13TH WORLD CONFERENCE ON PHARMACEUTICAL SCIENCE & DRUG Manufacturing

WCPD 2025

13th World Conference on Pharmaceutical Science and Drug Manufacturing

21st – 22nd August 2025 **Jakarta, Indonesia**

Organized by

Association of Pharmaceutical Research &
IFERP Life Sciences-Formerly Bioleages

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13th WORLD CONFERENCE ON PHARMACEUTICAL SCIENCE & DRUG Manufacturing

13th World Conference on Pharmaceutical Science and Drug Manufacturing (WCPD-2025), Jakarta, Indonesia

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Table of Contents

Conference Theme:

“Revolutionizing Pharmaceutical Science: From Research to Manufacturing Excellence”

Preface

We are delighted to extend a warm welcome to all participants attending 13th World Conference on Pharmaceutical Science and Drug Manufacturing (WCPD-2025), taking place in Jakarta, Indonesia on 21st & 22nd August, 2025. This conference provides a vital platform for researchers, students, academicians, and industry professionals from all over the world to share their latest research results and development activities in the field of Pharmaceutical Science and Drug Manufacturing. It offers delegates an opportunity to exchange new ideas and experiences, establish business or research relationships, and explore global collaborations.

The proceedings for WCPD-2025 contain the most up-to-date, comprehensive, and globally relevant knowledge in the field of Pharmaceutical Science and Drug Manufacturing. All submitted papers were subject to rigorous peer-reviewing by 2–4 expert referees, and the papers included in these proceedings have been selected for their quality and relevance to the conference. We are confident that these proceedings will not only provide readers with a broad overview of the latest research results in Pharmaceutical Science and Drug Manufacturing but also serve as a valuable sussssmmary and reference for further research in these fields.

We are grateful for the support of many universities and research institutes, whose contributions were vital to the success of this conference. We extend our sincerest gratitude and highest respect to the many professors who played an important role in the review process, providing valuable feedback and suggestions to authors to improve their work. We also extend our appreciation to the external reviewers for providing additional support in the review process and to the authors for contributing their research results to the WCPD-2025.

We express our gratitude to the keynote and individual speakers and all participating authors for their dedication and hard work. We also sincerely appreciate the efforts of the technical program committee and all reviewers, whose contributions made this conference possible. Finally, we extend our thanks to all the referees for their constructive comments on all papers, and we express our deepest gratitude to the organizing committee for their tireless work in making this conference a reality.

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About WCPD 2025

Announcing 13th World Conference on Pharmaceutical Science and Drug Manufacturing, set to take place on the 21st and 22nd August 2025, in Jakarta, Indonesia. The pharmaceutical industry is facing a multitude of challenges such as operational complexity, the need to adapt to new therapeutic modalities, and the shift from treatment to prevention. To meet evolving demands on healthcare, enhance patient outcomes, and promote advances in medical science, the pharmaceutical sector continually needs to create breakthroughs. In this conference, the challenges associated with pharmaceutical research and drug production will be discussed and technologies that can be implemented will be explored. In our engagement with pharmaceutical conferences over time, we have collaborated to resolve various issues and progress with numerous impactful solutions. As the experts involved, attendees can expect to gain valuable insights on industry trends and potential solutions for ongoing issues. Confabulation with the experts in this platform will help us to know how to lead forward in global healthcare in the future by taking a more strategic, long-term, and integrated approach to operations. Let's be a part of this experience to tackle the most pressing challenges faced today and explore how cutting-edge technologies can revolutionize the industry.

Objective of the Conference

13th World Conference on Pharmaceutical Science and Drug Manufacturing (WCPD-2025) aims to foster dialogue and collaboration among researchers, practitioners, and policymakers focused on innovative approaches to global development. Set in Jakarta, Indonesia, on August 21st and 22nd, 2025, this conference will explore groundbreaking solutions in life sciences and healthcare that address pressing sustainability challenges. Participants will engage in knowledge sharing, showcasing cutting-edge research and technological advancements that contribute to sustainable practices in health and environmental sectors. By connecting diverse stakeholders, WCPD-2025 seeks to inspire actionable strategies that promote health equity, environmental stewardship, and community resilience, ultimately supporting the United Nations' Sustainable Development Goals.

Scope of the Conference

- Pharmaceutical Research and Development
- Drug Delivery Systems
- Pharmacology and Pharmacokinetics
- Pharmaceutical Biotechnology
- Quality Control and Regulatory Affairs
- Formulation Science and Development
- Pharmaceutical Supply Chain and Distribution
- Pharmaceutical Marketing and Commercialization

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About Life Sciences

IFERP Life Science is a globally recognized professional association meant for research, innovation and development in the field of life sciences and medical sciences . It serves to propel and fuel all innovative works of research with immense potential in the fields of Healthcare, Life Sciences, Pharmaceutical Sciences, Medical Sciences, Food & Nutrition, Environmental Science, Oncology, Cardiology, Nursing, Microbiology, Physiotherapy, Dentistry and many more. IFERP Life Science has been directly responsible for a significant amount of the revolutionary developments that have taken place in these fields over the past few decades.

IFERP Life Science is a specialized platform that supports life science and medical professionals in advancing their careers and research impact. Our tailored solutions include international conferences, Faculty Development Programs, Webinars, author services, membership and scientific communications, designed to foster collaboration and knowledge-sharing within the global medical community

Our Mission

- Promote global research, innovation and development in life science, medical science, environmental science, pharmaceutical science and health care, to attain sustainable development goals (SDG's) for universal benefit.
- Advance Life Science & Medical Science for societal service.
- To facilitate knowledge exchange and growth through our professional activities and scientific conferences.

Our Vision

- An inclusive global scientific community promotes excellence in life science and medical events, author services, membership, informed decisions, and actions worldwide.

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From the Director, IFERP

Mr. A. Siddth Kumar Chhajer

Managing Director & Founder,
IFERP, Technoarete Group

On behalf of Institute For Educational Research and Publications (IFERP) & the organizing Committee, I express my hearty gratitude to the Participants, Keynote Speakers, Delegates, Reviewers and Researchers.

The goal of the 13th World Conference on Pharmaceutical Science and Drug Manufacturing (WCPD-2025) is to provide knowledge enrichment and innovative technical exchange between international researchers or scholars and practitioners from the academia and industries of Pharmaceutical Science and Drug Manufacturing.

This conference creates solutions in different ways and to share innovative ideas in the Pharmaceutical Science and Drug Manufacturing fields. WCPD-2025 provides a world class stage to the Researchers, Professionals, Scientists, Academicians and Students to engage in very challenging conversations, assess the current body of research and determine knowledge and capability gaps.

13th World Conference on Pharmaceutical Science and Drug Manufacturing (WCPD-2025) will explore the new horizons of innovations from distinguished Researchers, Scientists and Eminent Authors in academia and industry working for the advancements in Food and Nutrition fields from all over the world. WCPD-2025 hopes to set the perfect platform for participants to establish careers as successful and globally renowned specialists in the Pharmaceutical Science and Drug Manufacturing fields.

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From the Chief Executive, IFERP

Mr. Rudra Bhanu Satpathy

Chief Executive Officer & Founder,
IFERP, Technoarete Group

IFERP is hosting the 13th World Conference on Pharmaceutical Science and Drug Manufacturing (WCPD-2025) this year in month of August, 2025.

The main objective of WCPD-2025 is to grant the amazing opportunity to learn about groundbreaking developments in modern industry, talk through difficult workplace scenarios with peers who experience the same pain points and experience enormous growth and development as a professional. There will be no shortage of continuous networking opportunities and informational sessions.

The sessions serve as an excellent opportunity to soak up information from widely respected experts. Connecting with fellow professionals and sharing the success stories of your firm is an excellent way to build relations and become known as a thought leader. I express my hearty gratitude to all my Colleagues, Staffs, Professors, Reviewers and Members of Organizing Committee for their hearty and dedicated support to make this conference successful. I am also thankful to all our delegates for their pain staking effort to make this conference successful.

ISBN: 978-93-92106-59-0

Keynote Speaker

Dr. Palanirajan Vijayaraj Kumar

Head of the Department,
Department of Pharmaceutical Technology,
UCSI University, Malaysia

Professor Dr Palanirajan Vijayaraj Kumar is a Head of Pharmaceutical Technology Department, Faculty of Pharmaceutical Sciences at UCSI University. He has completed the Ph.D in Dr. HS Gour University (A Central University, India) in 2007. After his PhD he has continued teaching and research career and guided several undergraduate, postgraduate and 10 PhD student research projects. He has 18 years of experience in both teaching and research, and he has published 67 peer-reviewed papers in addition to two patents. In 2010, his contributions to scientific society were recognized with Pharma Help Line Society, India and he have received Young Scientist Award. Further, his continuous contribution in research, he has received the Promising researcher Award from UCSI University in 2016, Malaysia. In 2017, he received a Brown medal for developing Carica Papaya capsules for dengue patients from the Ministry of Higher Education, Malaysia. In 2018 he has received an InnoCentive Award from USA, for developing Novel Cardiac-Specific Ligands for Targeted Drug Delivery sponsored by SERVIER international and independent pharmaceutical company governed by a non-profit foundation from France. In 2020, one of his formulations received Silver Medal in ITEX2020 (32nd International Invention, Innovation Market Place for Innovation and Technology Exhibition, Malaysia). Again in 2021 MTE one his team research product “Transdermal Microneedles for a Recombinant Human Keratinocyte Growth Factor” received silver medal and Award of Merit in conjunction with The Malaysia-Croatia Technology Exchange. Also, his team members developed the mimotope-based vaccine delivery system for treating KRAS-positive colorectal cancer and the chitosan nanoparticle formulation for use in treating acute lung injury, which is protected under a Malaysian patent.

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Keynote Speaker

Dr. Nalini Kanta Sahoo

Dean,
Faculty of Pharmaceutical sciences,
RAMA University, India

Prof. (Dr.) Nalini Kanta Sahoo is an accomplished academician and researcher with over 18 years of experience in academics, administration, training, accreditation, and research. He currently serves as Director and Principal at MIT College of Pharmacy, Moradabad (affiliated to AKTU), and previously held the role of Principal at SRM College of Pharmacy, Modinagar. He is also an Adjunct and Visiting Professor at D.Y. Patil Deemed University, Navi Mumbai.

Dr. Sahoo holds a Ph.D. from Siksha 'O' Anusandhan University (NIRF Rank 19) and completed a postdoctoral fellowship at the Industrial University of Ho Chi Minh City, Vietnam. He has authored 88+ research articles, published 13 patents (with six design patents granted), and contributed to several internationally acclaimed books and chapters. He is a recipient of numerous awards including the Best Teacher Award (ZIIEI), Best Professor in Pharmacy (ITAP), and the InSc HOD of the Year Award. Dr. Sahoo is involved in several advisory and editorial boards worldwide and actively contributes as a corporate trainer, NBA/NAAC coordinator, and entrepreneurship educator.

He is a lifetime member of several prestigious academic and scientific organizations and continues to play a key role in research, innovation, and academic excellence in the pharmaceutical sciences.

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Keynote Speaker

Dr. Drs. Yufri Aldi

Vice-Dean ,
Faculty of Pharmacy, Andalas University,
Padang, Indonesia

Prof. Dr. apt. Drs. Yufri Aldi, M.Si, is a Professor in Pharmacology Research focusing on Pharmacology, Immunology, and Biomedicine with a speciality in the search for new drugs from natural ingredients that are immunomodulatory to the body's immunity. As a Pharmacologist, Prof. Dr. apt. Yufri Aldi, M.Si, also conducts research examining drug safety in pre-clinical and clinical trials. The results of this research will produce phytopharmaceutical drugs that can increase the body's immunity, which is a substantial contribution to human life. In addition, Prof. Dr. apt. Drs, Yufri Aldi, M.Si. also conducts Clinical Pharmacy research that discusses the effects of drugs and their interactions on patients and their rationale.

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Keynote Speaker

Apt. Diana Laila Ramatillah

Vice Rector I for Academic Affair & Professor, Department of Clinical Pharmacy, Universitas Agustus, Jakarta, Indonesia

Prof. apt. Diana Laila Ramatillah, M.Farm, Ph.D., earned her doctorate from Universiti Sains Malaysia. Since 2020, she has served as Vice Rector I for Academic Affairs at Universitas 17 Agustus 1945 Jakarta. With over a decade of experience in academic management, she has held various leadership roles as a faculty member and head of the pharmacy department.Prof. Diana has an extensive publication record, authoring more than 50 research papers and 90 case reports in both national and international journals, including those indexed in Scopus and the Thomson Reuters Web of Science. She is also the author of six books, four of which focus on clinical pharmacy.In addition to her research contributions, Prof. Diana has held editorial responsibilities as managing editor for both national and international reputable journals. She is an active member of a professional pharmacy organization in Indonesia and frequently shares her expertise as a speaker at national and international forums.Her research has been recognized and supported through five government-funded grants in clinical pharmacy. She has also served as an international lecturer in pharmacy at UCSI University in Malaysia. Notably, she was one of three judges selected by the Ministry of Higher Education (MOHE) for the World Class Program. Prof. Diana contributes to national academic development as a reviewer for lecturer promotions to the highest academic ranks within MOHE and for national journal accreditation. She holds two patents related to nonalcoholic fatty liver disease. Under her supervision, many pharmacy graduates from her university have successfully published in reputable journals.She leads an international research team, and their work was awarded Best Paper at the FIP (International Pharmaceutical Federation) poster presentation.

ISBN: 978-93-92106-59-0

Keynote Speaker

Dr. Sandile Khamanga

Dean, Faculty of Pharmacy,
Rhodes University,
South Africa

Sandile Khamanga is an Associate Professor in Pharmaceutics and currently serves as the Dean of the Faculty of Pharmacy at Rhodes University. He has more than 15 years of teaching and research experience. He completed a Bachelor of Science in Mathematics and Chemistry at the University of Swaziland (ESwatini), a BPharm, MSc (Pharm) and a PhD in Pharmaceutics at Rhodes University. He has worked as an academic for close to 20 years.

His research interests are varied, but are primarily focused on advanced drug delivery systems, medicines registration in sub Saharan Africa, and theoretical and practical analysis of patient waiting time forecasting using statistical techniques.

He has effectively delivered in various academic and leadership roles. He has supervised more than 35 MSc (Pharm) and PhD students to successful completion, all of whom are now further developing their careers in the different sectors of pharmacy. He has authored scientific papers, and presentations on the topics of pharmaceutical formulation, and biopharmaceutics.

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Keynote Speaker

Mr. Mahmoud Abbas

Lawyer and university Professor,
President of Medical Ethics and Law
Research Center, Shahid Beheshti University
of Medical Sciences, Tehran, Iran

ISBN: 978-93-92106-59-0

Plenary Speaker

Prof. Sharadendu Bali, MS (General Surgery), PhD (Medical Biochemistry), is a Professor of Surgery at Tirthankar Mahavir Medical College, Moradabad. With an extensive publication record of 64 works and more than 36,000 reads, his research spans general surgery, immunology, Ayurveda, and phytochemicals. He has explored topics ranging from brain-targeted phytochemical delivery to Ayurvedic formulations and their health effects, showcasing a remarkable breadth of interdisciplinary work.

Dr. Sharadendu Bali

Professor General Surgery,
Teerthankar Mahavir Medical College,
Moradabad, India

ISBN: 978-93-92106-59-0

Session Speaker

Dr. Palanisamy Sivanandy

Programme Director - Master in Pharmacy Practice, Senior Lecturer,
School of Pharmacy, IMU University,
Malaysia

Dr. Palanisamy Sivanandy is an eminent academician and researcher with more than 19 years of teaching and research experience. He has more than 27 years of experience in the pharmacy field. Currently, Dr Palanisamy has been working as a Programme Director at the International Medical University, Kuala Lumpur, Malaysia since 2014. He started his career as a Dispensing pharmacist in the year 1997 as a Diploma Pharmacist; in 2005 he completed his Pharmacy Under graduation (B.Pharm) from the Madurai Medical College, Tamilnadu; in 2007 he obtained his Post Graduation (M.Pharm) in Pharmacy Practice from Sri Ramakrishna Institute of Paramedical Sciences, Coimbatore, Tamilnadu. He completed his Ph.D., in the year 2013 from the prestigious Tamil Nadu Dr. MGR Medical University, Chennai, and the Good Clinical Practice Licensure Exam from the Ministry of Health (MoH), Malaysia in 2014. He has published more than 100 research and review papers in various national and internationally indexed peer-reviewed journals and has been serving as Chief editor and an editorial board member of repute for more than 10 international journals. He has received many grants from the Indian Council of Medical Research, New Delhi, India; Department of Science & Technology, New Delhi, India; Centre for International Co- Operation in Science, Chennai, India; and International Medical University, Kuala Lumpur, Malaysia. He has presented many research papers in conferences in various countries like Turkey, the United States of America, South Korea, Singapore, Thailand, Indonesia, the Philippines, India, and Malaysia. Dr. Palanisamy has been awarded the “Outstanding Researcher in Pharmacology Award” in 2018, “Education Leadership Award” in 2019, “Global Knowledge Management Award” in 2020, “Dynamic Pharma Teacher Award” in 2020, “IMU Achievement Award” in 2020, “AKS Global Faculty Award” in 2021, “Leadership in Community Service (Individual and Group) Awards” in 2021, “Business Process Improvement Award” in 2021, “IMU SoP - Book Chapters Award” in 2021, “Distinguished

ISBN: 978-93-92106-59-0

Professor Award" in 2021, "National Education Excellence Achievers Award" in 2022, "Award of Leadership in Programme Management", in 2022, "Best Academician" award in 2022, "Award of Leadership in Programme Management" in 2023, elected as the FELLOW of the Royal Society for Public Health (FRSPH), UK, in August 2023, "Teaching Excellence Award" in 2024, and "IMU- Long-Service Award in 2024, "Award of Leadership in Programme Management" in 2024,"Academic Board Member" by Global Open Share Publishing Pty Ltd, Alfredton, Australia in 2025.His main areas of interest are Cardiovascular and diabetic medications, Oncology, Pharmacovigilance, Drug Safety Monitoring, Prescription Auditing, Clinical Research and Development, Cerebrovascular complications and rehabilitation, Clinical Trials, Patient Safety, Social and Administrative Pharmacy, and Falls risk medications.

ISBN: 978-93-92106-59-0

Session Speaker

Dr. Aliasgar Shahiwala

Director, Research, Professor,
Department of Pharmaceutical Sciences,
College of Pharmacy,
Dubai Medical University, UAE

Dr. Aliasgar Shahiwala is a Postdoctoral Research Associate from Northeastern University, USA (2007). He earned his PhD in Pharmacy from Maharaja Sayajirao University of Baroda, India, in 2005, after completing his Master of Pharmacy in Pharmaceutical Technology from the same institution in 1999. He is an expert in drug and gene delivery systems, nanomedicines, and the applications of AI in drug delivery. Throughout his career, Dr. Shahiwala has made significant contributions to the field through his books, book chapters, and numerous scientific publications.

ISBN: 978-93-92106-59-0

Session Chair

Dr. Mohammad Jamali

College of Medical and Health Sciences,
Liwa University, Abu Dhabi, UAE

Dr. Jamali serves as an academician and accomplished clinical scientist. His journey has been marked by a consistent drive for excellence and a remarkable track record in the industry. With a rich and diverse background, he has made significant contributions to both academia and clinical practice.

Dr. Jamali's experience includes active involvement in renowned state-of-the-art clinical laboratories across the globe. In these dynamic settings, his role demanded not only a profound understanding of advanced investigative techniques but also exceptional clinical liaison skills. His responsibilities extended to upholding rigorous laboratory quality standards, underscoring his commitment to precision and reliability.

Over the last decade, Dr. Jamali passionately imparts his knowledge and expertise to nurture emerging talents within the field. Beyond his mentoring efforts, Dr. Jamali's academic prowess is evident through his authorship of numerous impactful articles in peer-reviewed journals and several authoritative books. His academic journey culminated in the remarkable achievement of three doctoral degrees, holding expertise in Medicinal Chemistry Biochemistry and Hospital Management. These doctorates stand as a testament to his unwavering dedication to scholarship and intellectual growth.

Dr. Jamali's professional standing is emblematic of his commitment to staying at the forefront of his domain. His recognition as a Fellow of the Institute of Biomedical Science, UK, and a Chartered Scientist in the Science Council of the UK solidifies his position as a leader in his field. This Chartered Scientist designation serves as a hallmark of excellence, underlining his remarkable professionalism and scientific acumen. Notably, his influence extends beyond personal accomplishments, as he actively mentors allied health professionals, guiding them toward unparalleled professional competence in practical settings.

ISBN: 978-93-92106-59-0

Internationally, Dr. Jamali's influence is palpable as a distinguished member of the American Society for Clinical Pathology (ASCP), holding the esteemed role of an International Clinical Scientist. His impact reaches even further as a valued board member within the ASCP's Regional International Charter Commission, contributing to the advancement of the field on a broader scale.

Throughout his journey, Dr. Jamali's orientation towards tangible outcomes is evident. His steadfast dedication to fostering organic growth within the organizations he serves continues to yield positive results. This exceptional journey, marked by a commitment to excellence, scholarly achievement, and mentoring, continues to inspire and shape the landscape of both academia and clinical science.

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Organizing Committee

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ISBN: 978-93-92106-59-0

Abstract's Index

ISBN: 978-93-92106-59-0

ISBN: 978-93-92106-59-0

Naringenin: A Natural Bioflavonoid with Multifaceted Pharmacological Potential

Koteswararao Balaga
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Abstract— Naringenin, a prominent flavonoid found abundantly in citrus fruits, has garnered increasing scientific attention due to its diverse pharmacological activities and favorable safety profile. This review provides a comprehensive overview of naringenin's physicochemical and pharmacokinetic characteristics, mechanisms of action, and therapeutic potential across a broad spectrum of diseases. Notably, naringenin exhibits potent antioxidant, anti-inflammatory, anticancer, cardioprotective, neuroprotective, antidiabetic, hepatoprotective, and antimicrobial effects. However, its clinical utility has been limited by poor solubility and low oral bioavailability. Recent advancements in drug delivery systems—such as nanosuspensions, liposomes, and solid dispersions—have significantly enhanced its systemic exposure. This review article also highlights ongoing formulation strategies, preclinical and clinical evaluations, and future prospects for naringenin as a nutraceutical and pharmacological agent. By consolidating current literature, this review aims to support the rationale for further translational research and clinical development of naringenin-based therapeutics.

Keywords— Naringenin, Pharmacological Potential, Bioavailability, Formulation Strategies, Antioxidant Activity

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Enhancement of Bioavailability of Poorly Soluble Quercetin by Co-Crystal Technology

Aitha Venkata Mani Bhargav
Research Scholar, Chettinad School of Pharmaceutical Sciences, Chettinad Hospital and Research Institute, Chettinad Academy of Research and Education, Kelambakkam, India

Abstract— Quercetin, a naturally occurring flavonoid found in fruits and vegetables, exhibits a wide range of pharmacological activities including antioxidant, anti-inflammatory, and anticancer effects. Despite its therapeutic potential, quercetin's clinical application is limited by its poor aqueous solubility and low oral bioavailability. Co-crystallization, a crystal engineering strategy involving the formation of multicomponent crystalline solids with pharmaceutically acceptable coformers, has emerged as a promising approach to enhance the solubility and dissolution rate of poorly soluble drugs. This research explores the application of co-crystal technology to improve the physicochemical and pharmacokinetic properties of quercetin. Various coformers such as isonicotinamide and theobromine have been investigated for co-crystal formation with quercetin using solvent evaporation, slurry, and grinding methods. Characterization techniques including XRD, DSC, FTIR, and SEM confirm the formation of novel crystalline phases. In vitro studies demonstrate significant improvements in dissolution rate. This article highlights the potential of co-crystal technology as a scalable and regulatory-compliant strategy for improving the therapeutic efficacy of quercetin.

Keywords— Quercetin, Co-Crystal, Solubility, Flavonoid, Crystal Engineering

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Thazolidin-4–Ones Containing Benzodioxaphosphol -2–Yl-Oxides compound Synthesis, Characterization, Ant-Microbial Evaluation and Docking Studies

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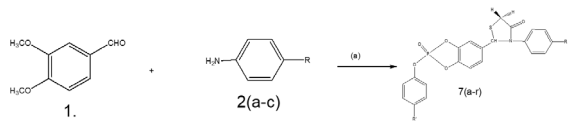
Abstract— A novel series of thiazolidin-4–one derivatives containing phosphorylated phenoxy substituents were efficiently synthesized via a one-pot condensation of substituted aromatic aldehydes, 2–aminothiophenol, and thioglycolic acid in the presence of an oxidobenzo[d][1,3,2]dioxaphosphole scaffold. The synthesized compounds, denoted as 2–(2–(4–unsubstituted/methyl/methoxy/chloro/bromo/nitro)-phenoxy)-2–oxidobenzo[d][1,3,2] dioxaphosphol -5–yl)-3–(4–unsubstituted/trifluoromethyl/nitro)-phenyl)thiazolidin-4–ones (7a–r), were characterized using IR, ^{1}H NMR, and Mass spectral analyses. Biological evaluation revealed significant antimicrobial activity, while molecular docking studies indicated strong binding interactions with bacterial target proteins, supporting the potential of these derivatives as lead antimicrobial agents. Given the wide spectrum of biological applications of thiazolidin-4–one systems—including antibacterial, antifungal, anti-inflammatory, antiviral, and anticonvulsant activities—these novel compounds represent a promising scaffold for further pharmacological development.



Starting Materials Final Product

Keywords— Thiazolidin-4–One, Phosphorylated Phenoxy, IR, ^{1}H NMR, Biological Evaluation and Docking Studies

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Self-Medication Practices Among Allied Health Students

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Abstract— Self-medication, as an act of self-care at its core, covers the selection, dosage, and administration of medications to oneself without valid prescriptions. Among population groups, allied health students exist as vulnerable to self-medication, leaving them at risk to unwarranted therapy, delayed diagnosis and treatment, microbial resistance, and adverse drug events, necessitating the need for investigation and action. This quantitative-descriptive study was conducted to examine the practice of self-medication among allied health students. An adapted form of the Self-Medication Study Questionnaire tool was administered to allied health students from a university in Iloilo City, Philippines during the second semester of academic year 2024–2025 enlisted through total enumeration from all levels. Data was analyzed descriptively to determine prevalence of self-medication and practices in terms of reason, disease, classification, consideration, source, and adverse reaction. More than 80% of allied health students engaged in self-medication, most commonly for flu-like symptoms, primarily as a result of specialized knowledge and experience in healthcare, as well as concerns regarding accessibility and affordability. The prevalence of antibiotic self-medication, considering that pharmacies were identified as a key drug source, is significantly concerning due to the growing risk of antimicrobial resistance, constituting a serious public health risk and highlighting a critical gap in legislation on the sale and distribution of prescription medications. Non-physician peers and members of the community play significant roles, acting as sources of both information and drugs. Adverse reactions in self-medication exist as threats to the safety of allied health students and were found to result in non-physician consults and further self-medication with different drugs. Allied health students widely engage in self-medication, primarily stemming from specialized knowledge and experience in healthcare and access to resources and social networks which enable self-medication practice, necessitating strengthened health education and policy reform to streamline proper diagnosis and treatment.

Keywords— Self-Medication, Allied Health Students, Antibiotic, Antimicrobial Resistance, Adverse Reaction

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Integrating Ethics in Food Safety with Advances in Food Science and Manufacturing: Building Safer and Smarter Food Systems Through Science and Responsibility

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Faculty of Nutrition and food Technology, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Abstract— As our food systems develop through cutting-edge technologies and global supply chains, the importance of ethics in food safety has never been greater. Food science and manufacturing are at the heart of how we grow, process, and deliver what ends up on our plates—but with this power comes responsibility. Ensuring food is not only safe and high-quality but also produced ethically is essential for protecting public health and earning consumer trust.

Ethical food safety means more than just meeting legal standards. It's about being transparent, honest, and committed to doing no harm. This includes clear labeling, avoiding misleading claims, minimizing contamination risks, and ensuring that everyone has fair access to safe, nutritious food. At the same time, innovations in food science—like smart packaging, bioengineering, and new preservation techniques—offer exciting ways to improve safety and reduce waste. But they must be used thoughtfully, keeping long-term health, the environment, and social fairness in mind.

In food manufacturing, ethical practices go beyond the lab and factory floor. They involve treating workers fairly, respecting cultural and dietary needs, and putting people before profits when it comes to decision-making. When ethics and science work hand-in-hand, we create a food system that's not only smarter, but safer and more just for everyone.

This abstract advocates for a more human-centered, ethical approach to food innovation—one that prioritizes integrity alongside innovation, and people over progress.

Keywords— Food Safety, Ethics, Food Science, Responsible Innovation, Food Manufacturing, Consumer Trust, Sustainability, Public Health, Transparency, Fair Practices

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Valorization of Cabbage (*Brassica oleracea var. capitata*): Extraction and Characterization of Cellulose for Pharmaceutical Applications

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Abstract— The overproduction and oversupply of cabbage (*Brassica oleracea var. capitata*) is a persistent challenge particularly in the Cordillera Region, in the Philippines. This study investigates the feasibility of utilizing cabbage leaves as a source of cellulose for potential pharmaceutical applications. Cellulose was extracted through alkali treatment, bleaching, and acid hydrolysis, then subjected to qualitative and physicochemical characterization. Positive results in the iodinated zinc chloride test and pH values within the pharmaceutical range (5.0–7.0) indicated the presence of cellulose. Further confirmation using FTIR analysis identified characteristic peaks (O–H, C–H, C–O–C, Ξ-glycosidic linkages) associated with cellulose. Notably, a distinct peak at 1734 cm^{-1} suggested residual hemicellulose or lignin. TGA showed lower thermal stability(~251°C) and higher residual mass (~31%) compared to standard microcrystalline cellulose, while SEM revealed irregular, aggregated particles, indicating incomplete purification. Despite partial refinement, the extracted cellulose demonstrates promise as a sustainable, locally sourced pharmaceutical excipient. Further process optimization is warranted to meet pharmacopeial standards. This study highlights a viable strategy for valorization of agricultural surplus while supporting local and environmental sustainability goals.

Keywords— Cellulose, Cabbage Leaves, Pharmaceutical Excipients, Sustainability

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Evaluating the Efficiency of Phytoremediation Using Spinach for Reducing Cadmium in Contaminated Soils

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Abstract— Soil contamination by heavy metals is one of the major environmental challenges worldwide. These toxic elements are persistent in the environment and pose serious risks to both human health and ecosystems. Phytoremediation has emerged as a sustainable and eco-friendly method that uses plants to remove contaminants like heavy metals from soil.

In this study, the effectiveness of spinach in reducing cadmium levels in contaminated soil was investigated. A controlled experiment with three replications was conducted using two soil types (clean and cadmium-contaminated) and one plant treatment (spinach cultivation). Cadmium concentration in the soil was initially measured using atomic absorption spectroscopy, and the soil was spiked with cadmium under controlled conditions. After stabilization, spinach seeds were planted, and the plants were grown under ambient environmental conditions.

Once the spinach reached full maturity, the remaining cadmium levels in the soil were analyzed. Results revealed a significant reduction in cadmium concentrations, highlighting spinach's potential in soil remediation.

Unlike traditional heavy metal removal methods—which are often expensive and harmful to soil quality—phytoremediation provides a cost-effective and environmentally sound solution. This approach is aligned with Nature-Based Solutions (NBS) for addressing soil pollution in a sustainable way.

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Enhancing Efficiency and Sterility: The Role of Automation and Robotics in Modern Pharmaceutical Manufacturing

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Abstract— The pharmaceutical industry has witnessed a significant transformation in recent years with the integration of automation and robotics into manufacturing processes. This study aims to evaluate how these technologies contribute to enhancing production efficiency and maintaining sterility during drug manufacturing. The objective is to highlight the current applications, benefits, and challenges of automation and robotic systems in various stages such as raw material handling, tablet formulation, sterile processing, packaging, and quality control. Methods: A narrative review was conducted using literature from PubMed, ScienceDirect, and regulatory documents from WHO and USFDA. Real-world industrial examples were examined to demonstrate the effectiveness of automation in sterile environments. Results: The use of automated machines and robots led to a 30–50% increase in production efficiency, reduced human error, and minimized microbial contamination in sterile areas. Technologies such as robotic arms, automated guided vehicles, and collaborative robots (cobots) showed excellent adaptability in various pharmaceutical settings. Conclusions: Automation and robotics are not only improving the speed and accuracy of drug manufacturing but also ensuring compliance with stringent sterility and quality standards. Their strategic integration is essential for the future of pharmaceutical manufacturing, especially in the post-pandemic era.

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