



**CURRENT  
ISSUES in**

# **PHARMACY**

Volume 2

*Edited by*

**MUHAMMAD TAHER  
QAMAR UDDIN AHMED**



**IUM  
Press**

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Qamar Uddin Ahmed



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Press**

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CHAPTER 1

CHAPTER 2

CHAPTER 3

CHAPTER 4

CHAPTER 5

# Contents

---

	<i>Figures</i>	<i>ix</i>
	<i>Tables</i>	<i>xiii</i>
	<i>Preface</i>	<i>xv</i>
CHAPTER 1	Introduction: Current Issues in Pharmacy <i>Qamar Uddin Ahmed and Muhammad Taher</i>	1
SECTION 1: PHARMACY PRACTICE		
CHAPTER 2	Potentially Inappropriate Medications (PIM) in the Among Elderly: What Can be Done? <i>Mohd Shahezwan Abd Wahab, Aida Azlina Ali and Noordin Othman</i>	7
SECTION 2: PHARMACOGNOSY/MEDICINAL PLANT THERAPY		
CHAPTER 3	Anticancer Potential of Flavonoids: Polyphenols that May Cure <i>Qamar Uddin Ahmed, Aina Nazira Abdul Halim, Muhammad Taher, Siti Zaiton Mat So'ad and Jalifah Latip</i>	21
CHAPTER 4	<i>Mimosa pudica</i> : A Weed with Medicinal Importance <i>Qamar Uddin Ahmed, Tasnuva Sarwar Tunna, Jalifah Latip and Md. Zaidul Islam Sarker</i>	63
CHAPTER 5	Health Benefits of Omega-3 in Cardiovascular Disease <i>Muhammad Taher, Nur Fathanah Mohd Ali, Deny Susanti, Qamar Uddin Ahmed and Tengku Muhamad Faris Syafiq</i>	91

Contents

CHAPTER 6	Antioxidant Property of Green Tea Catechins as Neuroprotection in the Brain <i>Muhammad Taher, Afiqa Jamil, Deny Susanti, Qamar Uddin Ahmed and Tengku Muhamad Faris Syafiq</i>	109	CHAPTER 13
CHAPTER 7	Microsponge: A Potential Delivery System for Salicylic Acid in Treating Acne <i>Hazrina Hadi, Nurul Namira Azillah and Qamar Uddin Ahmed</i>	127	CHAPTER 14
CHAPTER 8	Exploring the Tropical Plant Wealth: Skin and Hair Benefits <i>Hazrina Hadi, Nurul Shazwani Abdullah and Qamar Uddin Ahmed</i>	149	CHAPTER 15
CHAPTER 9	Alzheimer Disease: Gene Therapy and Natural Product Research <i>Abd Almonem Doolaanea and Farahidah Mohamed</i>	175	CHAPTER 16
CHAPTER 10	A Concise Review of Malaysian Medicinal Plants with Antidiabetic Activity <i>Fatima Opeyemi Roheem, Siti Zaiton Mat So'ad and Qamar Uddin Ahmed</i>	199	
CHAPTER 11	<i>Chromolaena odorata</i> (L.): A Weed of High Medicinal Value <i>Qamar Uddin Ahmed, Nur Ameenah Samuil and Muhammad Taher</i>	223	
CHAPTER 12	<i>Annona muricata</i> : A Potent Anticancer Plant <i>Siti Zaiton Mat So'ad, Farah Athirah Wahairi and Qamar Uddin Ahmed</i>	248	

SECTION 3: PHARMACEUTICAL  
TECHNOLOGY

- CHAPTER 13 Role of Osmosis in Routine Life 265  
*Saifullah Khan, Farman Ullah Khan and  
Muhammad Taher*
- CHAPTER 14 Cosmeceutical Applications of Clay Minerals: 275  
A Review  
*Hazrina Hadi, Muhammad 'Izzuddin Zamery and  
Ahmad Zaiter*

SECTION 4: BASIC MEDICAL SCIENCES

- CHAPTER 15 The Beneficial Effect of Coffee Consumption 297  
in Type 2 Diabetes Mellitus  
*Nur Masyitah Yusof and May Khin Soe*
- CHAPTER 16 Zumba as the Selected Physical Activity in 325  
Managing Type 2 Diabetes Mellitus  
*Muhammad Azrai Rozali and May Khin Soe*
- Contributors* 341  
*Index* 345

# Chapter 1

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## Introduction: Current Issues In Pharmacy

Qamar Uddin Ahmed and Muhammad Taher

The purpose of preparing this research book entitled *Current Issues in Pharmacy Vol. 2* is to deliver students and academics related to pharmacy disciplines with the necessary awareness and skills to recognize, envisage and discuss current research issues in pharmacy. The field of pharmacy consists of many disciplines of pharmaceutical sciences particularly pharmacy practice, pharmaceutics, pharmacology, molecular biology, pharmacognosy and medicinal chemistry. Pharmacy is involved in a wide array of pharmaceutical research and education, too. Pharmacy practice research focuses on the areas of pharmacogenetics, pharmacokinetics and pharmacodynamics. It also covers the inter-relationship between these areas in different ethnic groups, as well as methodological issues on pharmacoconomics. Clinical and applied research is conducted on studies that are supposed to improve patient outcomes and could have a favourable impact on pharmacy practice and service. Pharmaceutics research is concerned with drug formulation, stability, and delivery science, and also works on medical devices. Medicinal chemistry research is mainly focused on pharmaceutical chemistry, drug discovery and compound library, and receptor biology. Pharmacology research works on molecular and cellular mechanisms of disease states and associated pharmacology, as well as a range of toxicology research.

The pharmaceutical sciences have become progressively quantitative and, in addition to pharmacogenomics, comprise the wide areas of quantitative and systems pharmacology, molecular pharmacology, therapeutic bioengineering and drug development sciences. Besides, pharmaceutical sciences research is driven by the continuous advancement in techniques; for example, tissue and temporal expression of genes in genetically modified mice, modelling of complex

systems, confocal and electron microscopy and nanotechnology. Together, these disciplines provide a strong multidisciplinary approach to research. Research studies in this field lead to a molecular understanding of target and off-target effects of clinically used drugs, identification of new drug targets, complex models that can guide drug development and clinical drug testing, novel drug delivery systems and pharmacogenomics, which is the application of genetics and genomics to drug action and disposition.

The profession and practice of pharmacy have been greatly reformed and revolutionized during the past decade. Nowadays, pharmacists have greater responsibilities in the field of medicine. Pharmacists carry out different kinds of research studies with the aim of improving patient care and the healthcare system. They research chemical and herbal ingredients, review and test medications for efficacy and safety issues, conduct clinical and translational outcomes research with respect to improve patient care and healthcare systems.

The scope of pharmacy disciplines research is enormous in order to promote safe and appropriate use of medicines, pharmacists have to take many key issues into consideration. New, well-planned and well-orchestrated, constructive directions in health policies, changing needs and expectations of the population, the structural, economic, social and cultural contexts of healthcare, and the aspirations of pharmacists for a greater role in its delivery all provide the background and frameworks for the conception and execution of pharmacy research. Equally diverse is the range of methodologies that may be employed to answer important questions. Research activities related to pharmacy disciplines are vital to patients, healthcare organizations, governments and professionals. The definitive goal is to lead the way in the adaptation of pharmacy services to meet healthcare and pharmaceutical care needs and contribute to pharmacy and health policy agendas. Moreover, the formation of different research clusters that could draw upon existing research strengths within the Schools of Pharmacy, the faculty and the hospital is now considered very important. It is now universally accepted that the creation of pharmacy research clusters has proved crucial for constructive studies to facilitate multidisciplinary research and provide opportunities for obtaining

research funding  
bodies and the p

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The contents are  
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Pharmaceutical



research funding from the national and international competitive granting bodies and the pharmaceutical industries worldwide.

Obviously, this book is not intended as a comprehensive coverage in this area. The book consists of 16 chapters including the introduction. The contents are grouped into four sections; *viz.* Section 1: Pharmacy Practice, Section 2: Pharmacognosy/Medicinal Plant Therapy, Section 3: Pharmaceutical Technology and Section 4: Basic Medical Sciences.

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*A. muricata* 25  
*abelmoschus e.*  
acne 127  
aromatization  
problems  
vulgaris  
aetiology 129  
alzheimer disease  
aminoflavone  
an overview 1  
*Anacardium occidentale*  
analgesics and  
*Annona* 250  
    *mauriceana*  
*Annonaceae* 2  
    genera 2  
annonacin 253  
anthocyanins  
anti-acne properties  
anti-arrhythmic  
anti-atherosclerosis  
antibacterial 2  
anticancer / cytotoxic  
anticancer plant  
anticataract 2  
antidandruff effects  
antidiabetic 2  
    activity  
anti-diarrhoeal  
antifungal 23  
anti-inflammatory  
antioxidant 2  
apigenin 25  
approved drugs  
aromatase 39  
atrial fibrillation

# CURRENT ISSUES in PHARMACY

Volume 2

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