

PREFACE

The 4th International Conference on Pharmaceutical Updates (4th ICPU) with topic "**Cosmeceutical Innovation: An Update on Emerging Trends**," was held on August 7-8, 2024 at Universitas Muhammadiyah Yogyakarta, served as a pivotal platform for researchers, practitioners, academician, and industry leaders to converge and exchange insights on the latest advancements in the field of cosmeceuticals and other related drug developments as well as its evaluation. This gathering highlighted the dynamic nature of the industry and current studies, focusing on essential themes such as active ingredient discovery, treatment evaluation updates, drug development, the microbiome's role in health, new treatment approaches, and the potential applications of plant biotechnology. The conference aimed not only to disseminate knowledge but also to foster collaborations that could lead to innovative solutions addressing contemporary challenges in pharmaceutical products and pharmaceutical practices. We express our gratitude to the distinguished speakers and acknowledge the enthusiasm of the participants. Your contributions, dissemination of knowledge, and involvement are much valued. We would like to express our gratitude to EDP Sciences & Bio Web of Conferences, our publishing partner, for their comprehensive cooperation in the publication process of the 4th ICPU 2024, particularly in the selection of our top 21 papers.

In the field of active ingredient discovery, researchers presented their findings on compounds derived from natural sources and synthetic processes that have shown promising results in drug development processes by identifying novel therapeutics, ensuring safety and efficacy, enhancing formulations, and leveraging advanced technologies. Furthermore, discussions on plant biotechnology showcased its potential applications in drug innovation. The integration of biotechnology in drug development promises to optimize resource utilization while ensuring sustainable practices. Participants engaged in dialogues about ethical sourcing, environmental impacts, and consumer preferences, emphasizing a holistic approach to product development that aligns with contemporary sustainability goals.

The conference provided an update on treatment evaluation methodologies that are crucial for assessing the effectiveness of treatment and pharmacy practices. Emphasis was placed on evidence-based approaches to evaluate treatment outcomes, including patient-reported outcomes and real-world evidence studies. The role of the microbiome in health was another significant topic addressed at the conference. Incorporating microbiome concepts into pharmacy practice is essential for preparing the pharmacists to engage with this emerging field. This area of research opens up exciting avenues for developing products that not only treat existing conditions but also promote overall wellness through microbiome modulation.

This event successfully gathering the 79 study reports and presenters. The double-blind peer review process was conducted to competitively select the best 21 papers for proceeding publications. As we move forward, it is imperative that we continue to embrace interdisciplinary approaches and leverage cutting-edge research to address consumer demands while prioritizing safety and efficacy in product development. Hopefully, this proceeding could serve as a valuable resource for the ongoing studies.

Best Regards,
4th ICPU Organizing Committees
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