyl propionate(20.4) etc.The outcomes demonstrated by LC/MS results provided the medicinal value,antioxidant, antiulcer, anti-inflammatory potential of *A. Archangelica* roots, which can be used for developing novel delivery systems.

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