

Introduction to Special Issue on Pharmacy and Pharmaceutical Sciences: Celebrating the 10th Anniversary of School of Pharmacy, Walailak University

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I feel honored to write the editorial article for this special issue of the Walailak Journal of Science and Technology focusing on pharmacy and pharmaceutical sciences, celebrating the 10th anniversary of the School of Pharmacy, Walailak University.

Pharmaceutical development in drugs, cosmetics, and health products involves various processes, including raw material preparation, formulation development, the invention of drug delivery systems, and the study of product stability. Both knowledge and clinical skill in patient care are necessary to achieve efficiency and effectiveness of rational drug use, in order to apply effective treatment, prevention and health promotion.

This special issue covers several topics, including chemical synthesis, natural product isolation, characterization, activity assay, and the development of drug carriers and drug delivery. Additionally, it includes research and expository papers devoted to important pharmaceutical results and topics of current interest.

The first article from Weerasak Khampheraaphakul, Wiyadee Matcharoen, Apinya Kerdtalay, Ammar Darama, and Tanavij Pannoi, studies the prevalence and patient factors associated with high-risk medications (HRM). Elderly in-patients who received non-steroidal anti-inflammatory drugs (NSAIDs) and tricyclic antidepressants (TCAs) at a district hospital in the south of Thailand were screened, and logistic regression was used to analyze the association between patient factors and HRM.

The second article involves the synthesis of novel series of pyrimidine derivatives, by Anshu Chaudhary, Anoop Singh, and Prabhakar Kumar Verma. The structures of such compounds were elucidated by IR, ¹H-NMR, elemental analysis and mass spectroscopic techniques. Interestingly, several compounds exhibited significant anti-inflammatory activity in a carrageenan-induced rat paw edema model.

The third article studies the dipeptidyl peptidase-IV (DPP-IV) inhibitory activity, antioxidant property, and phytochemical compositions of 14 medicinal herb extracts used in the Krom Luang Chomphon Thai folk recipe. The findings support the potential use of this recipe as an alternative treatment for diabetes. This research was performed by Mingkwan Rachpirom, Chitchamai Ovatlarnporn, Suriyan Tengyai, and Panupong Puttarak.

The fourth article investigates the anti-obesity effect of the hexane fraction of ivy gourd root extract in high-fat diet induced obese mice. The extract caused a decrease in serum triglycerides, hepatic triglycerides, and total cholesterol levels. This study was performed by Ruthaiwan Bunkrongcheap, Masashi Inafuku, Hirotsuke Oku, Nongporn Towatana, Chatchai Wattanapiromsakul, and Decha Sermwittayawong.

The fifth article, from Kingkan Bunluepuech, Supinya Tewtrakul, and Chatchai Wattanapiromsakul, presents the anti-HIV-1 protease activity of 24 Thai plants. The authors could separate and elucidate 5 pure compounds from an ethanol extract of *Cassia garrettiana* which showed potent anti-HIV-1 protease activity.

The sixth article describes the purification of pyridoxamine and pyridoxamine 5'-phosphate in a culture medium of gram negative bacterium *Rhizobium* sp. 6-1C1 by using a strong acid cation exchange

chromatography and reverse phase HPLC. The work was done by Anutida Sangsai, Panawan Moosophon, and Yanee Trongpanich.

The seventh article, deals with the characterization of drug-chitosan spray dried particles (SDPs) by using diclofenac sodium or theophylline as model drugs. Scanning electron microscopy was used to describe the morphology of drug-chitosan mixtures. The effect of temperature on drug states in the microspheres was examined by simultaneous measurement of powder X-ray diffraction and differential scanning calorimetry. A dissolution test was also performed, in order to study its drug release behavior. This work was done by Kampanart Huanbutta, Katsuhide Terada, Pornsak Sriamornsak, and Jurairat Nunthanid.

The eighth article is from Kampanart Huanbutta, Tanikarn Sangnim, and Wancheng Sittikijyothin. They modified tamarind seed gum by carboxymethylation, and found that water solubility and flowability of those gum in the formulation of diclofenac sodium tablets were increased. These findings might be able to be developed for pharmaceutical dry binding in tablet formulation.

The ninth article, describes the production of a CoQ₁₀-enriched shell of ultra-small nanostructured lipid carriers using a hot high pressure homogenization technique, by Nuttakorn Baisaeng, Daniel Peters, Michel Prost, Philippe Durand, Rainer Helmut Müller, and Cornelia Keck. They compared the effect of particle size on antioxidant capacity using the DPPH method and the biological Kit Radicaux Libres (KRL) test. Formulations showed a good physicochemical stability at 4 and 20 °C for 3 months.

The last article from Suchada Piriyaprasarth, Maneerat Juttulapa, and Pornsak Sriamornsak, investigated the physical properties of pectin-zein polyelectrolyte complexes at pH 4, where pectin and zein carried opposite charges. This provides a better understanding of the complexes for drug delivery carriers.

Finally, I would like to take this opportunity to thank deeply the effort of Professor Dr. Pornsak Sriamornsak and Dr. Apichart Atipairin, in their role as guest editors, as well as all reviewers and authors. I sincerely hope that the knowledge presented will lead to the development of advancements in pharmacy and provide lasting benefits to society.



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Jiraporn Chingunpitak is the dean of the School of Pharmacy, Walailak University. She received a B.Sc in pharmacy from Mahidol University in 1998, and a Ph.D. in pharmaceutics from the same in 2006. She was a production pharmacist and a general pharmacist in both public and private hospitals in Thailand. She has collaborated with Chiba University, Japan, and published various scientific research papers in peer reviewed international journals. Her article “Nanosuspension Technology for Drug Delivery” in 2007 remains the highest cited paper ever for Walailak Journal of Science and Technology. Her current researches focus on diverse areas, such as nanotechnology, herbal development, and cosmetics.