

PREFACE

I am delighted to present the latest volume of the Hong Kong Chinese Materia Medica Standards (HKCMMS). This volume not only is the eighth of the series setting out reference standards for Chinese Materia Medica (CMM) commonly used in Hong Kong, but also marks the 15th anniversary of the launch of the HKCMMS Project.

The HKCMMS Project was first launched in 2002 with a view to ensuring the safety and quality of CMM in protection of public health. Striving to establish quality and safety standards of CMM, with the unfailing support of research institutions throughout the past 15 years, the HKCMMS has developed from a pilot study of eight CMM into a continuous project and a widely recognized reference standards for Chinese medicine traders and practitioners, academia and laboratories in the field of Chinese medicine testing and certification, as well as overseas organizations.

This ongoing series of the HKCMMS is the culmination of extensive research and preparation that has undergone thorough verifications and reviews. The HKCMMS provides applicable and adoptable reference standards for the testing of CMM and the acceptance criteria for verifying their authenticity, safety and quality. The establishment of the HKCMMS enables Hong Kong to align with international standards, facilitates trading of CMM and ensures the safety and quality of Chinese medicines in the protection of public health. The HKCMMS also contributes to the research and development of Chinese medicines. As a set of comprehensive, reliable and internationally recognized standards of CMM, the HKCMMS has a significant role in promoting development of the testing and certification industry.

With the 39 new entries added to this volume, the number of reference standards for CMM has now totalled to 275.

For the first-time ever, we are pleased to introduce reference assay chromatograms into the individual CMM monographs in the electronic versions of this volume. This valuable information would certainly enrich the content of HKCMMS and further securing the quality control of CMM.

The Chief Executive's 2016 Policy Address makes it clear that the Government of the Hong Kong Special Administrative Region is determined to develop Hong Kong into a regional innovation hub in the area of technologies and their application, and has committed to further the development of Chinese medicine. To this end, the Government of the Hong Kong Special Administrative Region is implementing in phases the Chinese Medicine Development Committee's recommendations, inter alia, to plan and establish a testing centre for Chinese medicines. With the establishment of the testing centre, we endeavor to develop more reference

standards of CMM and promote the HKCMMS as authoritative international benchmarks to pave the way for the internationalisation of Hong Kong's Chinese medicines industry.

Whilst the new testing centre is being established, our work on the HKCMMS Project is already taken to a new level – we are now making every endeavour to conduct a pilot study on the standard setting for Chinese medicines decoction pieces.

In 2016, the Chinese Medicine Division of Department of Health is honoured to be redesignated as the World Health Organization (WHO) Collaborating Centre for Traditional Medicine. We aspire to further contribute to the development and implementation of WHO's traditional medicine policies, strategies and regulatory frameworks and will continue to take active steps to develop HKCMMS with a view to strengthening the quality assurance, safety, proper use and effectiveness of traditional medicine.

With the launching of the pilot study on the standard setting for Chinese medicines decoction pieces under the HKCMMS project, it marks an important milestone in the development of Chinese medicines in Hong Kong. We are much obliged to have the ongoing support from the China Food and Drug Administration and we envisage this initiative would further enhance the exchange of expertise in both places towards the internationalisation of Chinese medicines.

In the preparation of this volume, high-level collaborative expertise and effort has been generously contributed from members of the International Advisory Board, Scientific Committee, and Editorial Board; from Government Laboratory; and from the eight research institutions, namely the Chinese University of Hong Kong, the City University of Hong Kong, the Hong Kong Baptist University, the Hong Kong Polytechnic University, the Hong Kong University of Science and Technology, the University of Hong Kong, Taiwan's China Medical University and the National Institutes for Food and Drug Control of the People's Republic of China. Their contributions are gratefully acknowledged.

Finally, I wish to express my sincere gratitude to the China Food and Drug Administration, State Administration of Traditional Chinese Medicine and the Chinese Pharmacopoeia Commission of the People's Republic of China for their enduring support and invaluable advice on the development of the HKCMMS.

Dr. Constance CHAN, JP
 Director of Health

Members of the International Advisory Board

- Dr. Samantha ATKINSON Deputy Director, Inspection, Enforcement & Standards Division
Secretary and Scientific Director, BP Commission
Medicines & Healthcare products Regulatory Agency, United Kingdom
- Prof. Dr. Rudolf BAUER Professor in Pharmacognosy, Head, Institute of Pharmaceutical
Sciences, Department of Pharmacognosy, TCM Research Center
Graz, University of Graz, Austria
- Dr. Joseph M. BETZ Director, Analytical Methods and Reference Materials Program,
Office of Dietary Supplements, National Institutes of Health,
United States
- Prof. David BRIGGS Adjunct Professor, The National Institute of Complementary
Medicine, Western Sydney University, Australia
- Prof. Nuntavan BUNYAPRAPHATSARA Professor Emeritus of Pharmacognosy, Faculty of Pharmacy,
Mahidol University, Thailand; and Consultant on medicinal plants at
the Thailand Research Fund
- Dr. Constance CHAN, JP Director of Health, The Government of the Hong Kong Special
Administrative Region
(Chairperson of IAB)
- Prof. Kelvin K. C. CHAN Adjunct Professor at the National Institute of Complementary
Medicine, Western Sydney University, and Faculty of Science,
University of Technology Sydney, Australia; and Visiting Professor
at the School of Pharmacy & Biomolecular Sciences, Liverpool John
Moores University, United Kingdom
- Dr. Peter CHAN Director General, Health Evaluation Directorate,
Pest Management Regulatory Agency,
Health Canada, Canada
- Prof. CHE Chun-tao Norman R. Farnsworth Professor of Pharmacognosy; and
Director, WHO Collaborating Center for Traditional Medicine,
College of Pharmacy, University of Illinois at Chicago, United States
- Prof. Harry H.S. FONG Professor Emeritus of Pharmacognosy,
Department of Medicinal Chemistry and Pharmacognosy,
College of Pharmacy, University of Illinois at Chicago, United States

- Prof. em. Dr. Gerhard FRANZ Chairman of the European TCM-Working Party,
 EDQM-Strasbourg, France; and
 Department of Pharmacy, University of Regensburg,
 Regensburg, Germany
- Dr. Yukihiro GODA Head, Division of Drugs,
 National Institute of Health Sciences, Japan
- Prof. HUANG Luqi Vice-President, China Academy of Chinese Medical Sciences; and
 Director, National Resource Center for Chinese Materia Medica,
 The People's Republic of China
- Dr. Cindy LAI, JP Deputy Director of Health, The Government of the Hong Kong Special
 Administrative Region
- Dr. Gerard LEE Member, British Pharmacopoeia Commission, United Kingdom
- Prof. LIN Ruichao Professor, Dean of School of Chinese Materia Medica,
 Beijing University of Chinese Medicine,
 The People's Republic of China
- Prof. MA Shuangcheng Director, Institute for Control of Chinese Traditional Medicine and
 Ethnic Medicine, National Institutes for Food and Drug Control,
 China Food and Drug Administration,
 The People's Republic of China
- Ms. SHI Shangmei Director, Division of Traditional Chinese Medicine,
 Chinese Pharmacopoeia Commission,
 The People's Republic of China
- Prof. Monique S.J. SIMMONDS Deputy Director of Science,
 Royal Botanic Gardens, Kew,
 United Kingdom
- Dr. SIN Wai-mei, JP Government Chemist, Government Laboratory, The Government of
 the Hong Kong Special Administrative Region
- Dr. WANG Xiaopin M. D. Director General, Office of Hong Kong, Macau and Taiwan Affairs,
 Department of International Cooperation,
 State Administration of Traditional Chinese Medicine,
 The People's Republic of China

Dr. WEI Feng

Director of Department of Chinese Materia Medica,
Institute for Control of Chinese Traditional Medicine and Ethnic
Medicine, National Institutes for Food and Drug Control,
China Food and Drug Administration,
The People's Republic of China

Prof. ZHAO Zhongzhen, MH

Associate Dean and Chair Professor,
School of Chinese Medicine,
Hong Kong Baptist University

(Remark: The list is arranged in alphabetical order of last name)

Members of the Scientific Committee

(including those overseas and mainland IAB members who participated in the Scientific Committee meetings during their visits to Hong Kong)

Dr. Joseph M. BETZ

Director, Analytical Methods and Reference Materials Program,
Office of Dietary Supplements, National Institutes of Health,
United States

Prof. Kelvin K. C. CHAN

Adjunct Professor at the National Institute of Complementary
Medicine, Western Sydney University, and Faculty of Science,
University of Technology Sydney, Australia; and Visiting Professor
at the School of Pharmacy & Biomolecular Sciences, Liverpool John
Moore's University, United Kingdom

Ms. Polly CHAN

(January 2014 – December 2015)

Senior Pharmacist,
Department of Health, The Government of the Hong Kong Special
Administrative Region
(Former Chairperson of Scientific Committee)

Prof. CHANG Yuan-shiun

Professor of Pharmacognosy, Department of Chinese Pharmaceutical
Sciences and Chinese Medicine Resources,
College of Biopharmaceutical and Food Sciences,
China Medical University, Taiwan

Prof. CHE Chi-ming, BBS

Zhou Guangzhao Professor in Natural Sciences,
Department of Chemistry, The University of Hong Kong;
Academician of Chinese Academy of Sciences;
Foreign Associate of National Academy of Sciences, United States;
Vice President of The Academy of Sciences of Hong Kong;
Fellow of TWAS, The Academy of Sciences for the Developing World

- Prof. CHE Chun-tao Norman R. Farnsworth Professor of Pharmacognosy; and
 Director, WHO Collaborating Center for Traditional Medicine,
 College of Pharmacy, University of Illinois at Chicago, United States
- Dr. CHEUNG Hon-yeung Associate Professor, Research Group for Bioactive Products,
 Department of Biomedical Sciences,
 City University of Hong Kong
- Prof. Harry H.S. FONG Professor Emeritus of Pharmacognosy,
 Department of Medicinal Chemistry and Pharmacognosy,
 College of Pharmacy, University of Illinois at Chicago, United States
- Prof. Albert W. N. LEUNG Director, School of Chinese Medicine,
 The Chinese University of Hong Kong
- Prof. LIN Zhixiu Acting Director and Associate Professor, School of Chinese Medicine,
 The Chinese University of Hong Kong
- Prof. MA Shuangcheng Director, Institute for Control of Chinese Traditional Medicine and
 Ethnic Medicine, National Institutes for Food and Drug Control,
 China Food and Drug Administration,
 The People's Republic of China
- Dr. Daniel K.W. MOK Associate Professor,
 Department of Applied Biology and Chemical Technology,
 The Hong Kong Polytechnic University
- Prof. Karl W. K. TSIM Chair Professor, Division of Life Science, and
 Director, Centre for Chinese Medicine R&D,
 The Hong Kong University of Science and Technology
- Ms. Grace W.W. WONG Senior Pharmacist,
 (December 2015 –) Department of Health, The Government of the Hong Kong Special
 Administrative Region
 (Current Chairperson of Scientific Committee)
- Prof. Kwok-yin WONG Patrick S.C. Poon Professor in Applied Chemistry
 Director of University Research Facility in Life Sciences and
 Associate Vice President (Research Support)
 Chair Professor of Chemical Technology
 The Hong Kong Polytechnic University

Prof. ZHAO Zhongzhen, MH Associate Dean and Chair Professor, School of Chinese Medicine,
Hong Kong Baptist University

Government Chemist Government Laboratory, The Government of the Hong Kong Special
and / or his / her representatives Administrative Region

(Remark: The list is arranged in alphabetical order of last name)

Members of the Editorial Board

Ms. Polly CHAN Senior Pharmacist,
(January 2014 – December 2015) Department of Health, The Government of the Hong Kong Special
Administrative Region
(Former Chairperson of Editorial Board)

Prof. CHANG Yuan-shiun Professor of Pharmacognosy, Department of Chinese Pharmaceutical
Sciences and Chinese Medicine Resources,
College of Biopharmaceutical and Food Sciences,
China Medical University, Taiwan

Prof. CHE Chi-ming, BBS Zhou Guangzhao Professor in Natural Sciences,
Department of Chemistry, The University of Hong Kong;
Academician of Chinese Academy of Sciences;
Foreign Associate of National Academy of Sciences, United States;
Vice President of The Academy of Sciences of Hong Kong;
Fellow of TWAS, The Academy of Sciences for the Developing World

Prof. CHE Chun-tao Norman R. Farnsworth Professor of Pharmacognosy; and
Director, WHO Collaborating Center for Traditional Medicine,
College of Pharmacy, University of Illinois at Chicago, United States

Dr. CHEUNG Hon-yeung Associate Professor, Research Group for Bioactive Products,
Department of Biomedical Sciences,
City University of Hong Kong

Prof. Albert W. N. LEUNG Director, School of Chinese Medicine,
The Chinese University of Hong Kong

Prof. LIN Zhixiu Acting Director and Associate Professor, School of Chinese Medicine,
The Chinese University of Hong Kong

- Prof. LUO Guoan
 Director of the Network Center (Ministry of Education) for Collaborative Study of TCM Modernization,
 Department of Chemistry, Tsinghua University,
 The People's Republic of China
- Prof. MA Shuangcheng
 Director, Institute for Control of Chinese Traditional Medicine and Ethnic Medicine, National Institutes for Food and Drug Control,
 China Food and Drug Administration,
 The People's Republic of China
- Dr. Daniel K.W. MOK
 Associate Professor,
 Department of Applied Biology and Chemical Technology,
 The Hong Kong Polytechnic University
- Prof. Monique S.J. SIMMONDS
 Deputy Director of Science,
 Royal Botanic Gardens, Kew,
 United Kingdom
- Prof. Karl W. K. TSIM
 Chair Professor, Division of Life Science, and
 Director, Centre for Chinese Medicine R&D,
 The Hong Kong University of Science and Technology
- Ms. Grace W.W. WONG
 (December 2015 –)
 Senior Pharmacist,
 Department of Health, The Government of the Hong Kong Special Administrative Region
 (Current Chairperson of Editorial Board)
- Prof. Kwok-yin WONG
 Patrick S.C. Poon Professor in Applied Chemistry
 Director of University Research Facility in Life Sciences and
 Associate Vice President (Research Support)
 Chair Professor of Chemical Technology
 The Hong Kong Polytechnic University
- Prof. ZHAO Zhongzhen, MH
 Associate Dean and Chair Professor, School of Chinese Medicine,
 Hong Kong Baptist University

(Remark: The list is arranged in alphabetical order of last name)