

# PIPS EVENT REPORT 2024

## PHARMAGYANAV 2024

A National Conference

*On the Theme*

*“Convergence of Traditional Knowledge and Advanced Technology  
for Drug Discovery”*



*Organised On 20/12/2024, Friday*

Pratiksha Institute of Pharmaceutical Sciences  
Chandrapur Rd, near Central Training Centre, Panikhaiti,  
Assam 781026

No of Participants

**200+**

Prepared by-

Signature

Signature  
Principal, PIPS





# PHARMAGYANAV 2024

A National Conference on

**“Convergence of Traditional Knowledge and  
Advanced Technology for Drug Discovery”**

*Organized by*

**Pratiksha Institute of Pharmaceutical Sciences**

*(under Pratiksha Educational Trust)*

*In Collaboration with*

**Assam Science Technology and Environment Council (ASTEC), Guwahati, Assam**

**DATE : 20 -21 DECEMBER 2024**



VENUE:

**PRATIKSHA INSTITUTE OF PHARMACEUTICAL SCIENCES**

CHANDRAPUR ROAD, PANIKHAITI, GHY-26, ASSAM

## **ABOUT THE EVENT**

The National Conference - PHARMAGYANAV 2024, organized by the Pratiksha Institute of Pharmaceutical Sciences, Guwahati-26, Assam in collaboration with Assam Science Technology and Environment Council (ASTECC) on 20-21 December 2024, focuses on the theme “Convergence of Traditional Knowledge and Advanced Technology for Drug Discovery.” This theme underscored the significant potential of merging ancient traditional wisdom with contemporary technological advancements to transform the field of drug discovery.

The conference offered a platform for researchers, professionals, and students to engage in fruitful discussions, share innovative research, and collaborate on groundbreaking ideas that bridge the gap between traditional and modern approaches in pharmaceutical sciences. The contributions and insights presented in this abstract book reflect the diverse methodologies and perspectives that are shaping the future of drug discovery.

The inaugural session featured the Chief Guest, Prof. Ashok Puranik, Executive Director, AIIMS Guwahati, and the Keynote Speaker, Dr. Hemanta Kumar Sharma, Professor, Department of Pharmaceutical Sciences, Dibrugarh University. Both dignitaries emphasized the critical role of interdisciplinary collaboration in advancing sustainable drug development and fostering innovation in the pharmaceutical sector.

The eminent speakers including Dr. Ajaikumar B. Kunnumakkara, Dr. Amal Bawari, Dr. R. Sankararamakrishnan presented, Dr. Amit Alexander, Dr. Ranjit Mohapatra, Ms. Tahmina Mazumder delivered talks included plenary talks, technical sessions, and panel discussions throughout the two-days conference. A total of 132 papers were received. After an academic review by subject experts, 16 papers have been scheduled for oral presentation, 09 papers for e-Poster and 102 papers have been scheduled for poster presentation. The papers received were from various field aligning with the sub themes of the conference pharmacological activity, Natural product isolation and discovery, Pharmaceutical and Cosmeceutical formulation approaches, Molecular simulation and computational studies Novel drug delivery systems, Biotechnology, Nutraceuticals to name a few.

## **DAY 1 (20/12/2024)**

**Inaugural Session:** The inaugural session featured the Chief Guest, *Prof. Ashok Puranik*, Executive Director, AIIMS Guwahati, and the Keynote Speaker, *Dr. Hemanta Kumar Sharma*, Professor, Department of Pharmaceutical Sciences, Dibrugarh University. Both dignitaries emphasized the critical role of interdisciplinary collaboration in advancing sustainable drug development and fostering innovation in the pharmaceutical sector.

*Dr. Pramod Kumar Sharma*, CMD of Pratiksha Group and Chief Patron of Pharmagyanav 2024, emphasized the importance of interdisciplinary research and educational approaches in both traditional and advanced drug discovery techniques. He highlighted the conference's critical role in accelerating progress in pharmaceutical research, particularly in the areas of bioactive natural products discovery and artificial intelligence applications. Dr. Sharma encouraged active participation from researchers, academicians, and industry experts to address unique challenges and opportunities in the pharmaceutical sector.

*Prof. (Dr.) Satyendra Deka*, Principal cum Professor at the Pratiksha Institute of Pharmaceutical Sciences and Chairperson of Pharmagyanav 2024, extended a warm welcome to all participants. He underlined the conference's aim to bridge traditional pharmaceutical knowledge with modern technological advancements for sustainable drug development. Prof. Deka highlighted the importance of fostering synergies between classical medicine, cutting-edge technologies, and agri-biotech practices for groundbreaking advancements in drug discovery.

## **SCIENTIFIC SESSION-I:**

### **SPEAKER 1**



**Dr. Ajaikumar B. Kunnumakkara**

The *Day 1* kicked off with the first presentation from Dr. Ajaikumar B. Kunnumakkara, Professor, Department of Biosciences and Bioengineering, Indian Institute of Technology Guwahati.

Dr. Ajaikumar B. Kunnumakkara is a distinguished full Professor in the Department of Biosciences and Bioengineering at the Indian Institute of Technology Guwahati (IITG), located in Assam, India. Additionally, he holds the esteemed position of Honorary Chair Professor in Nanoscience and Nanotechnology. He is additionally a visiting scientist at the National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan, and the National Institute of Material Science, Tsukuba, Japan. He also serves as a Joint faculty member in the Food Science and Technology Program at Gifu University, Japan.

With over two decades of experience in cancer research, Dr. Kunnumakkara has authored over 300 articles encompassing original research, reviews, and book chapters. His work has garnered widespread recognition, evident from his citation count exceeding 54,000 and an h-index surpassing 83. His contributions to the field have been acknowledged through numerous awards, including the recent accolade of "The Most Research-Proficient Faculty of India in the Field of Medicine" conferred by Career 360, Research.com Biology and Biochemistry in India Leader Award and Highly Ranked Scholar by Scholar GPS. He has been listed as the most highly cited Scientist in Biological science in India by AD Scientific Index, Research.com and Scholar GPS.

He presented a talk on the title: *"Exploring the Role of Natural Products in Preventing and Treating Diseases: Current Insights and Future Horizons."*

He stated the following words: "It is widely recognized that both communicable and non-communicable diseases pose major challenges to global healthcare systems. A significant proportion of these health issues, estimated to be around 85%, can be traced back to environmental factors. As a result, adopting a healthy lifestyle emerges as a critical preventative strategy for mitigating the impact of these diseases." Numerous bioactive compounds, often referred to as nutraceuticals, have been extracted from these natural sources, including well-known agents such as curcumin, piperine, resveratrol, isothiocyanates, EGCG (Epigallocatechin gallate), quercetin, and sulforaphane.

These compounds have shown promising disease-preventive and therapeutic properties, offering potential benefits against a wide array of human health conditions. "Despite the promising therapeutic potential of these bioactive agents, a significant limitation remains: many of these compounds suffer from poor bioavailability and limited absorption in the body. However, advancements in modern science have led to the development of novel formulations that help overcome these barriers, enhancing the bioavailability and effectiveness of these nutraceuticals."

Thus, these natural compounds hold tremendous promise for improving human health by preventing and treating chronic diseases. The presentation explored the significance of select nutraceuticals, examining their biological activities and their potential applications in promoting overall well-being and advancing healthcare solutions. He stressed on his research work on curcumin, and made aware that healthy habits of consuming home-made food with curcumin is one of the healthiest and wisest way of the traditional system of medicine. The audience were overwhelmed with the response and he was greeted with positive feedback and wished everyone well.



## SPEAKER 2



### **Dr. R. Sankararamakrishnan**

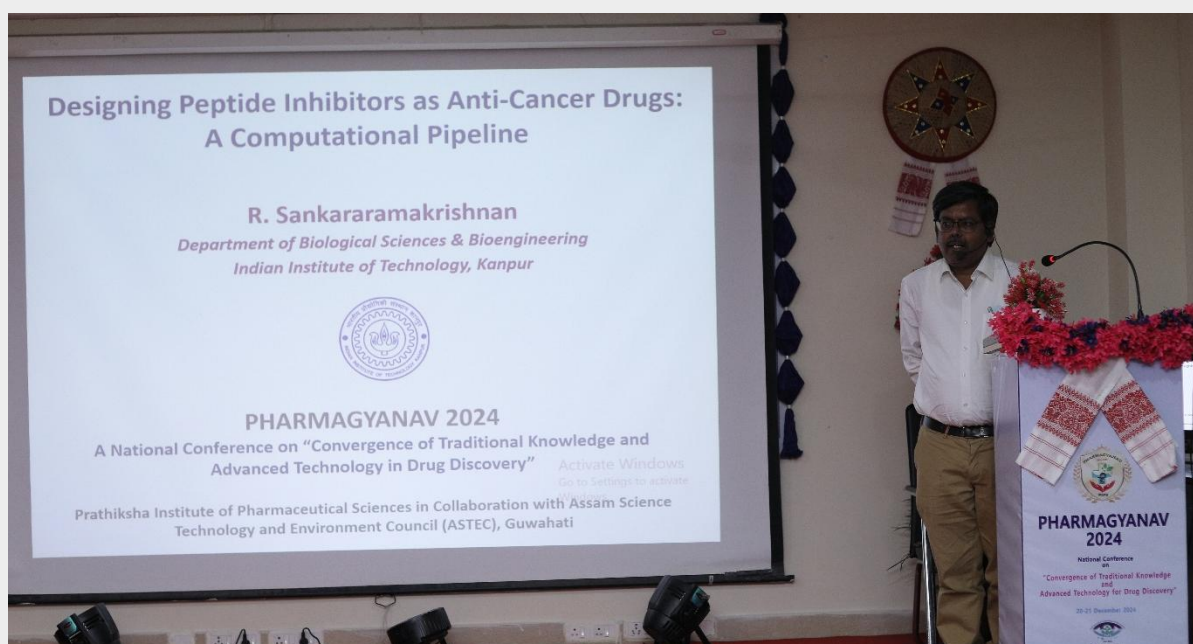
The second technical session was taken up by Dr. R. Sankararamakrishnan, Professor, Department of Biological Sciences and Bioengineering, Indian Institute of Technology Kanpur.

Dr. Sankararamakrishnan's pre-doctoral studies were at the Indian Institute of Science, Bangalore. He received post-doctoral training in computational biology at University of Oxford and University of Illinois, Urbana-Champaign. He was serving as a Research Assistant Professor at the Mount Sinai School of Medicine, New York, before joining the BSBE department in April, 2002.

The Title presented was entitled “*Designing Peptide Inhibitors as Anti-Cancer Drugs: A Computational Pipeline*”

The presentation was very engaging and was profound. He stressed on the fact that Humans have used natural products in medicines to alleviate and treat diseases for hundreds and thousands of years. Traditional Chinese medicine, Ayurveda and other forms of traditional medicines have been practiced in many countries for many centuries. In traditional medicine, a single herb or formula may contain many phytochemical constituents. Synergetic effects may exist among these compounds.

He gave an introduction to proteins and the protein three-dimensional structures. He also talked on ion channels which are under-utilized as drug targets. He particularly focused on the two types of apoptotic pathways. Bcl-2 family of proteins is involved in intrinsic apoptotic pathway. Finally, he discussed the computational pipeline developed in our laboratory to design new peptide inhibitors that can antagonize the anti-apoptotic Bcl-2 proteins. He demonstrated that the newly designed peptide inhibitors have the potential to be anti-cancer drugs. The talk was received well from the student and faculty fraternity, there was an exchange of thoughts and ideas through the QA Session with the eminent speaker.



### **SPEAKER 3:**



#### **Dr. Amal Bawari**

The third technical session was taken up by Dr. Amal Bawari, Botanist, North Eastern Institute of Ayurveda. Dr. Amal Bawari, is presently Botanist (Scientist-C) in the North Eastern Institute of Ayurveda & Folk Medicine Research, Pasighat (An Autonomous National Institute) under Ministry of Ayush, Govt. of India. He is a plant taxonomist and ethnobotanist obtained his Ph.D. from North Eastern Regional Institute of Science & Technology, Arunachal Pradesh.

He is a recipient of the prestigious DST National Post-Doctoral Fellowship and carried out his post-doctoral research work in Department of Botany, Gauhati University. He also received prestigious Rufford Small Grant from Rufford Foundation, United Kingdom for his research work in the field of biodiversity Conservation. He has published 50 research articles in peer-reviewed national and international journals and 10 book chapters. He has also published 1 Book Flora of BTAD (Bodoland Territorial Area Districts, Assam) in 4 volumes and edited 4 books.

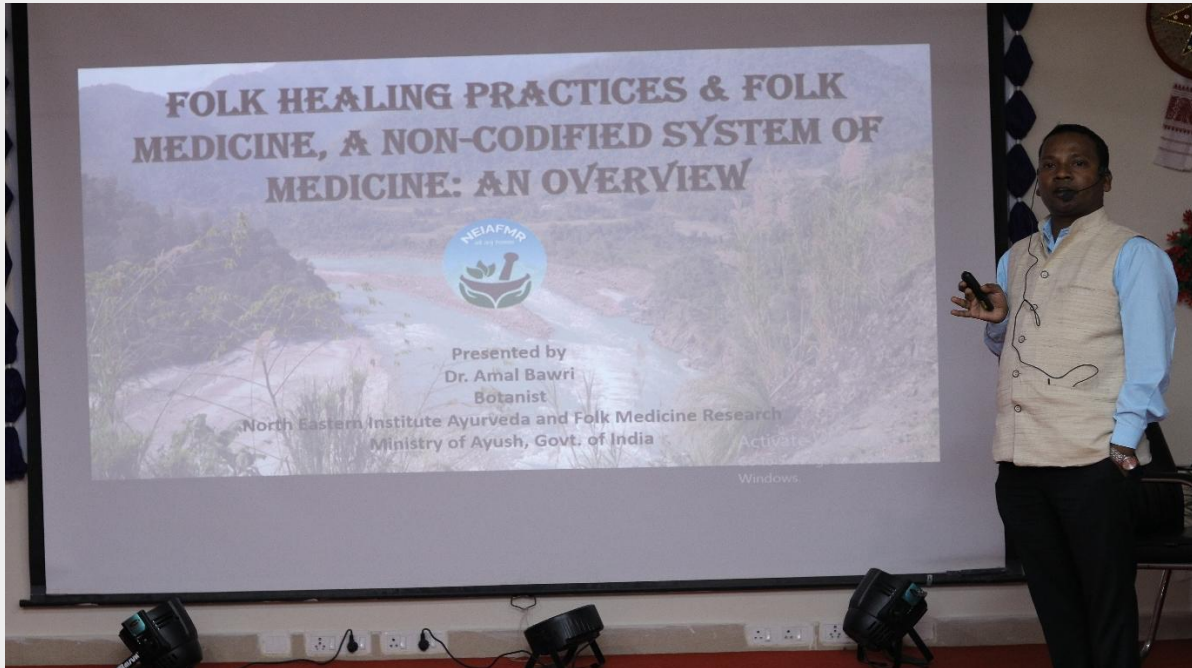
He discovered a few new plant species, which are traditionally used in folk medicine. He is also a reviewer of many international and national peer-reviewed journals and funding agencies. Dr Amal gave a talk on the topic “*Folk healing practices & folk medicine, a non-codified system of medicine: An overview*”

He emphasized on folk healing practices & medicine is a set of dynamic medicinal practices, based on the principle of trial and error, and on empirical evidence, which has evolved over a period of time within a unique socio-cultural and physical environment. He spoke on non-codified system. The system which developed from primitive man’s reactions to natural events, which is diverse and varies with geography, local flora and culture. It has developed in accordance with primary needs and locally available resources of a particular region. The system differs from one region to the other and is known by various names like indigenous medicine, ethno-medicine, bush-medicine, little traditions, folk/folklore medicine and many more. However, the practice is yet to be formalized and remains in non-codified form. This system is diminishing with time due to various factors like inadequate support from the



legislation. Therefore, proper documentation is needed to preserve this ancient, non-codified traditional knowledge.

The students and the faculty liked the presentation and the feedback on the topic presented was well appreciated by all the attendees.



## ORAL PRESENTATION

Around fifteen plus participants from different cities of India presented their research and review works through oral presentation platform, and Dr. R. Sankararamakrishnan and Dr. Amal Bawari esteemed panel of judges.



## DAY 2 (21/12/2024)

### SCIENTIFIC SESSION-II:

#### SPEAKER 4



#### **Dr. Amit Alexander**

The third technical session was taken up by Dr. Amit Alexander, Associate Professor, Department of Pharmaceutics, and Project Coordinator, Bio-NEST Incubation Centre, NIPER–Guwahati.

Dr. Amit Alexander is presently working as an Associate Professor in the Department of Pharmaceutics, National Institute of Pharmaceutical Education and Research (NIPER-Guwahati), under the aegis of the Department of Pharmaceutics (DoP), Ministry of Chemicals and Fertilizers, Government of India (GoI). Dr. Alexander has teaching and research experience of more than 16 years. To his credit, he has more than 175 scientific publications with a cumulative impact factor of 606.67 in High-impact factor, SCI-indexed, peer-review journals. He has 14 papers published in the Journal of Controlled Release, Elsevier having an Impact Factor 10.8. His publications Google Scholar citations are 8528, H index: 48, and i10 index: 111.

Dr. Alexander is also serving as Co-Ordinator of Bio-NEST Incubation Center at NIPER-G, a project funded by DBT/BIRAC, GoI, to encourage/help the traditional healers for scientific standardization and commercialization of their products while incubating the other researchers by offering appropriate mentoring and infrastructural support. He has been recognized as one of the Top 2% Scientific Ranking Worldwide by Stanford University for four consequent years (2020, 2021, 2022, and 2023).

His key research areas are the formulation of Novel Drug Delivery Systems for Alzheimer's Disease and tumor targeting. His lab is also working on the formulation of In-Situ Injectable Hydrogels and synthesis of mesoporous silica nanoparticles, including lipid nanoparticles, etc., with expertise in Pharmacokinetic assessments, QbD, and other statistical designs. The title of his presentation was "*Nanoparticle-Based Drug Delivery Systems: A Paradigm Shift*".

He emphasized on the fact that nanoparticle-based drug delivery systems offer a revolutionary approach to enhance therapeutic efficacy and reduce side effects. By manipulating matter at

the nanoscale, these systems can target specific cells, control drug release, and improve drug solubility. Liposomes, polymeric nanoparticles, metallic nanoparticles, and ceramic nanoparticles are some of the commonly used nanocarriers. These systems can be functionalized with targeting ligands to improve specificity and reduce off target effects. While significant progress has been made, challenges such as toxicity, scalability, and regulatory hurdles remain. Continued research and development are essential to translate these promising technologies into clinical applications.



## **SPEAKER 5**



### **Dr. Ranjit Mohapatra**

The fifth technical session was taken up by Dr. Ranjit Mohapatra, Site Head, AVP - Operation, Sun Pharma, Guwahati, Assam.

*Dr. Ranjit Mohapatra* is a seasoned Pharmacy professional with 28 years of experience in the pharmaceutical industry. Holding a Master of Pharmacy (M Pharm), an MBA, and a Doctor of Philosophy in Pharmacy, he has built a career specializing in Pharmaceutical Greenfield

Projects, Operations, Regulatory Compliance, and New Product Introductions, including being a key player in First to Launch initiatives. Dr. Mohapatra is committed to implementing best practices, enhancing capacities, and driving business excellence. He is an active member of the Indian Forum of Quality Management (IFQM), working to elevate the Indian pharmaceutical sector to international standards. Currently, Ranjit serves as the Site Head and AVP-Operations at Sun Pharma in Guwahati, where he continues to lead operations with a focus on quality and growth.

The presented entitled was “*Volume to Value: Considering focus areas the key aspect for transitions are-Regulatory Simplification, Industry-Academia Collaboration, Innovative Mindsets, Compliance and Global Expansion.*”

He spoke on the transition from volume to value in the pharmaceutical industry emphasizes a strategic shift towards long-term sustainability and innovation. Key focus areas driving this transformation include regulatory simplification, which aims to streamline compliance processes and accelerate product development. Industry academia collaboration fosters a strong pipeline of research and innovation, bridging the gap between scientific advancements and practical applications.

Cultivating innovative mindsets is crucial for developing breakthrough solutions that meet evolving healthcare needs. Finally, global expansion remains a central goal, enabling the industry to reach wider markets and address diverse patient needs. These interconnected elements collectively support the transition to a value driven model, enhancing industry resilience and global competitiveness. The session was a fruitful and interesting one, the students learned about the various scopes of pharmaceutical industry and the faculties discussed on means on how to collaborate, link the syllabus of the students with the practical setting of a pharmaceutical industry. The session ended on a high note.

#### **SPEAKER 6**



**Ms. Tahmina Mazumder**

Ms. Tahmina Mazumder is the Founder and Director, Prowessis AI Solutions, Guwahati, Assam. She is a Biotechnology graduate specialized in computational biology, image analysis, computer vision, and AI-based machine learning and deep learning. Proficient in Python

programming with experience in building CNN models and applying advanced machine learning algorithms. She can demonstrate strong analytical problem-solving skills and a proven track record in many overseeing research projects. Currently the Founder of Prowessis AI Solutions, providing AI-driven, solutions for mutation detection, cancer diagnostics, and bioinformatics. She has earned a Grade "A" in CSIR- summer research training program, 2020, CSIR-NEIST. Also, a Grade "A+" in advanced training program on "Molecular Biology", Rapture Biotech, Pune. Her expertise is on Cancer Research

• Image Analysis • Image Processing • Feature extraction • Machine Learning

The title of her presentation was Decoding the visuals.

She explained how AI has emerged as a transformative solution in drug discovery and personalized medicine, significantly reducing costs and timelines by enabling more efficient processes. By analyzing patient-specific data and identifying optimal drug candidates, AI enhances drug development and treatment strategies. The talk explored the role of AI in drug discovery, with a focus on personalized drug design, where intelligent algorithms analyze molecular structures, genetic information, and clinical data to create targeted therapies. Additionally, we will discuss how AI-driven predictive models are being used to process large-scale medical datasets, facilitating faster drug development and more precise patient care.

The talk also highlighted the use of AI in improving healthcare workflows, optimizing administrative tasks, and minimizing diagnostic errors, ultimately leading to better clinical outcomes by exploring challenges in AI adoption, such as ethical considerations, data privacy, and the need for effective human-AI collaboration. Drawing on recent research, AI's significant potential in reshaping healthcare and drug discovery, making it more efficient, personalized, and accurate. The students and faculty members were enthralled with her presentation and they had asked her many queries and they were impressed and inspired with the overall presentation delivered.



### **e-Poster presentation:**

Around ten plus participants from different states (outside of Assam) presented their research works through e-poster presentation platform (online mode), and *Dr. Saikat Sen* esteemed judges.

### **Poster presentation:**

Around hundred plus participants from different cities of India presented their research works through poster presentation platform, and Dr. Saikat Sen, Dr. Atanu Bhattacharya, Dr. Chandrajit Dohutia and Dr. Anupam Sarma were the esteemed panel of judges.



### **Valedictory Session**

After the conclusion of the technical sessions, the most awaited program was the valedictory session in which the delegates had an opportunity to see the showcasing talent of the students through classical dances and through a group song. The program had a series of events including felicitation of the eminent guests, the panel of judges in the oral and poster competition and the keynote speaker. An encouraging and thought-provoking talk was delivered by Dr. Chandrajit Dohutia, Inspector of Drugs, Barpeta, Assam on the issues pertaining to growth and the integrity of the profession. The session was well received with the group song which created a lively atmosphere and the classical dance portraying the roots of the cultural heritage.

The distribution of the prizes and certificates was also completed at this juncture, whereby the best presenters in the oral, e-poster and poster presentation were awarded in their own category of UG and PG, research scholars. The delegates were thrilled to see themselves as recipients of these awards and inspired the others as well, to work harder in improving their craft.

The vote of thanks was delivered by Mr. Arup Chakraborty on behalf of the institution. The program ended with the national anthem.



**Conclusion of the Conference:**

The National Conference, PHARMAGYANAV 2024, organized by the Pratiksha Institute of Pharmaceutical Sciences, Guwahati in collaboration with Assam Science Technology and

Environment Council (ASTECC) Guwahati on December 20–21, 2024, successfully showcased the convergence of traditional knowledge and advanced technology in the realm of drug discovery. The event served as an exceptional platform for fostering interdisciplinary collaborations, exchanging innovative ideas, and advancing research in pharmaceutical sciences.

The diverse array of abstracts presented, spanning pharmacological activities, natural product discovery, novel drug delivery systems, and computational studies, highlights the multidisciplinary nature of modern drug discovery efforts. The inclusion of 132 plus research contributions, meticulously reviewed by subject experts and categorized into oral, poster, and e-poster presentations, is a testament to the academic rigor and diversity of the conference.

This conference not only celebrated the synergy between traditional and modern methodologies but also inspired participants to embrace integrative approaches that will shape the future of healthcare. PHARMAGYANAV 2024 has undoubtedly left a lasting impact by encouraging meaningful dialogue, nurturing young researchers, and driving innovation in the pharmaceutical sciences.