

SOUVENIR



INTERNATIONAL CONFERENCE

on

“Recent Advances In Drug Delivery System” (ICDDS-2025).

Organized by

G.C.R.G. College of Pharmacy, Lucknow

Date : 22nd February 2025 | Time: 09:30 am to 04:30 pm

Venue- B- Block Seminar Hall, G.C.R.G. College of Pharmacy

**G.C.R.G. Group of Institutions,
Chandrika Devi Road, Bakshi Ka Talab, Lucknow**

ABOUT G.C.R.G. GROUP OF INSTITUTIONS

G.C.R.G. Group of institutions is one of the largest Educational groups in Lucknow, Uttar Pradesh established in 2008. Spread over a sprawling 50 Acre of lush green campus, G.C.R.G. boasts state-of-the-art Educational facilities at its integrated Campus. The campus also has a fully equipped 300 bedded multi-specialty Hospital within the premises. Additionally, the integrated campus runs a multitude of professional courses in the fields of Engineering, Management, and Medical Sciences. The G.C.R.G. College of Pharmacy was established in 2017 by Dr Abhishek Yadav, Chairman of G.C.R.G. Group of institutions which is one of the largest educational groups in Lucknow, Uttar Pradesh established in 2008. Spread over a sprawling 50 Acre of lush green campus, G.C.R.G. boasts state-of-the-art educational facilities at its integrated Campus. The College of Pharmacy is recognized AICTE, PCI, and affiliated to Dr A P J Abdul Kalam Technical University, Lucknow & Board of Technical Education Uttar Pradesh Lucknow. The College offers D. Pharm, B. Pharm, and M. Pharm Program in two streams viz. Pharmaceutics & Pharmaceutical Chemistry. The G.C.R.G. College of Pharmacy is committed to provide conducive environment for development of student's knowledge and aptitude in the field of Pharmacy.

ABOUT CONFERENCE

Recent advancements in drug delivery systems (DDS) have revolutionized therapeutic approaches by enhancing drug efficacy, minimizing side effects, and improving patient compliance. From nanoparticle-based formulations to smart delivery platforms, cutting-edge innovations are reshaping modern medicine. Techniques like controlled release, targeted delivery, and bio-responsive systems enable precise drug action at the intended site, reducing systemic toxicity. Emerging technologies such as liposomes, dendrimers, and 3D-printed drug carriers further bridge the gap between conventional therapy and personalized medicine. Additionally, the integration of nanotechnology and biotechnology in DDS opens avenues for treating complex diseases like cancer, diabetes, and neurological disorders. This conference aims to explore breakthroughs and challenges in this domain, encouraging collaboration and innovation.

CONFERENCE OBJECTIVES

- To provide a platform for sharing innovative research in advanced DDS.
- To discuss the integration of nanotechnology and biotechnology in drug delivery.
- To address challenges in scalability and regulatory aspects of novel DDS.
- To highlight the role of personalized medicine in shaping future delivery systems.
- To foster industry-academia collaboration for translational research.
- To explore the potential of DDS in enhancing therapeutic efficacy for complex diseases.

CONFERENCE HIGHLIGHTS

- Keynote speeches by Pharmacy giants in drug delivery research.
- Panel discussions on emerging trends and challenges in DDS.
- Presentations on novel drug delivery technologies





॥ सरस्वती वंदना ॥

याकुन्देन्दुतुषारहारधवला,याशुभवस्त्रावृता
यावीणावरदण्डमण्डितकरा,याश्वेतपद्मासना।
याब्रह्माच्युतशंकरप्रभृतिभिर्देवैःसदावन्दिता
सामांपातुसरस्वतीभगवती,निःशेषजाड्यापहा॥



PHARMACIST'S OATH

- I swear by the Code Ethics of Pharmacy Council of India in relation to the community and shall act as integral part of health care team.
- I shall uphold the laws and standards governing my profession.
- I shall strive to perfect and enlarge my knowledge to contribute to the advancement of pharmacy and public health.
- I shall follow the system, which I consider best for pharmaceutical care and counseling of patient.
- I shall hold endeavour to discover and manufacture drugs of quality to alleviate sufferings of humanity.
- I shall hold in confidence the knowledge gained about the patients in connection with my professional practice and never divulge unless completed to do so by the law.
- I shall associate with organizations having their objectives for betterment of Profession of Pharmacy and make contribution to carry out the work of those organization.
- While I continue to keep this oath unviolated, may it be granted to me to enjoy life and practice pf pharmacy respected by all, at all times!
- Should I trespass and violate this oath, may the reverse by my lot!



ETHICS OF PHARMACY

**The profession of pharmacy
is noble in it's ideals
and pious in character. In handling, selling,
distributing compounding and dispensing
medical substances including poisons
and potent drugs,
A pharmacist is in collaboration with
medical men and others,
charged with the onerous responsibility
of safeguarding the health of people,
as such as he upholds the interests of his patrons
above all things.
"Even if your life be in danger you
should not betray or neglect the interest of
patients." should be fondly cherished by all
pharmacists.**

Our Inspiration

Founder



On behalf of the GCRG Group of Institutions, it gives me immense pride and pleasure to acknowledge the resounding success of the “International Conference on Recent Advances in Drug Delivery Systems.” This remarkable event has not only brought together brilliant minds from across the globe but also fostered meaningful discussions, collaborations, and innovations in this crucial field.

The conference’s success is a testament to the tireless efforts of the organizing committee, the invaluable contributions of our distinguished speakers, and the enthusiastic participation of all attendees. Your shared dedication to advancing the frontiers of drug delivery systems inspires us to continue supporting such academic endeavors.

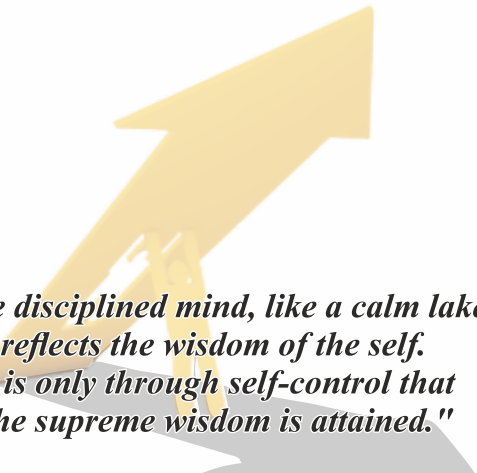
I extend my heartfelt gratitude to our patrons, faculty, students, and supporting staff for their unwavering commitment to excellence. Special thanks are due to our principal, convenor, and organizing secretary for their exemplary leadership and coordination in making this conference a grand success.

Let this conference mark the beginning of new opportunities and groundbreaking research.

Together, let us continue to innovate and inspire, ensuring that the field of drug delivery systems positively impacts healthcare globally. I look forward to welcoming you all to future endeavors of the GCRG Group.

With gratitude and best wishes.....

Mr. Omkar Yadav
Managing Director
G.C.R.G. Group of Institutions



*"The disciplined mind, like a calm lake,
reflects the wisdom of the self.
It is only through self-control that
the supreme wisdom is attained."*

Chairman's Message



It is with great pride and joy that I address you following the successful conclusion of the “International Conference on Recent Advances in Drug Delivery Systems.” This event has been a shining example of global collaboration and academic excellence, bringing together esteemed researchers, scholars, and practitioners under one roof.

The conference highlighted the latest innovations and challenges in drug delivery systems, paving the way for groundbreaking advancements that will revolutionize healthcare. Such achievements would not have been possible without the collective efforts of our dedicated organizing team, distinguished speakers, and enthusiastic participants.

I extend my deepest gratitude to the principal, convenor, organizing secretary, and all committee members whose dedication and meticulous planning ensured the seamless execution of this event. My sincere thanks also go out to the faculty, students, and staff whose support contributed immensely to this success.

As chairman of this esteemed institution, I am committed to fostering an environment of innovation and excellence. I am confident that the insights gained and networks established during this conference will continue to benefit the academic and professional community for years to come.

Thank you once again for your participation and contributions. We look forward to hosting many more such enriching events in the future.

Warm regards,

Dr. Abhishek Yadav

Chairman

G.C.R.G. Group of Institutions

E-mail : chairman@gcrg.in



*"You are what your deep, driving desire is.
As your desire is, so is your will.
As your will is, so is your deed.
As your deed is, so is your destiny"
~ Brihadaranyaka Upanishad ~*

Director General's Message



The successful completion of the “International Conference on Recent Advances in Drug Delivery Systems” is a moment of great pride for the GCRG Group of Institutions. This milestone underscores our commitment to academic excellence and our vision of fostering innovation in the healthcare sector.

The conference provided a unique platform for thought leaders, researchers, and students to exchange ideas and share insights on the latest advancements in drug delivery. The high-caliber discussions and presentations were a true testament to the dedication of the global scientific community.

I extend my heartfelt thanks to the organizing team, particularly our principal, convenor, and organizing secretary, for their exceptional leadership. Their tireless efforts, combined with the support of our faculty and staff, have made this conference a resounding success.



To our esteemed speakers and participants, thank you for enriching this conference with your expertise and enthusiasm. Your contributions have been invaluable in making this event both inspiring and impactful.

As we celebrate this achievement, let us continue to work collaboratively towards new innovations that will shape the future of drug delivery systems. I look forward to seeing the fruits of the discussions and collaborations fostered during this conference.

With gratitude....

Prof. A.N. Singh
Director General,
G.C.R.G. Group of Institutions, Lucknow.
Email Id: director@gcrg.in



**“Leadership is a privilege to better the lives
Of others. It is not an opportunity
to satisfy personal greed.”**

~Miwai Kibaki

Deputy Director

Message



It is a matter of immense pride to reflect on the successful organization of the “International Conference on Recent Advances in Drug Delivery Systems.” This conference has been a hallmark event, bringing together a diverse array of intellectuals, researchers, and industry leaders to explore the latest trends and innovations in drug delivery.

The success of this conference would not have been possible without the relentless efforts of our organizing team. My deepest gratitude goes out to our principal, convenor, organizing secretary, faculty, and students who worked tirelessly to ensure the smooth execution of this event. Your passion and dedication have truly paid off.



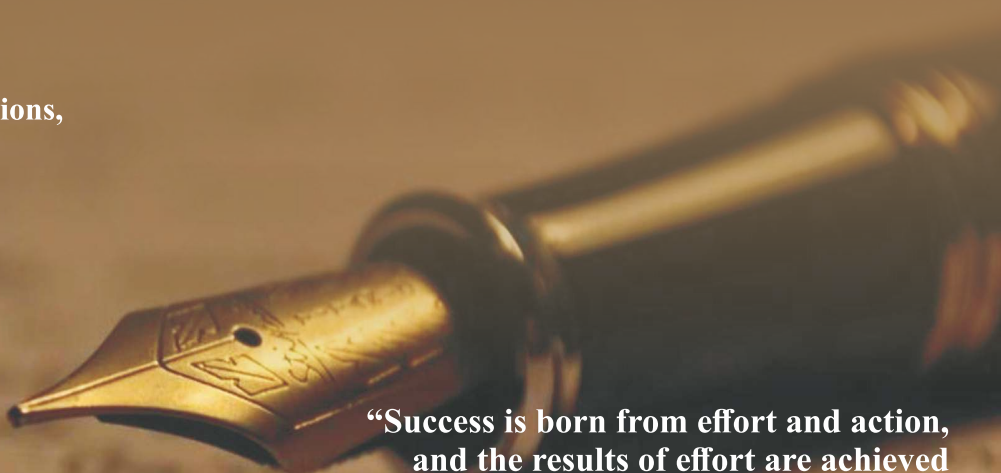
I also wish to thank the esteemed speakers and participants who contributed their valuable time and insights. Your expertise and engagement have enriched the conference and inspired all of us to push the boundaries of scientific exploration.

Let this conference serve as a catalyst for continued research and collaboration in drug delivery systems. I am confident that the knowledge shared here will pave the way for significant advancements in this critical field, ultimately benefiting humanity.

Thank you all for being a part of this successful journey. We look forward to many more such milestones in the future.

Warm regards.....

Dr. Abhishek Kumar
Deputy Director
G.C.R.G. Group of Institutions,
Lucknow.



**“Success is born from effort and action,
and the results of effort are achieved
through diligence.”**

Principal's Message

As the principal and convenor of the “International Conference on Recent Advances in Drug Delivery Systems,” I am overwhelmed with gratitude and pride as we celebrate the successful conclusion of this monumental event.

This conference was envisioned as a platform for knowledge exchange and collaboration, and I am delighted to see that it has exceeded our expectations in every way. From insightful keynote speeches to dynamic panel discussions and innovative research presentations, the event has been a true celebration of academic and scientific excellence.

I express my gratitude to our chairpersons, **Managing Director- Mr. Omkar Yadav; Chairman Dr. Abhishek Yadav; Director General- Prof. A.N. Singh and Dy. Director- Dr. Abhishek Kumar**, who provided with all possible help and guidance.



Also, special mention to organizing committee members, and all faculty, staff, and students for their unwavering support and hard work. A special thanks to our distinguished speakers and participants who made this event a grand success through their valuable contributions and active engagement.

This success is not the end but a new beginning. I am confident that the ideas shared and the connections formed during this conference will inspire further research and innovation in drug delivery systems. Let us continue to work together to achieve greater heights in our academic and professional endeavors. Thank you all for your support and participation. I look forward to welcoming you to many more such events in the future.

With warm regards and best wishes.....

Thank you!

Prof. (Dr.) Dinesh Chandra
Director/Principal,
GCRG College of Pharmacy, Lucknow
Email Id: pharmacy@gcrg.in



*“Education is the foundation of progress,
and a visionary principal builds that
foundation with integrity and wisdom”*

Profile of Speakers

Dr. Neeraj Kumar Sethiya

Associate Professor and Former Head CIIMES

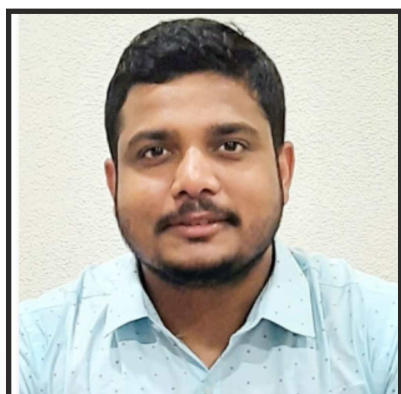
Faculty of Pharmacy, DIT University, Dehradun, India

Dr. Neeraj Kumar Sethiya is one of the **Top 2% of the World Scientist List** published by **Stanford University and Elsevier**. His core area of research is Natural Products, Herbal Drug Technology, Herbal Formulation Development, Plant biotechnology, Phytochemistry and Phytoanalysis, Network and Molecular Pharmacology, Metabolomics, Veterinary Nutraceuticals, Ethnopharmacology, Medicinal Plants, and Ayurveda. Along



with his research he also mentored for Innovation strategies and Entrepreneurship in Startup Uttarakhand, AIM, IIT, IIM, and Startup India. Ethnopharmacology, Medicinal Plants, and Ayurveda. Along with his research he also mentored for Innovation strategies and Entrepreneurship in Startup Uttarakhand, **AIM, IIT, IIM, and Startup India**.

He is having rich **experiences of more than 14 years in Academia & Innovative Research**, additionally experienced professional for building an ecosystem towards innovation, startups and entrepreneurship development at organization level. Actively involved in Industry Academia collaborative Projects and IPR based Technology Commercialization or transfer. In brief having profound experience for documentation of various recognition process such as **PCI, IIC, NAAC, NBA, NIRF and ARIIA**.



Dr. Sabya Sachi Das **(Postdoctoral Fellow)**

**Department of Chemistry, University of North Carolina at Charlotte,
Charlotte, North Carolina-28223, USA**

Dr. Sabya Sachi Das is currently working as Postdoctoral Fellow in the Department of Chemistry, The university of North Carolina at Charlotte, Charlotte, North Carolina, USA. He continued his academic roles as an Assistant Professor in the School of Pharmaceutical and Population Health Informatics, DIT University, Uttarakhand, India, after completing his Ph.D. from BIT-Mesra, Jharkhand, India.

He was named in the list for most influential researchers reported by Stanford University's World's Top 2% scientists, for consecutive years 2023 & 2024. He is also an associate member of American Chemical Society (Mem. Id: 33160574). He has received several national and international awards, few including "Excellence in Research" award for quality academic research, "Best Paper" award for cancer research, IIT-Madras, 'Young Researcher' award and others. He has published scientific articles (>45) in various peer-reviewed international journals and published book chapters (>25) with an H-index of 21 (Google Scholar). He has 04 patents to his name and 02 edited/authored books.

OUR CO-CONVENORS



Mr. Prasar Kumar
Assistant Professor



Mrs. Arti Prajapati
Associate Professor



Ms. Ruchita Chaudhary
Associate Professor



Ms. Priya Mishra
Associate Professor



Mrs. Ekta Khare
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Mr. Aman Kumar
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Mr. Avinash Yadav
Assistant Professor



Mr. Ashutosh Kumar
Assistant Professor



Ms. Ekta Madhu Jaiswal
Lecturer



Mr. Raghavendra Dixit
Lecturer

**ICDDS 2K25, INTERNATIONAL CONFERENCE, ORGANIZED
BY GCRG GROUP OF INSTITUTIONS, COLLEGE OF
PHARMACY, LUCKNOW ON 22 FEBRUARY 2025.**

ABOUT TO THE COLLEGE OF PHARMACY



The G.C.R.G. College of Pharmacy was established in 2017 by **Dr. Abhishek Yadav, Chairman of G.C.R.G. Group of institutions** which is one of the largest educational groups in Lucknow, Uttar Pradesh established in 2008.

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THEME OF THE CONFERENCE

“RECENT ADVANCES IN DRUG DELIVERY SYSTEM” (ICDDS-2025).

The landscape of healthcare and medicine is rapidly evolving, and at the forefront of this transformation is the groundbreaking field of drug delivery systems (DDS). **The International Conference on Drug Delivery Systems (ICDDS-2025)** is dedicated to showcasing the latest advancements and innovations in this crucial area of pharmaceutical science. As we step into a new era of precision medicine, advanced drug delivery techniques are key to enhancing the effectiveness, safety, and convenience of treatments across a wide range of diseases and conditions.

The theme of ICDDS-2025, “**Recent Advances in Drug Delivery Systems,**” will focus on the cutting-edge research and emerging technologies that are revolutionizing how we administer therapeutic agents. This conference will highlight novel drug delivery platforms, from nanotechnology - based systems to biologics, addressing how these innovations are optimizing therapeutic outcomes, reducing side effects, and offering targeted, controlled, and sustained release of drugs.

ICDDS-2025 will bring together a distinguished group of researchers, industry experts, and thought leaders from across the globe to exchange ideas, collaborate on groundbreaking projects, and explore the future potential of drug delivery. Participants will gain valuable insights into how recent technological advancements are transforming drug delivery, contributing to the development of safer, more effective treatments, and improving the quality of life for patients worldwide



PROGRAM AT A GLANCE

TIMING	EVENT
11:00 am – 11:20 am	Lamp Lightening
11:20 am – 11:30 am	Saraswati Vandana
11:30 am – 11:40 am	Welcome Of Dignitaries
11:40 am – 12:00 pm	Inaugural Session And Welcome Note
12:00 am – 01:00 pm	Scientific Session-1 (Speaker 1)
01:00 pm – 02:00 pm	Lunch Break
02:00 pm – 02:30 pm	Review Of Poster Presentations
02:30 pm – 03:30 pm	Scientific Session-2 (Speaker 2)
03:30 pm – 04:00 pm	Prize Distribution
04:00 pm – 04:30 pm	Concluding Note & Vote Of Thanks



Glimpses



Glimpses



"THE PULSE
OF
INNOVATION:
A JOURNEY
THROUGH
ABSTRACTS"

ABSTRACT-1

Formulation and Evaluation of Herbal Nanosponge Topical Gel for the Management of Xanthelasma

Dr. Dinesh Chandra, Director; GCRG College of Pharmacy, Lucknow.

Email: dcmpharm@gmail.com

Xanthelasma, a lipid cutaneous disorder, presents a significant concern with limited non-invasive treatment options. This study aims to develop and evaluate a novel herbal nanosponge-based topical gel for the effective management of Xanthelasma, leveraging the bioactive potential of garlic cloves (*Allium sativum*), onions (*Allium cepa*), banana peels (*Musa paradisiaca*), and fenugreek seeds (*Trigonella foenum-graecum*). These natural ingredients are well-documented for their lipid-lowering, antioxidant, and anti-inflammatory properties, making them promising candidates for Xanthelasma treatment. Nanosponge carriers were synthesized using a polymeric cross-linking technique to enhance the solubility, stability, and controlled release of herbal bioactive. The formulated nanosponge were incorporated into a topical gel and subjected to physicochemical characterization, including pH, spreadability, viscosity, and drug release studies. Ex vivo permeation studies were conducted to assess skin penetration efficiency. The gel was further evaluated for its therapeutic potential through in vitro anti-lipidemic and antioxidant assays. Preliminary findings indicate that the developed nanosponge gel exhibits optimal physicochemical properties, sustained drug release, and enhanced skin permeability. The bioactive herbal components synergistically contribute to reducing lipid accumulation in Xanthelasma plaques. Thus, this innovative herbal nanosponge-based gel offers a promising, non-invasive alternative for Xanthelasma management with improved efficacy and patient compliance. Further in vivo studies are warranted to validate its clinical potential.

Keywords: Xanthelasma, Herbal nanosponge, Topical gel, Garlic, Onion, Banana peel, Fenugreek, Lipid-lowering, Antioxidant, Drug delivery.

ABSTRACT-2

Recent techniques for effective extraction of herbals

Arti Prajapati, Associate Professor; GCRG College of Pharmacy, Lucknow.

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The culinary and health industries make extensive use of herbs. Due to the numerous negative consequences of synthetic chemical products, people are now more interested in herbal treatments, which has raised demand for them. Herbal remedies often involve the use of dried or fresh plant material. This study examines the most recent advancements in herbal extraction and processing techniques from 1991 to 2015. Maceration, infusion, percolation, digestion, decoction, hot continuous extraction, aqueous-alcoholic extraction through fermentation, counter-current extraction, microwave-assisted extraction, ultrasound extraction (sonication), supercritical fluid extraction, enzyme-assisted extraction and photonic extraction are some of the common methods used to extract medicinal plants. These extraction methods cover the more resilient, contemporary, and environmentally friendly methods as well as the traditional solvent-based methods. In recent years, Supercritical Fluid Extraction (SFE) has become a popular substitute for traditional solvent extraction in a variety of industrial and analytical procedures involving the separation of organic molecules. Additionally, SFE can be used to remove pesticides from herbal remedies. The procedure known as microwave assisted extraction (MAE) extracts the active components from herbs using a liquid solvent, like water or alcohol. Changes in the vegetable cell structure brought on by electromagnetic waves in MAE result in improved extraction. However, in traditional extractions, the heat transfer takes place from the outside (heat source) to the inside (herbal particle), whereas the mass transfer of the phytochemicals takes place from the inside (herbal particle) to the outside (solvent). Sonication extraction Effective instrument for extensive business uses shorter workdays and easier to manage high-quality extract, lower solvent usage, and increased yield. short extraction time with ultra-high pressure. Quick extraction of solvents Possible substitute method for SFE in the extraction of polar compounds Cut down on extraction time and solvent consumption.

Keywords: Recent Techniques Extraction, Supercritical Fluid Extraction, microwave assisted extraction.

ABSTRACT-3

Recent Advances in Transdermal Drug Delivery Systems

Ruchita Chaudhary, Associate Professor; GCRG College of Pharmacy, Lucknow.
Email: chaudharyruchita14@gmail.com

Recent drug delivery systems (DDS) use advanced technology to target specific areas of the body, making treatments more effective and reducing side effects. These new DDS are much better than older systems because they are more accurate, automated, and efficient. They are made from tiny materials or small devices that are safe for the body, break down naturally, and stay active longer in the bloodstream. One example is Transdermal Drug Delivery Systems (TDDS), which deliver medicine slowly through the skin and also Transdermal Drug Delivery Systems (TDDs) provide controlled and prolonged drug release, enhance patient compliance, reduce gastrointestinal side effects, and improve drug stability. This method helps patients stick to their treatment, reduces side effects like stomach issues, and keeps the medicine stable. By bypassing the liver, TDDS avoid the breakdown of the drug, allowing more medicine to reach the bloodstream. TDDS also avoid painful injections, making it easier for patients to use them throughout the day without discomfort. New technology, such as microneedles that can adjust their depth and nanoparticles that target specific areas, has made TDDS even more effective. Beyond treating pain, TDDS are being developed to help manage long-term conditions like diabetes and high blood pressure. This makes them a promising option for improving healthcare and patient outcomes.

Keywords: Drug Delivery System, Advanced Technology, Nanomaterials, Biocompatible, Biodegradable.

ABSTRACT-4

Inhalable Nanocarriers for Targeted Lung Disease Treatment: A Novel Approach to Precision Pulmonary Drug Delivery

Prasar Kumar, Assistant Professor; GCRG College of Pharmacy Lucknow
Email: prasar.11@gmail.com

Lung diseases, including chronic obstructive pulmonary disease (COPD), asthma, pulmonary infections, and lung cancer, present significant global health challenges. Conventional pulmonary drug delivery methods, such as nebulizers and metered-dose inhalers, suffer from poor bioavailability, rapid clearance, and limited drug retention. The emergence of inhalable nanocarriers offers a groundbreaking approach to overcoming these limitations by enabling precise, localized, and sustained drug delivery to the lungs.

This study explores the development of nanoparticle-based inhalable formulations, including liposomes, polymeric nanoparticles, lipid-based nanocarriers, and metal-organic frameworks (MOFs), designed to enhance pulmonary drug absorption and reduce systemic side effects. Advanced surface modifications, such as mucoadhesive coatings, ligand-functionalized nanoparticles, and stimuli-responsive carriers, have been incorporated to improve lung targeting, enhance cellular uptake, and facilitate site-specific drug release in diseased tissues.

A key innovation discussed in this work is the use of dry powder nanocarriers, engineered with optimized aerodynamic properties to achieve deep lung deposition. Additionally, biodegradable polymeric nanocarriers loaded with anti-inflammatory, antimicrobial, and anticancer agents are evaluated for their potential in treating chronic and infectious pulmonary diseases.

Furthermore, we highlight the role of artificial intelligence (AI)-assisted nanocarrier design, enabling predictive modeling of aerosol behavior and targeted drug distribution. The integration of inhalable nanomedicine with smart biosensing devices is also proposed for realtime monitoring and controlled drug release in lung disease therapy.

This research underscores the transformative potential of inhalable nanocarriers as a next generation precision medicine approach for lung disease treatment, offering enhanced therapeutic efficacy, patient compliance, and reduced systemic toxicity.

Keywords: Inhalable Nanocarriers, Pulmonary Drug Delivery, Lung Diseases, Nanomedicine, Targeted Therapy.

ABSTRACT-5

Recent Advances in Transdermal Drug Delivery Systems

Priyanka Singh Patel, Assistant Professor; GCRG College of Pharmacy, Lucknow.

Email: priyankasingh34952@gmail.com

Fungal infections, ranging from superficial to systemic conditions, pose significant health challenges due to drug resistance and limited efficacy of conventional therapies. Terbinafine, a potent antifungal agent, demonstrates high efficacy against dermatophytes but suffers from low aqueous solubility and limited penetration into fungal-infected tissues. This study focuses on the formulation and evaluation of a dendrimer-based Terbinafine-loaded nanoemulgel aimed at enhancing drug delivery, bioavailability, and antifungal efficacy. The nanoemulgel was developed using poly(amidoamine) (PAMAM) dendrimers as a delivery platform to improve solubility and facilitate controlled release of Terbinafine. The dendrimers were incorporated into an oil-in-water nanoemulsion stabilized by biocompatible surfactants, followed by gelation using a carbopol-based matrix to achieve optimal viscosity for topical application. The formulation was characterized for particle size, polydispersity index (PDI), zeta potential, drug encapsulation efficiency, and in vitro release behavior. Physicochemical analysis revealed a uniform particle size distribution (below 200 nm), high encapsulation efficiency, and sustained release over 24 hours. Ex vivo skin permeation studies demonstrated superior penetration and retention of Terbinafine in the epidermis and dermis compared to conventional formulations. Antifungal efficacy was assessed against *Candida albicans* and *Trichophyton rubrum*, with the nanoemulgel showing enhanced zone of inhibition and reduced minimum inhibitory concentration (MIC). Stability studies confirmed the formulation's robustness under various storage conditions. The results suggest that the dendrimer-based nanoemulgel provides an innovative and efficient platform for Terbinafine delivery, addressing current limitations of antifungal therapy. This novel approach holds potential for the treatment of resistant fungal infections, ensuring better therapeutic outcomes and patient compliance.

Keywords: Terbinafine, Dendrimer, Nanoemulgel, Antifungal infections, Drug delivery, Controlled release.

ABSTRACT-6

Formulation strategies and clinical applications of nanosponge-loaded gels for topical drug delivery

Mukesh Kumar Shukla, Research Scholar; Dr K N Modi University, Rajasthan.

Email: mukeshshukla6122@gmail.com

Nanosponge-based gels represent a cutting-edge approach to drug delivery, providing improved drug stability, precise targeting, and enhanced therapeutic efficacy for topical use. This review offers an in-depth exploration of the formulation strategies, underlying mechanisms, and clinical prospects of nanosponge-loaded gels for optimized topical drug delivery. To investigate the development, formulation, and therapeutic applications of nanosponge-loaded gels, highlighting their advantages over traditional topical delivery systems, while identifying the challenges and exploring future opportunities in this evolving field. This review compiles findings from recent research articles, patents, and clinical studies to assess the formulation principles of nanosponge-based gels. It delves into critical aspects such as nanosponge synthesis, incorporation into gel matrices, drug loading techniques, release dynamics, and skin permeation properties. Nanosponge-loaded gels demonstrate significant advantages in enhancing drug solubility, controlled release, and site-specific delivery for treating dermatological conditions. Studies reveal promising applications in managing skin disorders such as psoriasis, acne, and fungal infections, with reduced systemic side effects. Advances in polymer selection, particle size optimization, and biocompatibility have further improved the clinical potential of these systems. Nanosponge-loaded gels offer a promising platform for topical drug delivery by integrating the advantages of nanotechnology with gel-based formulations. Although preclinical studies have shown promising results, challenges such as large-scale production, regulatory compliance, and long-term safety must be overcome to enable their widespread clinical use.

Keywords: Nanosponge, gel formulations, topical drug delivery, controlled release, dermatological applications, clinical potential.

ABSTRACT-7

A comprehensive Review of Health benefits and Research development of jyotishmati plants

Rajeev Kumar, Research Scholar; Mangalayatan University, Aligarh.

Email: rajukumarshri 1111@gmail.com

This review delves into its diverse pharmacological properties, traditional uses, and advance mints in scientific research. Jyotishmati is renowned for its neuron-protective, Cognitive-enhancing, anti-inflammatory, antioxidant, and anti-diabetic properties. The plant's active constituents, such as celastrene, paniculatin, and sesquiterpene alkaloids, contribute to its therapeutic efficacy. Modern research high lights its role in managing neurological disorders like Alzheimer's disease, anxiety, and depression. Additionally, studies have revealed its potential in Cardiovascular health, wound healing, and hepatoprotection. The review also addresses challenges in its commercial cultivation, sustainable sourcing, and standardization of extracts for pharmaceutical applications. Emerging studies on its mechanisms of action and synergistic effects with other herbal medicines underscore its significance in drug development. This comprehensive analysis aims to bridge traditional knowledge with contemporary research, offering insights in to the plant's future in integrative medicine.

Keywords: Jyotishmati plants, active constituents, neuron-protective, Cognitive-enhancing, anti-inflammatory, antioxidant, and anti-diabetic properties.

ABSTRACT-8

Recent Progress in Nanosponge for Drug Delivery and Cancer Treatment

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Nanosponge with three-dimensional (3D) porous structures, narrow size distribution, and high entrapment efficiency are widely designed for cancer therapy and drug delivery. These nanosponges protect molecular agents from degradation, enhance the solubility of lipophilic drugs, and offer targeted delivery options. Additionally, their magnetization imparts magnetic properties suitable for various therapeutic uses. Nanosponge-based delivery systems are especially effective in cancer therapy due to their high specificity, biocompatibility, biodegradability, and sustained release capabilities. In this regard, the degree of crystallization plays a key role in determining the drug-loading capacity of nanosponges. Moreover, 3D printing technologies hold great potential for the creation of innovative nanosponge-based systems for biomedical applications. Factors such as polymers, cross-linkers, drug types, temperature, drug loading mechanisms, fabrication techniques, and the degree of substitution should all be thoroughly analyzed. Furthermore, eco-friendly manufacturing methods for nanosponges remain an area of exploration, in addition to existing approaches like solvent-based techniques, ultrasound-assisted preparation, melting methods, and emulsion solvent diffusion. This review highlights recent advancements in the drug delivery and cancer therapy potential of nanosponges—especially cyclodextrin-based, DNAzyme, and ethylcellulose nanosponges—while addressing key challenges and offering future perspectives.

Keywords: nanosponges; cyclodextrin-based nanosponges; DNAzyme nanosponges; ethylcellulose nanosponges; drug delivery; cancer therapy.

ABSTRACT-9

Investigating the Science, Advantages, and Future Prospects of Stevia Leaf to Stevia Sweetener

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This study evaluated the antioxidant capacity of the ethanolic extract, isolated stevioside, and (07) derivative that was semi-synthesized from *Stevia rebaudiana*. Following the extraction of an ethanolic extract from *Stevia rebaudiana* using a Soxhlet apparatus, a new molecular derivative was semi-synthesized and a critical flavonoid glycoside (Steviosides, Glycoside Low caloric Value) was identified. The antioxidant activity was evaluated using the 1,1-diphenyl-2-picryl hydroxyls (DPPH) free radical scavenging activity methods. To determine the antioxidant potential, the IC₅₀ value was utilized. The isolated semi-synthesis of a new chemical Aa had higher biological activity, and the semi-synthesized derivative (LU 07) exhibited considerable antioxidant activity in compared to earlier derivatives.

Keywords: The steviol sugars, the high-performance liquid HPTLC, and stevioside.



ABSTRACT-10

Assessment of Anti-acne Activity of Nerium oleander Leaves Extract and Development of its Bioactive Compound Loaded Self-Nanoemulsifying Drug Delivery System

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Assessment of anti-acne activity of *Nerium oleander* leaves extract and development of its bioactive compound loaded-self-nanoemulsifying drug delivery system. The aim of this study was to assess the anti-acne activity of *Nerium oleander* leaves extract and to develop a self-nanoemulsifying drug delivery system loaded with its bioactive compounds for the improve drug permeation. The extract of plant was used to evaluate antioxidant and anti-acne activities through in-vitro assays. Isolated the potential Ursolic acid (UAA) bioactive compound then after isolation Ursolic acid, the principal bioactive compound, was employed in the development of a self-nanoemulsifying drug delivery system. Through the antioxidant activity of plant extract the IC₅₀ value was found to be 896.9µg/ml, comparable to an IC₅₀ of 10.93µg/ml for Ascorbic acid. Furthermore, the extract demonstrated an IC₅₀ of 10.58 ± 0.0252µg/ml against bacteria (*P. acnes*– MTCC 1951), indicating its therapeutic potential against acne. The optimized bioactive compound-loaded self-nanoemulsifying formulation demonstrated excellent properties, meeting all evaluation parameters including zeta potential, polydispersity index, drug permeation, and physicochemical stability. The hydroalcoholic extract of *Nerium oleander* leaves has promising anti-acne activity and its bioactive compound loaded-self-nanoemulsifying formulation shows improved permeation.

Keywords: Skin cancer, hydroalcoholic extract, HaCaT skin cancer cell line, *N. oleander*, anti-acne activity, nanoemulsifying drug delivery.

ABSTRACT-11

Recent Advances in Drug Delivery Systems

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Recent developments in drug delivery systems (DDS) have led to improved treatments, focusing on making them more effective, safer, and easier for patients to use. The International Conference on Drug Delivery Systems (ICDDS-2025) highlights these exciting changes. One major area of progress is nanotechnology, which uses tiny particles like liposome and micelles to deliver drugs more directly to the target area, especially in cancer treatments, reducing side effects. Smart nanoparticles that can respond to changes in the environment (like pH or temperature) are being used to control when and where drugs are released. New materials like biodegradable polymers and hydrogels are making it possible to create long-lasting injectable drugs, which means fewer doses and better patient compliance. Gene delivery systems, such as mRNA-based treatments and gene editing tools, are changing how we approach precision medicine, offering more targeted therapies. Advances in personalized drug delivery, where treatments are based on individual patient characteristics, are helping tailor therapies for better outcomes. Other innovations include microneedle arrays and transdermal systems, which provide pain-free drug delivery, as well as the use of AI and machine learning to improve DDS design. Immunotherapy delivery systems are improving cancer treatments by boosting the body's immune response while reducing harmful side effects. Finally, research into microbiome-targeted drug delivery is opening new possibilities for treating digestive and metabolic conditions. These advancements, highlighted at ICDDS-2025, promise to make drug treatments more effective, personalized, and easier for patients.

Keywords: Drug Delivery Systems, Nanotechnology, Smart Nanoparticles, Biodegradable Polymers.

ABSTRACT-12

Recent advances in Novel Drug Delivery Systems (NDDS): Review

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Recent advances in novel drug delivery systems (NDDS) have revolutionized the pharmaceutical landscape by addressing the limitations of conventional drug delivery methods. These innovations focus on improving therapeutic efficacy, reducing systemic toxicity, and enhancing patient compliance. Cutting-edge technologies such as nanocarriers, liposomes, microneedles, and hydrogels are being integrated with stimuli-responsive materials and smart drug release mechanisms to achieve precision medicine. The application of NDDS in areas like cancer therapy, gene delivery, and chronic disease management has shown significant promise. Furthermore, advancements in biodegradable polymers and personalized medicine approaches have broadened the potential of these systems. This review provides a comprehensive overview of the recent progress in NDDS, their clinical applications, and the challenges associated with scalability, regulatory approval, and cost-effectiveness. Addressing these issues through interdisciplinary efforts is critical to ensuring the widespread adoption of NDDS and their impact on global healthcare.

Keywords: Novel drug delivery systems, recent advances, Nano carriers, liposomes, microneedles, precision medicine, stimuli-responsive systems, personalized therapy.

ABSTRACT-13

Synthesis, Characterization, Molecular Docking, and Evaluation of Antimicrobial and Antioxidant Activity of Thiazole-Azetidinones derivatives

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The integration of bioactive natural and synthetic compounds offers a promising strategy for developing novel hit and lead compounds with unique molecular architectures. This study aims to design and synthesize a series of innovative hybrid structures incorporating both thiazole and azetidinone moieties, exploring their potential as therapeutic agents. The novel hybrid compounds were synthesized and characterized using advanced spectral and analytical techniques. Their biological efficacy was evaluated through in vitro antibacterial assays against *Escherichia coli* (Gram-negative) and *Staphylococcus aureus* (Gram-positive), with amoxicillin as the reference standard. The free-radical scavenging potential of the synthesized compounds was assessed using the DPPH method. Molecular docking studies were conducted on human peroxiredoxin 5 and *E. coli* DNA gyrase B using AutoDock Vina to elucidate binding interactions. The antimicrobial assays demonstrated that compound 5ab, featuring halogen atoms on the azetidinone ring and a methoxy group on the thiazole ring, exhibited the most potent activity against both bacterial strains, with MIC values ranging from 31 to 108 µg/ml. Several compounds also displayed notable antioxidant activity. Docking studies revealed favorable binding interactions, supporting their potential as bioactive agents. The findings highlight the therapeutic promise of thiazole-azetidinone hybrid derivatives as candidates for further molecular optimization and development into antimicrobial and antioxidant agents.

Keywords: Thiazole, Azetidinone, Hantzsch reaction, Antimicrobial, DPPH method.

ABSTRACT-14

Novel strategies in pharmaceutical drug delivery systems

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Recent advancements in drug delivery systems focus on enhancing therapeutic efficacy, reducing side effects, and improving patient compliance. Nanotechnology innovations, including nanoparticles, liposomes, and nanogels, enable targeted delivery and controlled release. Personalized medicine, driven by pharmacogenomics, ensures tailored treatments, while non-invasive methods like microneedle and transdermal patches enhance convenience. Materials such as biodegradable polymers and hydrogels support sustained, localized drug release, while stimuli-responsive systems activated by pH, temperature, or light offer precision. Antibody-drug conjugates (ADCs) and theranostic platforms are advancing oncology care by combining therapy and diagnostics. The integration of artificial intelligence (AI) and machine learning (ML) optimizes drug formulations and delivery designs. Progress in oral delivery systems, such as solid lipid nanoparticles (SLNs) and self-emulsifying drug delivery systems (SEDDS), addresses challenges with poorly soluble drugs. These innovations promise safer, more effective and patient-centric healthcare solutions.

Keywords: Nanotechnology, personalized medicine, biodegradable polymers, stimuli-responsive systems, ADCs, artificial intelligence, oral drug delivery.

ABSTRACT-15

Recent advances in drug delivery system

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The field of drug delivery has undergone significant advancements, driven by innovations in nanotechnology, biomaterials, and targeted delivery mechanisms, which collectively address the limitations of traditional drug administration. Contemporary drug delivery systems (DDS) are designed to enhance bioavailability, enable spatially selective targeting, and provide controlled, sustained release profiles, all of which contribute to optimizing therapeutic efficacy and minimizing systemic toxicity. Nanocarriers, including liposome, micelles, dendrimers, and polymeric nanoparticles, have shown remarkable potential in improving the solubility and pharmacokinetics of hydrophobic and unstable drugs, enabling their delivery to specific tissues or cells, thus ensuring a more precise therapeutic effect. This has been particularly impactful in the treatment of oncological diseases, neurodegenerative disorders, and cardiovascular conditions.

Moreover, the development of stimuli-responsive DDS, which can release drugs in response to external triggers such as pH, temperature, light, or specific biomolecules, represents a transformative approach in personalized medicine. These systems offer spatiotemporal drug release, ensuring that therapeutic agents are activated in the targeted area at the optimal time, thereby enhancing the precision of treatment. The incorporation of biodegradable and biocompatible materials has also facilitated the creation of safer and more effective DDS, minimized immune responses while maintained prolonged drug release. Despite these advances, challenges remain in terms of scalability, regulatory hurdles, and the variability of patient responses. Nevertheless, these emerging DDS platforms are poised to redefine treatment paradigms, particularly in cancer therapy, gene delivery, and the management of chronic diseases, offering promising solutions for more effective, patient-centric therapies.

Keywords: Drug Delivery Systems, Nanotechnology, Targeted Delivery, Stimuli-Responsive Systems, Biodegradable Materials, Gene Delivery, Controlled Release, Personalized Medicine.

ABSTRACT-16

Nanocarrier Based Topical Delivery of U.V. Protectant

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The harmful effects of ultraviolet (UV) radiation on the skin, including photo aging and skin cancer, necessitate the development of effective photo protective formulations. Nano carrier-based systems have emerged as a promising solution for delivering UV protectants due to their ability to enhance stability, bioavailability, and controlled release of active ingredients. Nano carriers, such as liposomes, Nano emulsions, solid lipid nanoparticles, and polymeric nanoparticles, improve the solubility and skin penetration of both organic and inorganic UV filters. These Nano systems offer advantages such as reducing photo degradation of UV-protectant agents, ensuring prolonged skin retention, and minimizing systemic absorption, which enhances their safety profile. Additionally, Nano carriers can encapsulate antioxidants and anti-inflammatory agents, providing synergistic protection against oxidative stress induced by UV exposure. Their customizable properties, including size, surface charge, and stimuli responsiveness, allow for targeted delivery and improved aesthetic appeal, addressing consumer demands for lightweight and non-greasy formulations. Despite their potential, challenges like cytotoxicity, regulatory hurdles, and large-scale production limitations remain barriers to their widespread application. Research continues to focus on optimizing Nano carrier design for safety and efficacy, paving the way for next-generation topical sunscreens and skincare products.

Keywords: Nano Carriers, U.V. Protectants, Topical delivery, Photo Protection, Skincare.

ABSTRACT-17

Innovative approaches in drug discovery and therapeutic development

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These are the chemical substance which are used for cure, prevent, treatment, diagnosis a disease. The Drug discovery is a dynamic field constantly evolving with the aim of identifying novel therapeutic agents to combat various diseases. In this review, we present an overview of recent advances in drug discovery, highlighting innovative approaches and targeted therapeutics that have emerged in the last few years. The review covers a range of cutting-edge techniques and strategies used in drug design and development, including artificial intelligence and machine learning-based approaches, high-throughput screening, and rational drug design. Additionally, we discuss the significant progress made in the field of targeted therapeutics, with a focus on personalized medicine and precision treatments that offer improved efficacy and reduced side effects.

Any approach applied to drug discovery and development by the medical community and pharmaceutical industry has a direct impact on the future availability of improved, novel, and curative therapies for patients with cancer. By definition, drug discovery is a complex learning process whereby research efforts are directed toward uncovering and assimilating new knowledge to create and develop a drug for the purpose of providing benefit to a defined patient population. Accordingly, a highly desirable technology or approach to drug discovery should facilitate both effective learning and the application of newly discovered observations that can be exploited for therapeutic benefit. The current trend in cardiovascular disease management has evolved significantly due to the improvement in both surgical and percutaneous revascularization techniques, which became the preferred therapeutic strategy in many clinical subgroups. To date, animal studies remain to play a vital role in validating the safety and efficacy of medical devices and biomaterials during the bench-to-clinic translation stage. However, the results obtained from these studies can be sometimes inconsistent and may fail in human studies.

Keywords: Innovative, drug, Nanotechnology, revascularization.

ABSTRACT-18

Nanoemulsion-based approaches for optimized topical antifungal therapy: innovations and insights

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Fungal infections affect around 40 million people worldwide, impacting both developed and developing countries. Among these, topical fungal infections are particularly common and can greatly reduce patients' quality of life. Traditional antifungal treatments, such as clotrimazole, ketoconazole, and amphotericin B, face challenges like poor skin absorption, short contact time, and the need for frequent application in high doses, which can lead to local and systemic side effects. Nanoemulsion present a promising alternative. These are stable mixtures of oil, surfactant, and water, with droplet sizes between 20-200 nm. They enhance drug solubility and transport to the site of infection, improve bioavailability, and allow controlled drug release. When nanoemulsion are incorporated into gels, they further enhance skin and mucosal penetration, reduce greasiness, and stabilize the formulation by lowering surface and interfacial tension. This review explores the use of nanoemulsion-based gels for delivering antifungal drugs to treat topical fungal infections. Research and patents show that these gel systems provide sustained drug release and may offer better antifungal effects against fungi like *Candida*, *Trichophyton*, and *Aspergillus* compared to conventional treatments. Overall, nanoemulsion-loaded gels have the potential to improve antifungal therapies, reduce side effects, and enhance patient quality of life.

Keyword: Nanoemulsion, Topical delivery, Fungal infections, ketoconazole, nanoemulgel, transdermal drug delivery.

ABSTRACT-19

Advanced Polymers in Pharmaceutical Chemistry: Transforming Drug Delivery Methods

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Through novel formulations and procedures, polymers have evolved into a valuable tool in pharmaceutical chemistry. This study covers important topics like biocompatibility, controlled release, and targeted distribution while providing a broad overview of drug delivery polymers and highlighting their unique contributions. In contrast to other evaluations, it covers new developments in biodegradable, intelligent, and stimuli-responsive polymers, as well as their potential to enhance therapeutic results and patient adherence to treatment.

Additionally, by providing examples from a variety of therapeutic fields, this work has improved knowledge of sophisticated polymer-based systems, including polymeric nanoparticles, bioconjugation techniques, and natural polymer-based systems. By extending the topic of safety, efficacy, and acceptance factors along with regulatory and clinical reality challenges, the review also stands on its own. It also highlights the importance of cross-national collaborations, interdisciplinary cooperation, and intersectoral cooperation in the development of polymer-based precision medicine applications. To encourage researchers and practitioners, this study offers a new perspective on the current and potential future developments of polymer-based technology and committed therapeutic accomplishments worldwide.

Keywords: Drug delivery, Polylactic acid, Polylactic-co-glycolic acid, Polyvinyl alcohol, smart polymers.

ABSTRACT-20

Novel drug delivery strategy for antidepressant active constituent from natural medicinal plants: The state of the art

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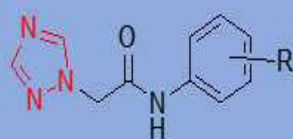
Depression is a serious mental disorder among public health issues. Mental health researchers and clinical psychiatrists have long wondered about the slowness of the speech cycle, the high rates of mood recovery, and the effectiveness of pretrial detention. These obstacle have pressure us to seek more innovative and in force treatments. Research has shown that novel drug delivery strategies for lifelike medicinal plants can effectively amend the use efficiency of the participating molecules in these plant life and therefore better their efficaciousness. Currently, with the development of treatment techniques and constant updating of new drug strategies, the new addition of new antidepressant therapies gives new importance to the approach of depression treatment to the scope of the new drug legalization system. On this basis, this study comprehensively evaluates and analyzes the research progress of novel drug delivery systems, including nanodrug delivery technology, in the intervention research strategy of neurological diseases from the perspective of natural medicines for the treatment of depression. This provides a new theoretical basis for the development and coverage of novel drug delivery strategies and drug delivery technologies in the fields of basic and clinical drug research.

Keywords: Novel Drug Delivery System. Natural medicinal plant life. Depression, Novel drug delivery carriers, Novel drug delivery.

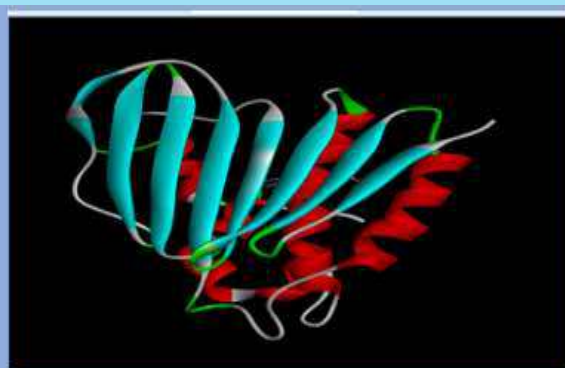
ABSTRACT-21

Synthesis, characterization, molecular docking, and antimicrobial evaluation of triazole derivatives

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N-(substituted phenyl)-2-(1H-1,2,4-triazol-1-yl)acetamide. (4A-4G)



The synthesis of novel triazolic derivatives is of significant interest due to their potential therapeutic uses. In this study, we designed seven novel triazolic derivatives through a two-step reaction process. The initial step involved the N-alkylation of 1,2,4-triazole with ethyl 2-chloroacetate in the presence of anhydrous potassium carbonate under reflux conditions, yielding ethyl 2-(1H-1,2,4-triazol-1-yl) acetate. This intermediate was subsequently subjected to amidation with various substituted anilines under reflux to afford the corresponding N-(substitutedphenyl)-2-(1H-1,2,4-triazol-1-yl) acetamides. Characterization of these compounds was carried out using ¹H-NMR, ESI-MS, and FT-IR. The ¹H-NMR spectra confirmed the presence of the expected chemical shifts, correlating with the aromatic protons and triazole moiety. ESI-MS provided molecular ion peaks consistent with the proposed molecular weights of the derivatives, while FT-IR spectra showed characteristic absorption bands corresponding to amide and ester functionalities, and the triazole ring. The interactions of the synthesized derivatives to DNA Gyrase B subunit from Escherichia coli (PDB ID: 1KZN) were evaluated by Molecular docking to assess the antimicrobial potential of these derivatives. Compounds 4D, 4E, and 4G exhibited the highest binding affinities with docking scores of -6.9, -6.2, and -6.4 kcal/mol, respectively. These results suggest strong interactions between these derivatives and the protein's active site. Furthermore, the antimicrobial activity of the synthesized compounds assessed by ZOI assay. Compounds 4D, 4E, and 4G demonstrated significant antimicrobial activity, correlating well with their docking scores showcasing ZOI diameters as 14 mm, 16 mm and 18 mm respectively.

Keywords: Triazoles, Antimicrobial, Molecular docking, Characterization, ZOI.

ABSTRACT-22

Chemotherapy drug delivery system

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Chemotherapy drug delivery systems are designed to enhance treatment effectiveness while reducing adverse side effects. Traditional chemotherapy often results in systemic toxicity due to the widespread distribution of drugs, affecting both cancerous and healthy cells. These advanced delivery systems focus on specifically targeting cancer cells, ensuring higher concentrations of the therapeutic agent reach the tumor while minimizing harm to normal tissues. Ongoing research is exploring various innovative approaches, with many showing great promise. By improving precision and reducing toxicity, these systems have the potential to transform cancer treatment, offering patients safer and more effective therapies.

This can be achieved through various approaches, including:

Nanoparticle-based delivery: Nanoparticles can be designed to encapsulate or attach to chemotherapeutic drugs, enabling targeted delivery to tumors. They can accumulate in tumor tissues by leveraging the enhanced permeability and retention (EPR) effect, which takes advantage of the leaky blood vessels and inefficient lymphatic drainage characteristic of tumors.

Antibody-drug conjugates: These systems pair a chemotherapeutic drug with a tumor-specific antibody, allowing for precise delivery to cancer cells that express the targeted antigen.

Liposomal delivery: Liposomes are spherical lipid-based vesicles capable of encapsulating chemotherapeutic drugs. They can be engineered to improve targeting efficiency and extend drug circulation time.

Polymer-based delivery: Biodegradable nanoparticles can be engineered using polymers to encapsulate chemotherapeutic drugs and release them in a controlled manner.

Keywords: Nanoparticle, Antibody-drug conjugates, Liposomal delivery, Polymer-based delivery, Biocompatibility.

ABSTRACT-23

Controlled release in drug delivery system

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Advancements in novel drug delivery systems, particularly controlled release technologies, are significantly improving therapeutic efficacy, minimizing side effects, and enhancing patient compliance. Controlled release mechanisms ensure the precise and sustained release of drugs, reducing dosing frequency and fluctuations in drug levels. Various innovative formulations, including polymeric nanoparticles, hydrogels, liposomes, and microneedles, enable targeted and site-specific drug delivery, optimizing treatment outcomes. Examples of these technologies include osmotic pumps, such as OROS® systems, which provide extended drug release for conditions like ADHD and diabetes, and biodegradable implants like Zoladex®, used for hormone therapy in cancer treatment. Additionally, pH-sensitive nanoparticles and stimuli-responsive carriers enable targeted drug release in conditions such as cancer and inflammatory diseases, minimizing systemic toxicity. Novel drug delivery systems incorporating nanotechnology and biomaterials further enhance precision by responding to physiological triggers such as pH, temperature, or enzyme activity. These advancements contribute to the development of personalized medicine, where treatments can be tailored to individual patient needs. As drug delivery technologies continue to evolve, they offer significant potential for improving healthcare outcomes, reducing medication non-adherence, and ensuring more effective and patient-friendly treatment regimens. Impact on Healthcare: Improves patient adherence, enhances treatment effectiveness, and supports the advancement of personalized medicine.

Keywords: Drug Delivery Systems, Nanotechnology, Nanoparticles, controlled release.

ABSTRACT-24

Recent advances in drug delivery system

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Recent advancements in drug delivery systems (DDS) have revolutionized therapeutic approaches by enhancing drug efficacy, improving patient compliance, and minimizing adverse effects. These systems are designed to optimize the targeted delivery of drugs to specific tissues or cells, thereby maximizing therapeutic outcomes while reducing systemic toxicity. Key innovations in DDS include:

Nanotechnology-Based Systems: Use of nanoparticles, liposomes, and micelles for controlled and targeted drug delivery. For example, Doxil® (liposomal doxorubicin) is used for treating ovarian and breast cancer.

Stimuli-Responsive DDS: Smart systems activated by pH, temperature, enzymes, or light for site-specific and controlled release. An example includes ONIVYDE®, a liposomal irinotecan for pancreatic cancer that ensures drug release in the tumor microenvironment.

Emerging technologies like microfluidics, bioresponsive hydrogels, and AI-driven DDS optimization are enabling personalized medicine by facilitating real-time monitoring and targeted delivery for diseases such as cancer, neurodegenerative disorders, and infectious diseases. The integration of gene-editing technologies (e.g., CRISPR-Cas9 loaded nanoparticles) with DDS and advancements in vaccine delivery have further broadened the scope of these systems. This revolution in DDS is addressing critical challenges such as drug resistance, poor bioavailability, and patient adherence while paving the way for safer, more effective, and personalized therapeutic strategies.

Keywords: Drug Delivery Systems, Nanotechnology, Liposomes, Stimuli-Responsive DDS, Polymeric Carriers.

ABSTRACT-25

A Review on Traditional and Herbal Remedies for Managing Stress and Anxiety

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Stress and anxiety are common problems in today's world, leading many people to use medications. However, for centuries, traditional and herbal remedies have been used to manage these conditions naturally. This review discusses how various herbs and traditional healing methods help in reducing stress and anxiety. Some well-known herbs, like Ashwagandha (*Withania somnifera*), Brahmi (*Bacopamonnier*), Valerian root (*Valeriana officinalis*), Passionflower (*Passifloraincarnata*), and Rhodiola (*Rhodiolarosea*), have calming and stress-reducing effects. These herbs work by balancing stress hormones, improving brain chemicals, and supporting the nervous system. Traditional practices such as Ayurveda, Traditional Chinese Medicine (TCM), and aromatherapy often use these herbs along with meditation and acupuncture to promote relaxation. Research suggests that these natural remedies can help lower stress hormones like cortisol, improve mood, and boost mental health. However, there are challenges, such as differences in the quality of herbal products, unclear dosages, and possible side effects when combined with other medicines. More scientific studies are needed to confirm their safety and effectiveness. This review emphasizes the potential of herbal treatments and suggests further research to make them a reliable option for managing stress and anxiety.

Keywords: Herbal remedies, stress relief, anxiety treatment, natural medicine, traditional healing and mental well-being.

ABSTRACT-26

Recent advances in Pulmonary drug delivery system

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A drug delivery system (DDS) refers to the technology and methods used to transport a pharmaceutical compound to its desired location in the body in a controlled and targeted manner. These systems aim to optimize the therapeutic effects of the drug while minimizing side effects and ensuring the drug reaches the right place at the right time. Pulmonary drug delivery systems (PDDS) offer a promising approach for the targeted and efficient administration of therapeutic agents, particularly for diseases affecting the lungs. This system leverages the large surface area and rich blood supply of the pulmonary region to enhance the bioavailability and therapeutic efficacy of drugs. Among various applications, the delivery of anti-tubercular drugs, such as Pyrazinamide (PZA), using nanoparticles has gained significant attention. Pyrazinamide is an essential drug in the treatment of tuberculosis (TB), especially during the intensive phase, but it suffers from poor bioavailability and extensive hepatic metabolism when administered via traditional oral routes. Nanoparticle-based drug delivery systems (NDDS), particularly those designed for pulmonary administration, can improve the solubility, stability, and controlled release of Pyrazinamide. This abstract explores the use of PZA-loaded nanoparticles as a novel approach for pulmonary drug delivery. The development of these nanoparticles, typically using biocompatible and biodegradable materials like lipids, polymers, or chitosan, enhances the drug's deposition in the lungs, leading to localized therapy. Furthermore, this strategy reduces systemic side effects, improves patient compliance, and overcomes issues such as gastrointestinal irritation and erratic absorption. The application of pulmonary nanoparticles may also extend to other pulmonary diseases, offering a versatile platform for future therapeutic interventions. This abstract encapsulates the importance of developing a pulmonary drug delivery system using Pyrazinamide-loaded nanoparticles to improve the treatment of tuberculosis and related pulmonary diseases.

Keywords: Pulmonary, lungs, nanoparticles, polymers, compatible.

ABSTRACT-27

Computational drug design and docking studies off imidazole derivatives for cancer therapy

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The need for novel treatments persists with the belief that cancer is one of the world's leading killers. The use of computational drug design has enabled the identification of potential drug candidates with higher efficacy and specificity. This study examines the potential anticancer properties of imidazole derivatives through their design and molecular docking analysis. Among the active cancer drugs, Imidazole is a heterocycle that contains five members and has anticancer properties. Through molecular docking, ADMET analysis, and molecular dynamics simulations, we have evaluated the stability and binding activity of imidazole derivatives against target proteins related to cancer in silico. The docking studies demonstrated robust interactions between specific derivatives and significant oncogenic proteins, indicating their potential as inhibitors. The potential therapeutic value of these drugs was confirmed by their reactivity and toxicity predictions. The docking studies revealed robust relationships between certain derivatives and crucial oncogenic proteins, suggesting their efficacy as inhibitors. Moreover, the prediction of drug properties and potency also validated the therapeutic potential. These findings demonstrate the potential of computational methods to expedite the process of discovering drugs for cancer treatment. Imidazole derivatives have been computationally studied and are considered promising candidates for anticancer therapy. The molecular docking studies demonstrated strong interactions with target proteins, indicating their inhibitory activity. Besides, in silico ADMET analysis indicated promising pharmacokinetic properties. In order to validate computational predictions, additional in vitro and in vivo studies are necessary, which will aid in the development of anticancer drugs using imidazole.

Keywords: Computational drug design, molecular docking, imidazole derivatives, cancer therapy, ADMET analysis, molecular dynamics, anticancer agents.

ABSTRACT-28

A research work on extraction of bioactive compounds, from pomegranate and orange peels

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Pomegranate (*Punica granatum*) and orange (*Citrus sinensis*) peels, commonly regarded as waste materials in the fruit processing industry, possess a wealth of bioactive compounds with significant potential for various applications. This study aimed to investigate the efficient extraction of bioactive compounds from pomegranate and orange peels using different extraction techniques and evaluate their potential applications in industries such as pharmaceuticals, food, cosmetics, and agriculture. A comprehensive literature review was conducted to understand the composition of pomegranate and orange peels and to identify suitable extraction methods for maximizing the yield of bioactive compounds. Various extraction techniques including solvent extraction, microwave-assisted extraction, ultrasound-assisted extraction, and supercritical fluid extraction were evaluated to determine their effectiveness in extracting phenolic compounds, flavonoids, antioxidants, and other bioactive constituents. The extracted compounds were analyzed using advanced analytical techniques such as HPLC, FTIR, and UV-Vis spectroscopy to identify and quantify individual compounds present in the extracts. Additionally, the antioxidant activity of the extracts was assessed using DPPH and ABTS assays. Characterization studies were conducted to evaluate the physical and chemical properties of the extracts, including Colour, viscosity, pH, and stability. Furthermore, the functional properties of the extracts such as emulsifying, foaming, and gelling properties were determined. The potential applications of the extracted compounds were explored, including their use as natural preservatives, antioxidants, antimicrobial agents, anti-inflammatory agents, and anticancer agents in various industries. Sustainability and economic viability of large-scale extraction processes were also evaluated, considering the environmental impact and cost-effectiveness of different extraction methods.

Overall, this research provides valuable insights into the extraction of bioactive compounds from pomegranate and orange peels and highlights their potential as valuable resources for the development of functional ingredients with diverse applications in the pharmaceutical, food, cosmetic, and agricultural sectors.

Keywords: Pomegranate peel extract, antibacterial, *Staphylococcus epidermidis*, *Staphylococcus aureus* peel-off mask

ABSTRACT-29

Formulation of herbal aftershave gel by using “brahmi” extract for the skin care as Holistic approach

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Aftershave gel infused with herbal extracts offers a natural and soothing solution for post-shaving skincare. Among various medicinal plants, “Brahmi (*Bacopa monnieri*)” stands out for its exceptional healing, anti-inflammatory, and skin-rejuvenating properties. Traditionally revered in Ayurveda, Brahmi is rich in antioxidants and bioactive compounds that help reduce razor burns, irritation, and redness while promoting skin hydration and repair. The incorporation of Brahmi extract in aftershave gel enhances its ability to calm the skin, accelerate wound healing, and protect against microbial infections. Unlike conventional aftershaves containing alcohol and synthetic additives, herbal formulations with Brahmi provide a gentle, nourishing experience, making them ideal for individuals with sensitive skin. This study explores the benefits of Brahmi-based aftershave gel, its formulation, and its potential in modern skincare as a sustainable, plant-based alternative for post-shave care. The growing demand for natural grooming products further emphasizes the relevance of Brahmi-infused aftershave gel in the personal care industry.

Keywords: Aftershave, Brahmi, Skin, Gel, polymers, skincare.

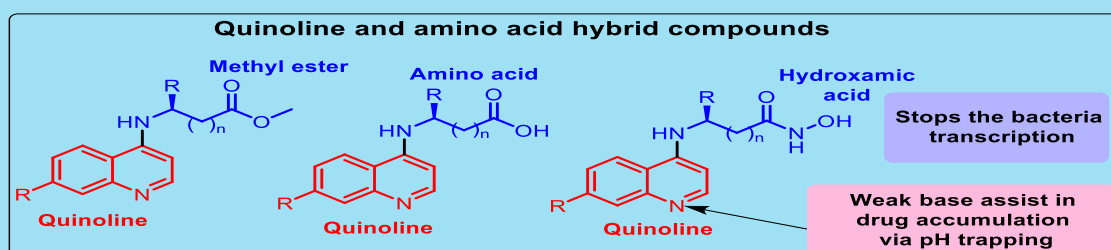
ABSTRACT-30

Design, Synthesis and Antimicrobial Activity of Quinoline and Amino Acid Conjugates

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The development of new antibacterial agents is an unmet need due to growing drug resistance of bacterial pathogens. Quinolines scaffold present in numerous drug candidates like Chloroquine, Primaquine and number FDA approved drugs. In view of developing new antimicrobial agents, we have designed herein a Quinoline and amino acid conjugates (Figure-1). We hypothesized that the C-terminal hydroxamic acid stops the bacterial transcription and hence the bacterial death will occur. Towards this aim, a total of 10 conjugates were synthesized upon condensation reaction, isolated compounds by column chromatograph and investigated their antimicrobial activity against five clinically validated bacterial strains and analyzed the data. Data showed that the compounds exhibited moderate antibacterial activity. Further optimization and SAR study is under progress.



ABSTRACT-31

Targeted Liposomal Delivery System: Comprehensive In-Vitro and In-Vivo Evaluations Against Hepatocellular Carcinoma

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In most cases, new drugs for hepatocellular carcinoma (HCC) develop resistance with time, resulting in therapy failure. The cellular metabolism is associated with chemoresistance in HCC. The poor solubility of natural compounds significantly limits their therapeutic efficacy. Natural compound shows hepatoprotective action due to its anti-oxidant and anti-inflammatory property. The major drawback related to natural compound poor solubility in aqueous medium which causes least absorption in gut. Despite evidence supporting the synergistic effects of combining these two classes of compounds, their clinical application remains challenging. Consequently, our study focuses on developing a liposomal nanoformulation that integrates both natural and synthetic compound. This innovative approach aims to enhance the therapeutic efficacy of the drugs while simultaneously reducing their toxic effects.

Objective(s) To formulate and characterize surface modified liposomal nanoformulation loaded with natural and synthetic compound.

Method(s) Ethanol injection method and carbodiimide coupling reaction were used for the liposomal nanoformulation and surface modification respectively.

Result(s) The particle sizes of the non-modified and modified formulations were measured at 176.8 nm and 186.5 nm, respectively. TEM analysis of the modified formulation revealed the successful attachment of the ligand to the liposomal bilayer, a feature that was not observed in the non-modified liposomes. FTIR analysis confirmed the presence of functional groups associated with the ligand in the modified formulation. DSC analysis indicated a reduction in drug crystallinity for both formulations. NMR analysis of the modified formulation displayed characteristic peaks corresponding to the ligands. In vitro and In vivo studies demonstrated that the targeted liposomes exhibited superior efficacy against HCC compared to both the pristine drug and non-targeted liposomes.

Conclusion(s) The TEM, FTIR, DSC and NMR analysis of the formulation shows promising physicochemical property. In-vitro and In vivo evaluation demonstrated that the targeted liposomes exhibited superior efficacy against HCC compared to both the pristine drug and non-targeted liposomes.

Keyword(s) liposomal nanoformulation, HCC.

ABSTRACT-32

Formulation of herbal soap by using “plant extract” for the management of skin diseases

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Herbal soap formulated with plant extracts has gained significant attention due to its natural, skin-friendly, and eco-conscious properties. Unlike conventional soaps containing synthetic chemicals, herbal soaps harness the therapeutic benefits of medicinal plants, offering a holistic approach to skincare. Extracts from herbs such as “neem”, “aloe vera”, “turmeric”, and “lavender” are commonly incorporated, each contributing unique antimicrobial, anti-inflammatory, and moisturizing properties. These natural bioactive compounds help in cleansing, nourishing, and rejuvenating the skin while reducing the risk of irritation and allergic reactions. Additionally, the absence of harsh detergents and artificial additives makes herbal soap an ideal choice for individuals with sensitive skin. This paper explores the benefits, formulation techniques, and effectiveness of herbal soaps infused with plant extracts, emphasizing their role in promoting sustainable and chemical-free personal care. The growing preference for organic and environmentally friendly products further highlights the potential of herbal soaps in the modern skincare industry.

Keywords: Herbal, soap, neem, aloe vera, antimicrobial, anti-inflammatory.

ABSTRACT-33

Rational Design, Synthesis, and Molecular Docking Investigations of Novel Piperazine Derivatives as Promising Antimicrobial Agents

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This study focuses on synthesizing novel heterocyclic piperazine derivatives, including 1- (4-fluorophenyl) derivatives. The piperazine moiety plays a vital role in various biological processes, particularly in microbial interactions. The research aims to develop new derivatives and evaluate their antimicrobial efficacy. Special emphasis is placed on assessing their potential antibacterial properties. Piperazine is a six-member heterocyclic organic compound that has four carbon atoms attached and two nitrogen atoms positioned opposite each other in the ring. Drugs that are antibacterial, antimalarial, anticancer, anti-inflammatory, antimicrobial, and antifungal are among the many biological effects of piperazine and its derivatives. For instance, the core structure of numerous significant commercial fluoroquinolone antibiotics, including Norfloxacin, Ciprofloxacin, Gatifloxacin, Grepafloxacin, Sparfloxacin, and Levofloxacin, contains the piperazine moiety.

Methods: Piperazine derivatives synthesized by the reaction of 2-phenyl piperazine by the reaction of bromophenyl acetic acid ethyl ester with ethylenediamine to form intermediate compound of 3-phenyl-piperazin-2-one. The intermediate compound is reduced using lithium aluminum hydride to yield 2-phenylpiperazine.

Result and Discussion Compound A2 exhibited the highest zones of inhibition (20 mm, 25 mm, and 28 mm) at 100 µg/ml, 200 µg/ml, and 300 µg/ml, respectively, against *Escherichia coli*. However, its activity was lower than Norfloxacin, which showed inhibition zones of 25 mm, 30 mm, and 35 mm at the same concentrations. The intermediate compound N-((4-aminophenyl) sulfonyl)-2-bromoacetamide was synthesized by the reaction of Bromoacetyl chloride with sulfanilamide in the presence of DMF as a solvent and potassium carbonate as a catalyst. The final compound 2-(4-(4-Fluorophenyl) piperazine-1-yl)-N-(4-sulfomomylphenyl) acetamide. (Compound A1) was synthesized by the stirring of (Intermediate 1a, N-((4-aminophenyl) sulfonyl)-2-bromoacetamide and sulphanilamide (both are dissolved in methanol) in the presence of potassium carbonate about 10-12 hr. 70°C.

Keywords: Piperazine, Sulphonamide, Antibacterial, *Escherichia Coli*, *Bacillus subtilis* and *Staphylococcus aureus*

ABSTRACT-34

Niosomal-Based Gel System for Psoriasis Treatment Incorporating Bioactive Constituents of Sesame Seed and Guggul

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Aim: This study aims to enhance the bioavailability of guggul and sesame compounds for psoriasis treatment using a transdermal niosomal gel. The formulation focuses on improving skin absorption, maximizing delivery, and ensuring prolonged release. Its goal is to reduce inflammation, promote skin renewal, and provide targeted, long-term therapy for psoriasis.

Introduction: The research explores the application of niosomal nanocarriers to enhance the transdermal delivery and therapeutic efficacy of guggul and sesame oil in the management of psoriasis. Guggul, with anti-inflammatory and antioxidant properties, and sesame oil, rich in fatty acids, help reduce inflammation and improve skin hydration. Both ingredients are effective in managing psoriasis symptoms by inhibiting abnormal skin cell growth. Niosomal systems may offer a promising approach to improve psoriasis therapy.

Material and Method: This study outlines the preparation of a niosomal-based gel containing Sesame Seed and Guggul extracts. The extracts are obtained through maceration or solvent extraction, followed by filtration and concentration. Carbopol 934 dispersion is neutralized with triethanolamine to form the gel base. Niosomal dispersions containing the extracts are incorporated into the gel, ensuring uniform distribution. The final gel is adjusted for volume and pH, and then transferred into containers for storage.

ABSTRACT-35

Synthesis and characterization of substituted 1,3,4 thiadiazole as potential antimicrobial agents

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Heterocyclic chemistry continues to draw the attention of synthetic organic chemists and is of great scientific interest. Because of the diversity in synthetic procedures, physiological and industrial significance, heterocyclic chemistry has been and continues to be one of the most active areas of organic chemistry. As a result, numerous heterocyclic compounds such as thiazoles, thiadiazoles, indoles, oxadiazoles, benzisoxazoles and pyrroles have been successfully used as antibacterial, anticancer, antipyretic, schistosomicidal, hypoglycemic, antihypertensive, antitubercular, anti-inflammatory and anti-HIV4 agents. In addition, they have also been used in agriculture, plastics, polymers, dyes and textiles. Hence heterocyclic chemistry still continues to draw the attention of synthetic organic chemists and is of great scientific interest. All large number of organo-sulfur compounds occur in living and non-living object. They belong to open chain, alicyclic, aromatic and heterocyclic types of compounds containing sulfur atoms or atoms as a part of chain/ring or both in the structure. Isolation, identification and applications of these organo-sulfur compounds lead to the fact that some of the compounds are useful in scientific, technical and industrial growth. During the last three decades organo-sulfur chemistry developed at a much faster pace than any other branches of organic chemistry.^{1,2} The role of organic sulphides in rubber vulcanization, hair curling, muscle contraction, natural aromas, vitamins, hormones, antibiotics, radio-protective agents, dye stuffs, binding materials organic semiconducting materials and organic light emitting diodes etc.

Keywords: Heterocyclic chemistry Thiadiazoles, antimicrobial activities, antibacterial, antifungal.

ABSTRACT-36

Antidepressant activity of *Aristolochia indica*: A Traditional ayurvedic herb

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Aristolochia indica, also known as Indian birthwort, possesses heart-shaped leaves, yellowish-green flowers, and capsule-like fruits. *Aristolochia indica*, a perennial climber native to the Indian subcontinent, has been used in traditional Ayurvedic medicine for various purposes. Depression is a debilitating mental health disorder affecting millions worldwide. Animal models, such as chronic unpredictable stress (CUS), have been developed to mimic depressive-like behaviour. *Aristolochia indica*, a perennial climber native to the Indian subcontinent, has been used in traditional Ayurvedic medicine for various purposes. The plant possesses heart-shaped leaves, yellowish-green flowers, and capsule-like fruits. Depression, a debilitating mental health disorder, affects millions worldwide. Chronic unpredictable stress (CUS) is a well-established animal model to induce depressive-like behaviour. This study aimed to evaluate the antidepressant-like activity of *Aristolochia indica* extracts in CUS-induced depressive rats. Male Wistar rats were subjected to CUS for 21 days and administered *Aristolochia indica* extracts (100, 200, and 400mg/kg) for 14 days. The results showed significant reductions in immobility time in forced swim test (FST) and tail suspension test (TST), and increased locomotor activity. Biochemical analysis revealed increased serotonin and dopamine levels in the brain. These findings suggest *Aristolochia indica* as a potential adjunctive treatment for major depressive disorder (MDD), warranting further investigation.

Keywords: *Aristolochia indica*, antidepressant, Ayurvedic medicine, chronic unpredictable stress, rodent models.

ABSTRACT-37

Microneedles in transdermal drug delivery: revolutionizing non-invasive treatment

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Transdermal drug delivery systems (TDDS) present a non-invasive alternative to conventional drug administration methods, offering advantages such as enhanced patient adherence, regulated release profiles, and the ability to circumvent the gastrointestinal system. Nevertheless, the efficacy of TDDS is often compromised by the skin's outermost layer, the stratum corneum, which restricts the absorption of many pharmaceutical compounds. The advent of microneedle technology has emerged as a viable strategy to address this limitation. Microneedles, measuring between 50 and 1000 micrometers in length, create temporary microchannels within the skin, thereby facilitating the delivery of a diverse array of therapeutic substances. This poster examines different microneedle types, including solid, coated, dissolving, and hydrogel-based variants, and elucidates their mechanisms that enhance drug permeation. Microneedles provide numerous benefits compared to traditional delivery methods, such as reduced pain, the capability to administer larger biomolecules (including proteins and vaccines), and the potential for controlled and prolonged drug release. Their applications extend to vaccine administration, insulin delivery, and cancer treatment. Despite these advantages, challenges persist, including high production costs, variability in skin characteristics, and regulatory obstacles. This presentation reviews the current advancements in microneedle technology, its practical applications, and future directions, particularly the development of smart microneedles aimed at personalized medicine. By enhancing drug delivery efficiency and improving patient experiences, microneedles can potentially transform the landscape of transdermal drug delivery.

Keywords: Transdermal Drug Delivery Systems (TDDS), Microneedles, Stratum Corneum, Drug Permeation, Controlled Drug Release, Personalized Medicine.

ABSTRACT-38

Chromatographic analysis of two polar extracts of *Syzygium Cumini* L. Leaves

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Introduction : *Syzygiumcumini*L. leaves are rich in various bioactive compounds, such as flavonoids, tannins, alkaloids, glycosides, and anthocyanins, which are responsible for their therapeutic effects.

Methodology: The aim of the research was to identify and characterize the chemical compounds present in the polar extracts using advanced chromatographic techniques, including Thin Layer Chromatography (TLC) and High-Performance Liquid Chromatography (HPLC) which provides valuable insights into the chemical composition of *Syzygiumcumini*L. leaves.

Result and discussion The R_f value of TLC and no. of bands, Retention time of HPLC and no. of peaks were calculated.

Conclusion: Qualitative and quantitative phytochemical credentials of *Syzygiumcumini* L. have been investigated. Various tests confirms the presence of phytoconstituents such as terpenoids, flavonoids, alkaloids, glycosides and phenolics. In further work, column chromatography has to be performed so that from the isolated compound novel bioactive structure will be identified.

ABSTRACT-39

Investigation of potential hepatoprotective effects of Capsaicin against alcohol induced zebrafish liver injury

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Introduction: Capsaicin is one of the most broadly utilized global bioactive dietary phytoconstituents unveiling multiple health benefits to both humans and animals. Capsaicin's hepatoprotective activity is mainly facilitated through its ability to neutralize free radicals, thereby reducing oxidative damage to liver cells. Capsaicin suppresses inflammatory pathways that impair liver injury. However, any of previous report lacking any evidence related to hepatoprotective activity of capsaicin on zebra fish model.

Aim: The study demonstrates in vitro antioxidant and in vivo hepatoprotective activity of Capsaicin on Zebrafish animal model.

Material & Methods: The in vitro antioxidant activity of capsiacin was performed using 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging method and in vivo hepatoprotective activity was performed on alcohol induced zebrafish liver damage, respectively.

Results In conclusion we have found that capsaicin was able to demonstrate significant antioxidant action and hepatoprotective activity as evidence from experiments.

Conclusion: The antioxidant activity of capsaicin is potential properties to signify its hepatoprotective effects. In conclusion the current study validated capsaicin role in improving liver toxicity through antioxidant mechanism and can be useful to develop many values added formulation in near future.

Keywords: Capsaicin, Hepatoprotection, Liver, Zebra Fish, Toxicity and Antioxidant.

ABSTRACT 40

Development and Evaluation of Glibenclamide-Loaded Spanlastic Gel for Enhanced Topical Drug Delivery and Wound Healing

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This study aimed to develop GLB-loaded spanlastics and incorporate them into a Carbopol 934 gel for sustained topical drug release and improved wound healing. Spanlastics were prepared using the ethanol injection method with varying concentrations of Span 60 and Tween 80 and characterized for particle size (PS), zeta potential (ZP), entrapment efficiency (EE%), and in-vitro drug release using Franz diffusion cells. Ex-vivo permeation studies on Wistar rat skin assessed the permeation flux. The optimized formulation (F1) was selected for further evaluation. Drug release studies showed 85.19% GLB release over 1440 minutes, significantly higher than conventional GLB gel (41.20%). The flux of F1 was 1.5 times greater than conventional GLB gel, with permeability coefficients of 3.08 and 1.98, respectively. In-vivo wound healing studies showed complete healing in rats by day 15. Wound contraction in F1-treated animals was 100%, compared to 93.75% in the pure GLB group and 90% in the standard group. These results highlight GLB-loaded Spanlastic gel as a promising topical drug delivery system for wound healing.

ABSTRACT-41

Revolutionizing Healthcare: Future aspects of Niosomes

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Advancements in nanotechnology have paved the way for innovative healthcare solutions, with niosomes emerging as a key player in drug delivery systems. Niosomes are vesicles composed of non-ionic surfactants, offering several benefits such as enhanced stability, biocompatibility, and the capacity to encapsulate both hydrophilic and lipophilic drugs. Niosomes in reshaping healthcare. Niosomes have shown great promise in areas like targeted drug delivery, gene therapy, vaccine development, and imaging. Their customizable size, surface charge, and composition allow for tailored treatments, boosting therapeutic effectiveness and reducing side effects.

Moreover, combining niosomes with cutting-edge technologies, like smart nanoparticles and controlled-release formulations, promises to overcome many current medical challenges. This review highlights ongoing research and explores future directions for niosomal formulations, such as their role in personalized medicine, bypassing biological barriers, and improving treatment for complex diseases like cancer, infections, and neurological disorders. Ultimately, niosomes have the potential to revolutionize healthcare by providing advanced drug delivery and therapeutic solutions.

Keywords: Niosomes, surfactants, lipophilic drugs, therapeutic.

ABSTRACT-42

PEGylated Hybrid Nanoparticles for Pain Relief

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Nanotechnology is the blessing in drug delivery system, play a vital role in limit toxicity. The objective of this study was to create and describe complex hybrid nanoparticles for etoricoxib docking in improved pain control using PEGylated PLA-Phospholipon 90G. The nanoparticle was made by single emulsification-solvated evaporation process and also show a good result in particle size, zeta potential, encapsulation effectiveness, and release kinetics study. By optimizing the formulation with chitosan pill microcapsule, it shows high drug entrapment and sustain release of drug Upto 24 hours improve patient compliance. In-vitro studies such as Transmission electron microscopy (TEM) and scanning electron microscopy (SEM) characterized the spherical morphology whereas differential scanning calorimetry (DSC) confirmed the entrapment of etoricoxib in polymer-lipid matrix. This was also corroborated via the observations with Raman and Fourier-transform infrared (FTIR) spectroscopy which exhibited a strong molecular interaction between the drug and excipients. Both the in-vivo writhing and tail immersion assays indicated considerable analgesic potency on Male Wistar rats. The study of drug's release kinetics aligned with the Korsmeyer-Peppas model shows delay and facilitated release of drug from polymer. The longer shelf life of the drug assured by the stability testing. From the all data we find that the PEGylated PLA-Phospholipid 90G hybrid nanoparticles may be a viable method for the targeted and regulated administration of etoricoxib in the fight against pain.

Keywords: Etoricoxib, PEGylated nanoparticles, PLA, Phospholipon 90G, pain management, controlled drug release, nanotechnology.

ABSTRACT-43

Design and Molecular Docking Studies of Novel 4-Thiazolidinone Hybrids with Natural Compounds as Potential Anti-cancer Agent

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Breast cancer remains one of the leading causes of cancer-related mortality worldwide, necessitating the continuous search for novel therapeutic agents. In this study, we designed various novel 4-thiazolidinone hybrids conjugated with selected natural compounds, aiming to enhance their anticancer potential. Thiazolidinones are well known for their diverse biological activities, including anticancer properties, while natural compounds serve as bioactive scaffolds with promising therapeutic effects. Molecular docking studies were performed to evaluate the binding affinity of the designed compounds against human epidermal growth factor receptor-2 (HER2). The docking results reveals strong interactions of the designed hybrid molecules with key amino acid residues in the active sites, showing their potential as effective inhibitors. Comparative analysis with standard drugs demonstrated that these designed hybrids show favourable binding energies and drug-like properties.

The findings from this study highlight the potential of novel 4-thiazolidinone-natural compound hybrids as promising scaffold for breast cancer therapy. Further in-vitro and in-vivo studies will be carried out to validate their efficacy and safety profiles. This research contributes to the ongoing efforts in the development of novel anticancer agents.

Keywords: 4-thiazolidinone, heterocyclic compounds, anti-cancer, natural compounds.

ABSTRACT-44

Uncovering the potential: Review of medicinal plants with Anti-diabetic activity

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The current study's objective is to assess numerous medicinal plants with antidiabetic properties. Among the many prevalent diseases that are not transmissible in the world is diabetes mellitus. Furthermore, there is significant evidence that it has become becoming prevalent throughout numerous emerging and recently industrialized countries. It is currently the fourth largest reason for mortality in the world's most advanced nations. The modern era must address this major menace. Plants have long been revered as excellent sources of treatment. The application of medicinal plants to heal many different diseases was documented in Ayurvedic as well as other Indian literature.

Although traditional anti-diabetic medications work well, they also have undesirable negative consequences. However, medicinal herbs can serve as a different source of antidiabetic medications. Emphasis is placed on preclinical and clinical investigations as instances for herbal remedies having the capability of treating diabetes are given. Diabetes is historically prevented and treated in India using medicinal plants. The plants that are said to possess effective anti-diabetic properties are described in this summary.

Keywords: Diabetes mellitus, Herbal plants, α -glucosidase inhibition, α -amylase inhibition.

ABSTRACT-45

Formulation and Characterization of Controlled-Release Microspheres Using Spray Drying Technique

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Spray drying is a widely used technique that transforms a liquid feed, such as a solution, dispersion, or paste, into a dry particulate form by atomizing it into a hot drying medium. This study utilized both natural and synthetic polymers to develop an optimized drug delivery formulation. The selected polymer in the optimized batch is a synthetic variant known for its controlled-release properties, making it highly suitable for pharmaceutical applications. In this formulation, the polymer was incorporated at a 1:2 ratio using an organic solvent, which resulted in maximum drug release. All the prepared formulations exhibited drug content uniformity within the range of 60% to 70%. The optimized batch, in particular, demonstrated 70% drug content uniformity and followed zero-order kinetics, ensuring a consistent and predictable release of the drug over time. These findings highlight the effectiveness of spray drying in improving drug release efficiency and maintaining uniformity in drug content. The incorporation of a synthetic polymer in the optimized formulation underscores its potential in controlled drug delivery systems. Overall, the study emphasizes the significance of polymer selection and concentration in achieving desirable drug release characteristics through spray drying technology.

Keywords: Spray drying, microspheres, controlled-release, drug delivery system, synthetic polymer, natural polymer, zero-order kinetics.

ABSTRACT-46

Pharmacogenomics: A new approach in the Personalized clinical practice

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Changes in the drug efficacy and drug safety due to variation in the genomic composition, is a major challenge in current clinical practice, drug development, and drug regulation. Various pharmacogenetic studies have provided a number of examples of relations between genotypes and drug response, which shows clinical importance of pharmacogenomics in drug therapy. With the advancement in recent years in the field of genetics, discovery of new genetic variations which causes variability in drug responses gave birth to Pharmacogenomics. Pharmacogenomics mainly focuses on the identification of genetic variations that influence drug effects, typically through alterations in pharmacokinetics or pharmacodynamic parameters. Differences in the genes that encode for drug targets, drug transporters, and enzymes that catalyze the drug metabolism affect the success/failure of pharmacotherapy. Taking the example of genes that code for the Microsomal Enzymes, induction of these enzymes can lead to faster metabolism of those drugs. In cancer, both inherited and somatically acquired variants influence patient's response to treatments. Pharmacogenomics helps one to understand how genetic variations are associated with the efficacy and/or toxicity of medicines. Advances in genome interrogation technology and in analytical approaches have facilitated the evolution of a discovery model from candidate gene studies and is leading towards a newer approach of personalized drug delivery system, which will be a revolution in the clinical practice.

Keywords: Pharmacokinetics, Pharmacodynamics, Microsomal Enzymes, Genome.

ABSTRACT-47

Targeting Alpha Amylase: A Novel approach for Diabetes Management

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The alpha (α)-amylase is a calcium metalloenzyme that aids digestion by breaking down polysaccharide molecules into smaller ones such as glucose and maltose. In addition, the enzyme causes postprandial hyperglycemia and blood glucose levels to rise. α -Amylase is a well-known therapeutic target for the treatment and maintenance of postprandial blood glucose elevations. Various enzymatic inhibitors, such as acarbose, miglitol and voglibose, have been found to be effective in targeting this enzyme, prompting researchers to express an interest in developing potent alpha-amylase inhibitor molecules. The review mainly focused on designing different derivatives of drug molecules along with their target-receptor interactions, IC₅₀ values and other biological activities. Diabetes is categorized as type-I and type-II. Type-I diabetes is triggered by insufficiency of insulin secretion, while type-II diabetes, the most prevalent type of diabetes, is caused due to a combination of insulin resistance and its action. Type-I and type-II diabetes have similar physio pathological properties but differ in etiology.

Keywords: Enzyme, alpha (α)-amylase, Polysaccharide, maltose, glucosidase.

ABSTRACT-48

***Tylophora tenuis*: A phytochemical and, pharmacological investigation of its Hepatoprotective Properties**

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Tylophora tenuis (Family- Asclepiadaceae) twinning herb with milky sap. This plant leaves are linear-lanceolate, flowers-pinkish, in lateral laxly branched cymes. It produces slender stem up to 2.5 m long that twine into other plant for support. It is a traditionally used medicinal plant in Ayurveda and Unani system, for treating various ailments, including respiratory disorders, fever, and Rheumatism. The leaves, roots and stems of the plant are used in medicine. It is a perennial climber native to tropical Asia, including India, Sri Lanka, and Southeast Asia, and is commonly known as “Antamul” or “Indian ipecac”. *Tylophora tenuis*, a plant used in traditional medicine, has been reported to possess various biological activities. However, its hepatoprotective potential remains largely unexplored. This study aimed to investigate the phytochemical and pharmacological properties of *Tylophora tenuis* extracts and evaluate their hepatoprotective activity. Phytochemical analysis revealed the presence of flavonoids (quercetin, kaempferol) alkaloids (tylophorine, tylophorinine), and phenolic acids (ferulic acid, cinnamic acid). The extracts exhibited significant antioxidant activity and inhibited lipid peroxidation. In vivo studies demonstrated that the extracts protected against carbon tetrachloride-induced liver damage, as evidenced by reduced liver enzyme levels and improved liver histology. Carbon tetrachloride (CCl₄) is widely used in the liver to induce Acute Liver Injury (ALI) through the formation of reactive oxygen species. CCl₄ exposure can be performed intraperitoneally, by inhalation, or through a nasogastric tube. The findings of this study provide evidence for the hepatoprotective potential of *Tylophora tenuis*, highlighting its value as a natural remedy for liver disorders. Further research is warranted to fully explore the therapeutic applications of *Tylophora tenuis* as Hepatoprotective agent.

Keywords: *Tylophora tenuis*, hepatoprotection, phytochemistry, pharmacology, liver health.

ABSTRACT-49

Transethosomes: A novel approach for enhanced transdermal drug delivery

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Transdermal drug delivery offers an effective alternative to traditional drug administration, sidestepping many of the issues often linked with oral intake. One of the biggest challenges in this method is the stratum corneum, which tends to resist a lot of medications. A standout solution for transdermal delivery is the use of ultra-deformable vesicles (UDVs). These vesicles include ethosomes, transferosomes, and transethosomes (TEs). TEs, in particular, enhance the penetration of drugs through the stratum corneum due to their careful design involving ethanol, phospholipids, and edge activators. Their unique structure also helps medications reach deeper layers of the skin more effectively. There are several ways to prepare transethosomes , including cold methods, hot methods, thin film hydration, and ethanol injection methods. By using non-invasive systems, we can enhance patient adherence and compliance since drug administration becomes much simpler. When characterizing TEs, we look at factors like size and shape, zeta potential, entrapment efficiency , drug content. These flexible vesicles can deliver a variety of drugs, such as antifungals, analgesics, antibiotics, antivirals, as well as medications used for cancer and arthritis. This exploration will delve into the different vesicular approaches designed to overcome barriers in transdermal delivery, covering their composition, preparation methods, characterization, penetration mechanisms, and a range of medical applications for transethosomes

Keywords: Transethosomes , Phospholipids, Edge Activator, Ultra deformable vesicles.

ABSTRACT-50

Comparative analysis of polymeric nanoparticles and liposomes for *Abrus precatorius* l. delivery system

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Among various kinds of Nanovesicles developed till date polymeric nanoparticles and liposomes-based delivery system has shown as an effective drug carrier for *Abrus Precatorius* Promising pharmaceutical advancement. The comparison of these two nanoparticle systems demonstrates the superiority and downfalls in each case on *Abrus precatoriusL.* compounds delivery perspective. Generally, polymeric nanoparticles are made of biodegradable organic polymers. Such polymers can produce nanoparticles which allow bioactive compounds to remain in the matrix or be adsorbed onto their surface. Polymeric nanoparticles, which bear a solid matrix, can surround an active principle in order to protect it from the external environment conditions (pH values and temperatures) and prevent their extensive degradation on exposure enzymes. This stability is important for compounds of *Abrus precatoriusL.* that are prone to degradation in the gastrointestinal tract or bloodstream, and they need a way into tumors without modifying their structures too much. Additionally, polymeric nanoparticles can be designed to release under specific stimuli such as pH changes or presence of enzymes that is a potentially targeted drug delivery. Liposomes are spherical vesicles of one or more phospholipid bilayers that surround an aqueous core. The amphiphilic character can encapsulate both hydrophilic and hydrophobic compounds. The hydrophobic drugs get diffused into the lipid bilayer, and hydrophilic drugs are entrapped inside of an aqueous core. Due to this unique property of liposomes, it is suitable for delivering *Abrus precatoriusL.* An important advantage of liposomes is their ability to resemble biological membranes, enabling them close interactions with cellular and subcellular structures. Finally, a membrane-like structure of liposomes with cell membranes leads to enhanced intracellular delivery of packaged drugs. Furthermore, it is possible to manipulate the lipid composition of liposomes and co-pack ligands or targeting moieties with a drug in order to direct therapy towards certain tissues or cells. The wide use of target-specific delivery system is highly desirable in cancer therapy.

Keywords: Nanoparticles, Nanovesicles, Liposomes, *AbrusPrecatoriusL.*

ABSTRACT-51

Development, Characterization and Optimization of Ornidazole drug microsp sponge

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The aim of the present study is to formulate, development and characterization the Ornidazole microsp sponge by using Ethyl cellulose by quasi emulsion solvent diffusion method. Microsp sponge was made target specific release of the drug for vaginal drug delivery.

Materials: Microsp sponge containing Ornidazole, Ethyl cellulose and PVA used for microsp sponge preparation. Different stirring rate i.e. 700, 1000, 1100 rpm used for preparation.

Objective: Particle size of prepared microsp sponge was observed by different method. The production yield, entrapment efficiency and drug content were found to be above 70%. The impact of Drug: Polymer ratio and process variables i.e. stirring speed and stirring time on the physical features of microsp sponge like production yield, mean particle size, entrapment efficiency was examined. It was shown that production yield, drug content and entrapment efficiency was found to be change with drug: polymer ratio.

Result As the polymer concentration increased, thus increasing the thickness of the wall of the polymer matrix which led to extended diffusion path and ultimately to lesser drug release or more sustained release. The effect of stirring rate on the morphology of microsp sponge.

Conclusion The dispersion of the drug and polymer within the aqueous phase was found to be dependent on the agitation speed. As the speed was increased the size of microsp sponges was reduced and the microsp sponges were found to be spherical and uniform.

Keywords: Ornidazole, Vaginal drug delivery, Quasi- emulsion solvent diffusion, Ethyl cellulose.

ABSTRACT-52

A review of control, malaria, and difficult strategies

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Approximately 70% of WHO's Southeast Asian malaria cases occur in India. Due to the identification of numerous malaria ecotypes and paradigms, the state's risk of malaria transmission is diverse and fluctuating, with over 2 million cases and about 1,000 fatalities reported each year. The data used in this most recent study comes from 87 nations and territories where malaria is still spreading. The majority of malaria illness and mortality is caused by the 4,444 high-exposure population, which resides in forested regions like Orissa, Jharkhand, Madhya Pradesh, Chhattisgarh, and northeastern states. According to the World Health Organization (WHO), there were 409 thousand malarial fatalities and 229 million illnesses in 2019. Additionally, the pattern of severe malaria's clinical symptoms has evolved, with several organ. Although vivax malaria with severe symptoms has been reported, falciparum malaria failure is more typical. Actual malaria must be estimated in order to calculate the reported estimated morbidity-mortality gap. ACTs, or artemisinin-based combination treatments, are essential instruments for lowering the prevalence of malaria worldwide. Of the papers that used therapeutic efficacy as the primary outcome and performed molecular correction, only 45% (99/221) reported corrected efficacy outcomes that were computed in accordance with WHO guidelines. The World Health Organization implements a global malaria control program that emphasizes disease prevention, early disease detection, prompt treatment, and local primary health care strengthening. Malaria is less common now than it was a decade ago. On the other hand, the number of malaria cases worldwide has increased in recent years. Examine the most recent research on the functions of pro- and anti-inflammatory cytokines in the human immunological response to malaria in this review. Healthcare practitioners will require a variety of new methods and resources to accomplish sustainable control of malaria, and research will be essential to the creation of these innovative tactics.

Keywords: Malaria, Plasmodium Falciparum, Plasmodium vivax, WHO Resistance, Quinine.

ABSTRACT-53

ADRMS–Adverse drug reaction monitoring system

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Adverse Drug Reactions (ADRs) are unintended, harmful effects arising from the normal use of medications, posing significant challenges to patient safety and public health. An Adverse Drug Reaction Monitoring System (ADRMS) is a vital component of pharmacovigilance, designed to systematically identify, assess, and mitigate risks associated with drug use. This system collects data from diverse sources, including healthcare facilities, regulatory bodies, and patient reports, enabling the detection of new ADR patterns and trends. The ADRMS employs advanced technologies such as data analytics, artificial intelligence, and machine learning to analyze vast datasets and predict potential drug safety concerns. Healthcare professionals, pharmaceutical industries, and policymakers collaborate within this framework to improve drug efficacy and safety. Key processes include ADR reporting, causality assessment, and feedback loops to update prescribing guidelines and labels. Despite its importance, challenges such as underreporting, lack of awareness among healthcare providers, and limited infrastructure in developing countries hinder its effectiveness. Addressing these challenges requires global standardization, education, and investment in digital health solutions. In conclusion, an ADR monitoring system plays a crucial role in minimizing medication-related risks, enhancing therapeutic outcomes, and protecting public health. Strengthening these systems globally is essential for a safer healthcare environment.

Keywords: Adverse Drug Reactions, Pharmacovigilance, Patient Safety, Data Analytics, Healthcare Systems

ABSTRACT-54

Utilization of Unani medicine for their hepatoprotective effects

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Purpose The Unani medical system is among the oldest traditional medical systems and has been treating cirrhosis and chronic liver illnesses for centuries. These therapies have demonstrated the ability to reverse fibrosis and inflammation in a number of clinical situations. Unani formulations that are useful in the treatment of hepatotoxicity have been reviewed here.

Method: 'Liver illnesses' and 'name of specific Unani formulation and plant medication' were used to search PubMed and Google Scholar. Formulations for liver illnesses as well as the pharmacological and phytochemical details of certain plant medications were among the results of interest. The Unani Pharmacopoeia of India (Formulation) and the National Formulary of Unani Medicine served as additional information sources.

Result There is a wealth of single plant and compound formulations available in unani medicine. A description of several chemical compositions for the treatment of liver disease is provided. These drugs act due to their Gul-e-Nilofar (antioxidant), Guncha-e-Gul-e-Surkh (antidiabetic), Mufattiḥ (deobstruent), Tukm-e-Kasni (hepatoprotective), and Tukm-e-Kasnis (anti-inflammatory) action. The bioactive ingredients in these medications have hepatoprotective, hypoglycemic, anti-inflammatory, hypolipidemic, and antioxidant properties.

Conclusion Based on the results of numerous clinical and experimental studies, we have concluded that the use of Unani remedies can enhance clinical outcomes in liver illness. It also finds that treatment with Unani formulations were helpful in preventing liver damage in rats, as they greatly reduced hepatotoxic damage markers. However, further clinical trials are essential to provide a safe and effective option for addressing this prevalent liver condition. Additionally, data shows that rats treated with Unani formulations had significantly lower levels of hepatotoxic damage indicators, which helped to prevent liver damage. Nevertheless, more clinical research is necessary to offer a secure and practical solution for this common liver disease.

ABSTRACT-55

Synthesis, characterization, molecular docking, antimicrobial and antioxidant evaluation of 1h benzo[d] [1,2,3] triazole derivatives

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This proposed study aims to synthesize and evaluate novel 1H-benzo[d] [1,2,3] triazole derivatives for their potential antimicrobial and antioxidant activities. The synthesis will be carried out using substituted aromatic aldehydes and coupling reagents under optimized conditions to obtain structurally diverse triazole derivatives. The chemical structures and purity of the synthesized compounds will be confirmed through advanced spectroscopic techniques, including Fourier-transform infrared (FT-IR), nuclear magnetic resonance (NMR), and mass spectrometry (MS). Molecular docking studies will be performed to predict the binding interactions of these derivatives with microbial enzymes and antioxidant targets. These simulations are expected to reveal key molecular interactions, such as hydrogen bonding and hydrophobic forces, that may correlate with the biological activity of the compounds. The antimicrobial potential of the synthesized derivatives will be assessed against selected Gram-positive and Gram-negative bacterial strains, as well as common fungal species, using broth microdilution methods. Minimum inhibitory concentrations (MIC) will be determined to identify compounds with significant antimicrobial activity.

Antioxidant activity will be evaluated using DPPH and ABTS radical scavenging assays to estimate the free radical neutralization capacity of the derivatives. Through this study, structure-activity relationships will be established to identify the functional groups contributing to enhanced biological activity. The results of this proposed work are expected to provide new insights into the development of multifunctional 1H-benzo[d][1,2,3] triazole derivatives, which may serve as promising candidates for future antimicrobial and antioxidant drug development. Future work will focus on optimizing the synthesis and exploring potential pharmacological applications of these derivatives.

Keywords: 1H-benzo[d][1,2,3] triazole, synthesis, characterization, molecular docking, antimicrobial activity, antioxidant activity.

ABSTRACT-56

Recent advances in drug delivery system

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During the past few years, interest in the development of novel drug delivery systems for existing drug molecules has been renewed. The development of a novel delivery system for existing drug molecules not only improves the drug's performance in terms of efficacy and safety but also improves patient compliance and overall therapeutic benefit to a significant extent. Hypertension is a major health problem throughout the world because of its high prevalence and its association with increased risk of cardiovascular disease. Advances in the diagnosis and treatment of hypertension have played a major role in recent dramatic declines in coronary heart disease and stroke mortality in industrialized countries. Although hypertension may occur secondary to other disease processes, more than 90 percent of patients have essential hypertension, a disorder of unknown origin affecting blood pressure-regulating mechanisms. Topical formulations containing drugs showing systemic action are called transdermal delivery systems (TDS) or transdermal therapeutic systems. Transdermal delivery may be defined as the delivery of a drug through 'intact' skin so that it reaches the systemic circulation in sufficient quantity, to be beneficial after administration of a therapeutic dose. Transdermal systems are ideally suited for diseases that demand chronic treatment. Hence, anti-diabetic agents of both therapeutic and prophylactic usage have been subjected to transdermal investigation. Fosinopril is a phosphinic acid derivative which undergoes rapid hydrolysis. Cardiotropic effects have been associated with the drug, and the compensatory dual elimination route of Fosinopril via renal and hepatic systems offers an opportunity for ACE inhibitor treatment of hypertension in patients with renal or hepatic impairment.

Keywords: Hypertension, TDS, Cardiotropic, Fosinopril etc.

ABSTRACT-57

Synthesis and evaluation of anti-inflammatory properties of newer pyrazole derivatives

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This proposed study aims to synthesize and evaluate the anti-inflammatory properties of novel pyrazole derivatives. The synthesis will involve the condensation of hydrazine derivatives with 1,3-diketones or their equivalents to form substituted pyrazole scaffolds. Various functional groups will be introduced to modify the chemical structure and enhance biological activity. The synthesized compounds will be characterized using advanced spectroscopic techniques, including Fourier-transform infrared (FT-IR), nuclear magnetic resonance (NMR), and mass spectrometry (MS), to confirm their molecular structures and purity. In vitro anti-inflammatory activity will be evaluated using the inhibition of protein denaturation (IPD) and human red blood cell (HRBC) membrane stabilization methods to screen potential candidates. Compounds demonstrating significant in vitro activity will be further evaluated using in vivo animal models, such as carrageenan-induced paw edema in rats, to assess their effectiveness in reducing acute inflammation.

Molecular docking studies will be conducted to investigate the binding affinity of the synthesized derivatives with key inflammatory enzymes, such as cyclooxygenase-2 (COX-2). This will help elucidate the structure-activity relationship (SAR) and identify functional groups contributing to enhanced anti-inflammatory activity. The proposed study aims to develop pyrazole derivatives with improved anti-inflammatory efficacy and reduced side effects compared to conventional non-steroidal anti-inflammatory drugs (NSAIDs). The findings may pave the way for future research into safer and more effective therapeutic agents for the treatment of inflammatory conditions.

Keywords: pyrazole derivatives, synthesis, anti-inflammatory activity, molecular docking.

ABSTRACT-58

Formulation Evaluation of Terbinafine Nanoemulgel with Natural Surfactant for Fungal Infection

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This proposed study aims to formulate and evaluate a terbinafine nanoemulgel using natural surfactants for the treatment of fungal infections. Terbinafine, a well-known antifungal agent, will be incorporated into a nanoemulsion system to enhance its solubility, stability, and skin penetration. The nanoemulsion will be prepared using natural surfactants and oils to ensure biocompatibility and minimize potential skin irritation. Various formulation parameters, such as surfactant concentration, oil-to-surfactant ratio, and homogenization speed, will be optimized to produce nanoemulsion with uniform droplet size and high stability.

The nanoemulsion will be converted into a gel matrix to improve topical application and ensure prolonged retention at the site of infection. The physical and chemical stability of the nanoemulgel will be evaluated through particle size analysis, zeta potential measurement, pH determination, and drug content assessment. Rheological studies will be conducted to assess the viscosity and spreadability of the formulation.

In vitro drug release studies will be carried out to evaluate the sustained release potential of the terbinafine nanoemulgel. Antifungal activity will be tested against common fungal pathogens, including *Candida albicans* and *Trichophyton rubrum*, using well diffusion and broth dilution methods to determine minimum inhibitory concentration (MIC) values. Additionally, skin irritation and cytotoxicity studies will be conducted to assess the safety and tolerability of the formulation.

This study is expected to demonstrate that the terbinafine nanoemulgel with natural surfactants can offer enhanced antifungal efficacy, improved skin retention, and reduced side effects compared to conventional formulations. The findings may contribute to the development of more effective topical antifungal treatments for superficial fungal infections.

Keywords: terbinafine, nanoemulgel, natural surfactant, fungal infection, antifungal activity, formulation development, skin penetration, sustained release, MIC, topical delivery.

ABSTRACT-59

Drug induced New Onset Diabetes: A Review

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Introduction : Drug-induced new onset diabetes and hyperglycemia is a global issue. Drug-induced new onset diabetes to be 22% with beta blocker, 10–30% with antipsychotic, 3–17% with antiretroviral, 15–30% in transplant immunosuppression, 10% with thiazide diuretic, 7–48% in statin, 40–65% with glucocorticoid and 0.8–1.9% with immune checkpoint inhibitors. Physicians may see more patients with acute and long-term consequences of drug-induced new onset diabetes and hyperglycemia as the prevalence of diabetes mellitus rises worldwide. To assess the impact of various medication classes on patients' risk of getting diabetes with new onset in order to guide treatment plans.



Method: A meta-analysis was carried out, combining information from published clinical trial data, literature reviews, and analyses of earlier research projects from sources like PubMed, PubMed Central, Google Scholar, and Science Direct.

Result: Some medications can cause new-onset diabetes by a variety of mechanisms, such as changes in insulin production and sensitivity, effects on the insulin receptor, decreased such medications included beta blockers, glucocorticoids, antipsychotics, thiazide diuretics, statins, and antivirals etc.

Conclusion: To avoid acute and long-term problems, drug-induced new onset diabetes must be identified, screened, monitored, and appropriately managed. Through a variety of processes, drugs have a crucial role in the development of new-onset diabetes. The findings emphasize how crucial it is to choose lower-risk drugs in order to reduce a patient's chance of developing diabetes. In order to prevent and control drug-induced New Onset Diabetes and enhance clinical outcomes, further research is required to completely comprehend these pathways and create focused interventions.



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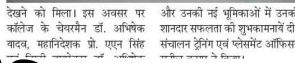


Activities @ G.C.R.G.



मेगा जॉब फेयर में 400 छात्र-छात्राओं को मिली नौकरी

कार्यालय संवाददाता



और उनकी नई भूमिकाओं में उनका शानदार सफलता की शुभकामनाएं दी संचालन ट्रेनिंग एवं प्लेसमेंट ऑफिस

दैनिक जागरण

मेगा जॉब फेयर में 400 छात्रों को मिली नौकरी



जीसीआरजी के पॉलिटेक्निक अंतिम वर्ष के 25 छात्रों का एक साथ हुआ कैंपस प्लेसमेंट

लाखानांकु ।

सिजलीन ऐनजा लिमिटेड द्वारा कपन प्लसमेंट के माध्यम से जीसीआरजी ग्रुप ऑफ इस्टीस्टाज के पॉलिटेक्निक अंतिम वर्ष के 25 छात्रों का चयन किया गया है। इन छात्रों को कंपनी द्वारा गुवागता, मेटेसिंस एवं उत्पादन के पदों के लिए चुना गया है। कंपनी ने छात्रों को वार्षिक पैकेज रु. 2.3 लाख की श्रेयशक्ति है और ये सभी छात्र राजस्थान के जैसलमेर में अपनी नौकरी के लिए जायें। विशाल गुप मार्केटिंग हेड जीसीआरजी ग्रुप ऑफ इस्टीस्टाज ने बताया कि यह उपलब्धि हमारे छात्रों को लान और कड़ी मेहनत के साथ-

साथ हमारे संस्थान द्वारा प्रदान की जाने वाली शिक्षा और प्रशिक्षण की गुणवत्ता को भी दर्शाती है। हम चयनित छात्रों को हार्दिक बधाई देते हैं और उनका नई भूमिकाओं में उनकी शानदार उपलब्धता को कामना करते हैं। जीसीआरजी ग्रुप ऑफ इंस्टीट्यूशन्स ने अपने छात्रों के लिए इस प्रकार के अवसर उपलब्ध कराने का सतत प्रयास किया है और आगे भी प्रयत्न रहेगा।

सार-संक्षेप



52 छात्रों को एक साथ मिली नौकरी

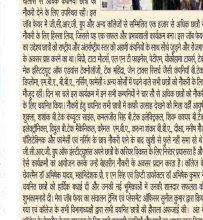
अमृत विचार, लखनऊ। बरखा का तालाब स्थित जीसीआरजी ग्रुप आफ इस्टीमेट्स का बैठक एवं डिजिटलीकरण के बच्चों के लिए कैपस इंटरव्यू आयोजित किया गया। इस कैपस में इंटरव्यू में औरंगाबाद की कंपनी प्लूट इंटरनेशनल ने 52 बच्चों का चयन किया। कंपनी की तरफ से आए अधिकारी महान पाठक ने छात्रों को भविष्य में अपनी तकनीकी क्षमता को और बेहतर बनाने के टिप्स दिए।

डॉ. जयवीर पासो ने कहा कि आने आदि उपस्थित रहे।

मेगा जॉब फेयर में 400 को मिली नौकरी



जीसीआरजी ग्रुप ऑफ इंस्टीट्यूट्स के मेग जॉब फेयर में
चार सौ छात्रों को मिली नौकरी



JOB FAIR

GRC Group of Institutions hosted a Mega Job Fair on August 3, featuring over 40 companies and attracting more than 100 students from GRC and other colleges. The event aimed to connect students with leading national and international companies, resulting in over 400 job placements. Enthusiastic students included Ayush Shukla (BTECH Computer Science),

Shushank (BTECH Computer Science), Kamaljit Singh (BTECH Electrical), Shivam Kashyap (BTECH Electronics), Vipul (BTECH Mechanical), Komal (MBA), Karuna Shankar (BBA), Diksha, Manish Garg (Polytechnic), and others. Chairman Dr. Ashok Yadav, Director General Prof. Anil Singh, and Deputy Director Dr. Ashish Kumar congratulated the new recruits. The event was organized by Training and placement officer Sunil Kumar and supported by department heads.

Media Coverage

जीसीआरजी ग्रुप के 25 छात्रों का हआ प्लेसमेंट



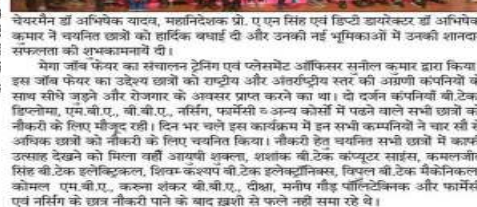
जीसीआरजी कॉलेज के 52 छात्रों को एक साथ मिली नौकरी

कालेज ऑफ आर्ट्स के 52 छात्रों को एक साथ दिखाते तस्वीर लखनऊ। बच्चों का तालाब स्थित जीसीआरजी ग्रुप आफ इंस्टीट्यूशंस में बीटेक एवं डिप्लोमा के बच्चों के लिए कैम्पस इंटरव्यू आयोजित किया गया,

इस कारण से इटलीयू में आरिंगवाड को कंपनी भूत इंटरनेशनल ने 52 बच्चों का चयन किया। यह सभी 52 बच्चे आरिंगवाड भूत स्थित इंटरनेशनल जो की एक अंतरराष्ट्रीय स्तर की कंपनी है। मैं सेलेक्ट हूँ। कंपनी की तरफ से अगर अधिकांश मोहन पाऊन ने छात्रों की भावियता अपने तकनीकी क्षमता को और और बेहतर बनाने के दिये दिये। कॉलेज के महानिदेशक प्रोफेसर एम सिंह ने सभी चयनित छात्रों को उधारी दी। इस अवसर पर संस्थान के प्रेसमैंट जयचरित्र प्रत्युशी श्रीवासलव और डॉनो को प्रेसमैंट दी। नए छात्रों को अवसर प्रदान करने के लिए श्री पाऊन का भव्यवाड प्रेषित किया।

राष्ट्रीय
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मेगा जॉब फेयर में 400 छात्रों को मिली नौकरी



**जीसीआरजी ग्रुप ऑफ इंस्टीट्यूशंस के मेगा
जॉब फेयर में 400 छात्रों को मिली नौकरी**

लखनऊ। जोषीआगजी गूण आँइ दूयरासुं सें शरितकर से आइ मरिस में गंगा ज्यो फेरकर आयांजवो कल। इमे गंगा ज्यो फेरकर में ललामभा चालीस से अधिक कंपनियां छलें जे नौकरि देवे लिए उपयुक्त छलें। इन छह फेर में मोजाआगजी गूण आँइ अन्य कालेस से सम्यक्त लिए इन्डो से अधिक छलें जे नौकरि के लिए हिस्सा लिए, जिसमे नव सौ सफरल और प्रभावशाली कार्यक्रम बाने। इमे सजि फेरक का उदेश्य छलें जे मोजीय और अनारंगद्वि फरक को अग्रणी कंपनियों के साथ सौ सौ जुड़ने और रोजगार के अवसर प्राप्त करने का लक्ष्य। छहटा मोसलें एकपट्टी फाइनस, पेटिओ, बोकोहामावास, टेकनोमोजी आदि उपवास एकेमोलोजी, मोजीय महिष्ठ, उन द्यास रिसर्च जेजी कंपनियों बोकडेल, डिस्कोमा, एम्बोए, बीबीए, नरिस, फामेसी ड अन्य कंपनियों में पढेले वालें छलें जे नौकरि के कालेस मोजुख रहल। दिन भर चले इमे कार्यक्रम में इन सौस कामपानों में चार सौ से अधिक छलें जे नौकरि के लिए क्युवत काल। वही आगुपी शुक्ला, शांतिबाबी टेकनोमोजी काल, महमोजी हिरि एण्ड



बॉयस ऑफ लखनऊ
25 छात्रों का एक साथ हुआ कैंपस प्लेसमेंट

लखनऊ । सुलॉन एनर्जी लिमिटेड द्वारा कैपस प्लेसमेंट के माध्यम से जी.सी.आर.जी. ग्रुप ऑफ इंस्टीट्यूट्स के पॉलिटेक्निक अंतिम वर्ष के 25 छात्रों का चयन किया गया है। इन छात्रों को कंपनी द्वारा गुणवत्ता, मेंटेनेंस एवं उत्पादन के पदों के लिए चुना गया है। कंपनी ने छात्रों को वार्षिक पैकज रु. 2.3 लाख की प्रेषकश की है और वे सभी छात्र राजस्थान के जैसलमेर में अपनी नौकरी के लिए जाएंगे। यह उपलब्धि हमारे छात्रों की लगन और कड़ी मेहनत के साथ-साथ हमारे संस्थान द्वारा प्रदान की जाने वाली शिक्षा और प्रशिक्षण की गुणवत्ता को भी दर्शाती है। हम चर्चनित छात्रों को हार्दिक बधाई देते हैं और उनकी नई भूमिकाओं में उनकी शानदार सफलता को कामना करते हैं। जी.सी.आर.जी. ग्रुप ऑफ इंस्टीट्यूट्स ने अपने छात्रों के लिए इस प्रकार के अवसर उपलब्ध कराने का सतत प्रयास किया है और आप भी करता रहेगा।

जीसीआरजी के 25 छात्रों का हआ प्लेसमेंट

लखनऊ (सं)। जीसीआरजी यूएफ ऑफ इंस्टीट्यूशन में अंतिम वर्ष के 25 छात्रों को सुजलॉन एनर्जी लिमिटेड में प्लेसमेंट हुआ है। कंपनी ने इन छात्रों को गुणवत्ता, मेन्टेनस एवं उत्पादन के पदों के लिए चुना गया है। चयनित छात्रों को सालाना 2.3 लाख का पैकेज दिया जाएगा। सभी छात्रों को राजस्थान के जैसलमेर में ज्वाइन कराया जाएगा।

जैसेलमेर में ज्वाइन कराया जाएगा। संस्थान के मार्केटिंग हेड विशाल गुप्ता ने बताया कि इतने छात्रों का एक साथ किसी कम्पनी में सिलेक्ट होना बहुत बड़ी बात है। यह छात्रों की लगन और कड़ी मेहनत के साथ-साथ हमारे संस्थान द्वारा प्रदान की जाने वाली शिक्षा और प्रशिक्षण की गुणवत्ता को दर्शाता है। उन्होंने चर्चापत्र छात्रों को बर्धाई देते हुए उज्ज्वल भविष्य की कामना की।



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