Good Practice in Traditional Chinese Medicine Research Association

中医药规范研究学会

May-June 2023 Newsletter

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CONTENTS

The 11th Annual Meeting of GP-TCM RA

Dear All,

Since our 7th Annual Meeting held in South Korea in 2019, the subsequent Annual meetings during the past 3 years were all held online due to the global COVID-19 pandemic. However, with the Covid health emergency ends as recently declared by The World Health Organization, I am very pleased and excited to announce the resume of our face-to-face Annual Meeting later this year. The 11th Annual Meeting of GP-TCM RA will be held on 18-20 September 2023 in Leiden, The Netherlands, which is in fact the founding place of our Association back in 2012. I would like to invite you all to join this 2.5-days Meeting and to take this opportunity to meet old and new friends. Please see attached the meeting flyer and the tentative program for more details.

The registration for this Meeting is now open. Please use the below link for registration:

https://form.jotform.com/231291829987371

In order to promote academic exchanges and research collaborations, we welcome you and your colleagues and students to submit abstracts to this Meeting to share your latest research findings. Please use the attached abstract submission form and kindly note the deadline for abstract submission is 1 August 2023.

I would like to sincerely welcome you all in the coming 11th Annual Meeting of GP-TCM RA in the beautiful city Leiden in September. Your active participation and continuous support will certainly make a successful and memorable Meeting.

Thank you for your attention.

Clara Lau
President of GP-TCM RA

The 11th Annual Meeting of
Good Practice in Traditional Chinese Medicine
Research Association (GP-TCM RA)

All are welcome!

18-20 September 2023

Leiden, The Netherlands

Meeting venue: Fletcher Wellness Hotel Leiden

For more details, please refer to GP-TCM RA website: www.gp-tcm.org

Please use below link for registration:
https://form.jotform.com/231291829987371

Please scan this QR code if the link does not work

Don't miss out the early bird rate for registration, ends on 30 June 2023

Hong Kong Baptist University appoints Professor Lyu Aiping as Vice-President (Research and Development), Aiping is a current member of the GP-TCM RA's Board of Directors. As well as being the Honorary member and Life Members, Aiping also serves as the chair of Clinical Studies Interest group.

Congratulation to Aiping !

香港浸會大學
HONG KONG BAPTIST UNIVERSITY
PRESS RELEASE

HKBU appoints Professor Lyu Aiping as Vice-President (Research and Development)

Tuesday, 13 June 2023

The Council of Hong Kong Baptist University (HKBU) approved today (13 June) the appointment of Professor Lyu Aiping as Vice-President (Research and Development), with effect from 1 August 2023.

Professor Lyu is a world-leading scientist in aptamer-based translational medicine and drug discovery. He is currently the Chair Professor of Chinese Medicine, Dean of School of Chinese Medicine and Dr. Kennedy Y. H. Wong Endowed Professor in Chinese Medicine at HKBU.

The Council of HKBU approved the appointment of Professor Lyu Aiping as Vice-President (Research and Development).

News and photo adapted from link below:
https://www.hkbu.edu.hk/en/whats-new/press-release/2022/20230613-hkbu-appoints-professor-lyu-aiping-as-vice-president-research-and-development.html

ii

Congratulation to Thomas Efferth for becoming a member of the Academia Europaea, Thomas is a current member of the GP-TCM RA's Board of Directors. As well as being the Honorary member and Life Members, Thomas also serves as the chair of Pharmacology and Toxicology Interest group.

ACADEMIA EUROPAEA } *The Academy of Europe*

Categories: Home > Member > *Efferth Thomas*

Thomas Efferth

Membership Number:	6603
Membership type:	ORDINARY
Section:	CLINICAL & VETERINARY SCIENCE
Elected:	2023
Main Country of Residence:	GERMANY
Homepage(s):	https://ak-efferth.pharmazie.uni-mainz.de/people/
ORCID:	0000-0002-2637-1681

News and photo adapted from link below:
https://www.ae-info.org/ae/Member/Efferth_Thomas

New members of GP-TCM RA (May– June 2023)

Life Member	
Grace Yue	The Chinese University of Hong Kong, Hong Kong SAR
Ordinary Members	
Eva María Domínguez-Martín	University of Alcalá de Henares, Madrid, Spain
Man Yuan	Shanghai University of Traditional Chinese Medicine, China
Student Member	
Pavao Todorović	Karl-Franzens-University, Graz, Austria
Institutional Member	
Shaanxi University of Technology, China	

China Medical University, Taichung, Taiwan (Department of Chinese Pharmaceutical Sciences and Chinese Medicine Resources)	
Dalian Fusheng Natural Medicine Development Co. Ltd., China	大连富生天然药物开发有限公司 DALIAN FUSHENG NATURAL MEDICINE DEVELOPEMENT CO., LTD
Guangdong Provincial Hospital of Chinese Medicine, China	廣東省中醫院 GUANGDONG PROVINCIAL HOSPITAL OF CHINESE MEDICINE
Heilongjiang University of Chinese Medicine, China	
Hong Kong Baptist University, Hong Kong SAR, China (School of Chinese Medicine)	香港浸會大學 HONG KONG BAPTIST UNIVERSITY
Hutchison Whampoa Guangzhou Baiyunshan Chinese Medicine Co. Ltd., China	广州白云山和记黄埔中药有限公司
Infinitus (China) Company Ltd., China	INFINITUS 无限极
Institute of Chinese Medicine, The Chinese University of Hong Kong, Hong Kong SAR, China	
PuraPharm International (H.K.) Ltd., Hong Kong SAR, China	PuraPharm
Shanghai Hutchison Pharmaceuticals, China	Shanghai Hutchison Pharmaceuticals 上海和黄药业
Shanghai University of Traditional Chinese Medicine, China (School of Pharmacy)	
Zhejiang Chinese Medical University, China (School of Pharmaceutical Sciences)	
Zhengzhou University of Industrial Technology, China	

The 7th Summer Summit of World Congress of Chinese Medicine, titled "Inheritance, innovation and integrated development – promote the high-quality of Chinese medicine to the world", kicked off in Guiyang, capital of Southwest China's Guizhou province, on June 25.

新时代，全球中医药人聚首中国大西南
——世界中医药大会第七届夏季峰会在贵阳召开

世界中医药学会联合会 2023-06-26 22:02 发表于北京

6 月 25 日，世界中医药大会第七届夏季峰会在贵州省贵阳市开幕。大会以“传承创新 融合发展——推动中医药高质量走向世界”为主题，旨在推动新时代中医药更广泛走向世界，助力中医药高质量融入“一带一路”建设。此次大会由国家中医药管理局、贵州省人民政府指导，世界中医药学会联合会（以下简称“世界中联”）、贵州省卫生健康委员会、贵州省中医药管理局、贵阳市人民政府共同主办，贵阳市卫生健康局、贵州中医药大学承办。

Photo and news adapted from link below:
https://mp.weixin.qq.com/s/VTWkla435SJsYwotEH3C2w

For more information in English please check out the link below:
http://wsjkj.english.guiyang.gov.cn/2023-06/26/c_897665.htm

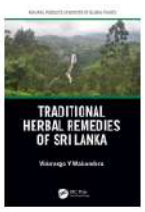
i

Natural Products Chemistry of Global Plants Series

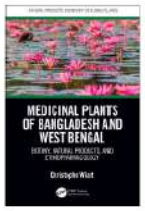
Series Editor: Clara Bik-San Lau

Founding Series Editor: Raymond Cooper

Details: https://www.routledge.com/Natural-Products-Chemistry-of-Global-Plants/book-series/CRcNPcGP

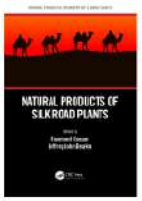


Traditional Herbal Remedies of Sri Lanka
Edited by Viduranga Y. Waisundara
March 2019 180pp
hb: 978-1-138-74308-3: £120.
www.routledge.com/9781138743083



Medicinal Plants of Bangladesh and West Bengal
Botany, Natural Products, & Ethnopharmacology
By Christophe Wiart, May 2019 302pp
hb:978-1-138-73516-3: £115.
www.routledge.com/9781138735163

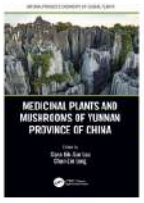
Brazilian Medicinal Plants
Edited by **Luzia Valentina Modolo, Mary Ann Foglio**
November 2019 358pp
hb:978-1-138-09375-1: £150
www.routledge.com/9781138093751



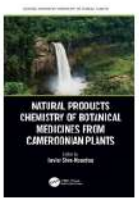
Natural Products of Silk Road Plants
Edited by **Raymond Cooper, Jeffrey John Deakin**
September 2020 304pp
pb: 978-0-367-18433-9: £74.99
www.routledge.com/9780367184339

Natural Products and Botanical Medicines of Iran
By Reza Eddin Owfi
October 2020-260DD
pb: 978-0-367-44173-9:£74.99
www.routledge.com/9780367441739

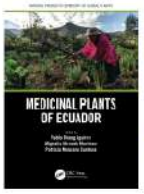
Medicinal Plants of Borneo
Edited by **Simon Gibbons, Stephen P. Teo**
May 2021 - 189pp
pb: 978-1-138-60107-9: £74.99
www.routledge.com/9781138601079



Medicinal Plants and Mushrooms of Yunnan Province of China
Edited by Clara Bik-San Lau, Chun-lin Long
June 2021- 322pp
pb: 978-1-032-02338-0: £99.99
www.routledge.com/9781032023380



Natural Products Chemistry of Botanical Medicines from Cameroonian Plants
Edited by **Xavier Siwe-Noundou**
September 2021 220pp, pb: 978-1-138-58142-5: £74.99
www.routledge.com/9781138581425



Medicinal Plants of Ecuador
Edited by Pablo Chong Aguirre, Migdalia Miranda Martinez
Patricia Manzano Santana
November 2022 228pp, pb: 978-1-032-00398-6: £59.99
www.routledge.com/9781032003986

Medicinal Plants of Laos
Edited by **Djaja Djendoel Soejarto, Bethany G. Elkington,**
Kongmany Sydara
April 2023 264pp, pb: 978-1-032-07777-2: £74.99
www.routledge.com/9781032077772

This unique book series focuses on the natural products chemistry of botanical medicines from different countries such as Turkey, Sri Lanka, Bangladesh, Vietnam, Brazil, China, S. Africa, Thailand, Borneo, Cameroon, Uganda and Madagascar, These fascinating volumes are written by experts from their respective countries. The series will focus on the pharmacognosy, covering recognized areas rich in folklore as well as botanical medicinal uses as a platform to present the natural products and organic chemistry. Where possible, the authors will link these molecules to pharmacological modes of action. The series intends to trace a route through history from ancient civilizations to the modern day showing the importance to man of natural products in medicines, in foods and a variety of other ways.

ii

A qualitative study of the barriers to using blinding in in vivo experiments and suggestions for improvement

Author:

Natasha A. Karp, Esther J. Pearl, Emma J. Stringer, Chris Barkus, Jane Coates Ulrichsen, Nathalie Percie du Sert

Journal: *Plos Biology*

Detail: https://doi.org/10.1371/journal.pbio.3001873

PLOS BIOLOGY

META-RESEARCH ARTICLE

A qualitative study of the barriers to using blinding in in vivo experiments and suggestions for improvement

Natasha A. Karp[1]*, Esther J. Pearl[2], Emma J. Stringer[3], Chris Barkus[2], Jane Coates Ulrichsen[4], Nathalie Percie du Sert[2]

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Check for updates

OPEN ACCESS

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Academic Editor: Cilene Lino de Oliveira, Universidade Federal de Santa Catarina, BRAZIL

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Data Availability Statement: In accordance with our ethical permissions, for each experiment, the data (study type, randomisation strategy, the

Abstract

In animal experiments, blinding (also known as masking) is a methodological strategy to reduce the risk that scientists, animal care staff, or other staff involved in the research may consciously or subconsciously influence the outcome. Lack of masking has been shown to correlate with an overestimation of treatment efficacy and false positive findings. We conducted exploratory interviews across academic and a commercial setting to discuss the implementation of masking at four stages of the experiment: during allocation and intervention, during the conduct of the experiment, during the outcome assessment, and during the data analysis. The objective was to explore the awareness, engagement, perceptions, and the barriers to implementing masking in animal experiments. We conducted multiple interviews, to explore 30 different experiments, and found examples of excellent practice but also areas where masking was rarely implemented. Significant barriers arose from the operational and informatic systems implemented. These systems have prioritised the management of welfare without considering how to allow researchers to use masking in their experiments. For some experiments, there was a conflict between the management of welfare for an individual animal versus delivering a robust experiment where all animals are treated in the same manner. We identified other challenges related to the level of knowledge on the purpose of masking or the implementation and the work culture. The exploration of these issues provides insight into how we, as a community, can identify the most significant barriers in a given research environment. Here, we offer practical solutions to enable researchers to implement masking as standard. To move forward, we need both the individual scientists to embrace the use of masking and the facility managers and institutes to engage and provide a framework that supports the scientists.

Introduction

Masking (also known as blinding) is a methodological process where the allocation to an experimental group (a group of test subjects that receives the same intervention in an

PLOS Biology | https://doi.org/10.1371/journal.pbio.3001873 November 17, 2022 1 / 23

> A qualitative study of the barriers to using blinding in in vivo experiments and suggestions for improvement (Karp et al., 2022). Blinding (also known as masking) is an important principle of experimental design that should be implemented to avoid conscious or unconscious bias. The NC3Rs (along with collaborators at AstraZeneca and elsewhere) have recently published a new paper exploring the barriers to implementing masking in animal research and how to overcome these – including practical tips and a case study using masking throughout the experiment.

iii

Quality control and analytic best practices for testing genetic models of sex differences in large populations

Author:

Ekaterina A. Khramtsova, Melissa A. Wilson, Joanna Martin, Stacey J. Winham, Karen Y. He, Lea K. Davis. and Barbara E. Stranger

Journal: *Cell*

Detail: https://doi.org/10.1016/j.cell.2023.04.014

CellPress

Cell
Leading Edge

Primer

Quality control and analytic best practices for testing genetic models of sex differences in large populations

Ekaterina A. Khramtsova,[1,*] Melissa A. Wilson,[2] Joanna Martin,[3] Stacey J. Winham,[4] Karen Y. He,[1] Lea K. Davis,[5,6] and Barbara E. Stranger[7,*]
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https://doi.org/10.1016/j.cell.2023.04.014

SUMMARY

Phenotypic sex-based differences exist for many complex traits. In other cases, phenotypes may be similar, but underlying biology may vary. Thus, sex-aware genetic analyses are becoming increasingly important for understanding the mechanisms driving these differences. To this end, we provide a guide outlining the current best practices for testing various models of sex-dependent genetic effects in complex traits and disease conditions, noting that this is an evolving field. Insights from sex-aware analyses will not only teach us about the biology of complex traits but also aid in achieving the goals of precision medicine and health equity for all.

INTRODUCTION

Sex-associated properties influence human health and disease through many dimensions including gametes produced, hormone levels, and variation in sex chromosome complement. Most complex human traits and disease conditions exhibit sex and gender differences, including differences in incidence and distribution of trait characteristics.[1] Using data from a complete population with free and equal access to high-quality healthcare, Westergaard et al. demonstrate that more than half of ICD-10 (International Classification of Diseases, Tenth Revision—a coding system for classifying health-related conditions) diagnoses have sex-specific, age-adjusted incidence rates, age of first diagnosis is on average higher in women, and that sex drives diagnosis co-occurrence and population-level risks. Furthermore, analysis of multi-step trajectories uncovers sex-based differences in longitudinal patterns that are most notable in the areas of injuries and substance abuse, cancer, and osteoporosis.[2] Sex and gender are two different but related concepts that are frequently conflated in scientific research (see Box 1). Precision medicine seeks to move beyond crude classifications like sex, focusing on more specific health factors. DiMarco and colleagues[3] argue that a "sex contextualist" framework would analyze sex-related biological variables in well-specified contexts, acknowledging that male-female comparisons may not always be sufficient or generalizable. Furthermore, they argue that treating sex as a binary biological variable without considering research context, social dimensions, or intersecting demographic and environmental variables is imprecise. Given the complexity and importance of studying the impact of both sex and gender on human health, our first recommendation is that scientists, journals, and funders adopt much more precise definitions of the terms "sex" and "gender" recognizing that these definitions continue to evolve. Researchers should not use these terms interchangeably, and they should provide definitions and descriptions of methods used to gather sex- and gender-based data, including a discussion of any limitations those methods generate. Other sex-aware analysis terms are defined in Box 2.

Accumulating evidence from model organisms and human studies highlights the importance of focusing on sex differences for advancing our understanding of the complex molecular etiologies of disease. For example, a landmark study of cerebral ischemia in a murine model demonstrated that pharmacological inhibition of molecular pathways leading to cell injury benefits the brains of male mice but exacerbates injury in female mice.[8] There are multiple examples of approved pharmacological therapies that the U.S. Food and Drug Administration removed from the market due to damaging or toxic effects in one sex, typically

How should sex-shared, differential and opposite effects properly discovered?

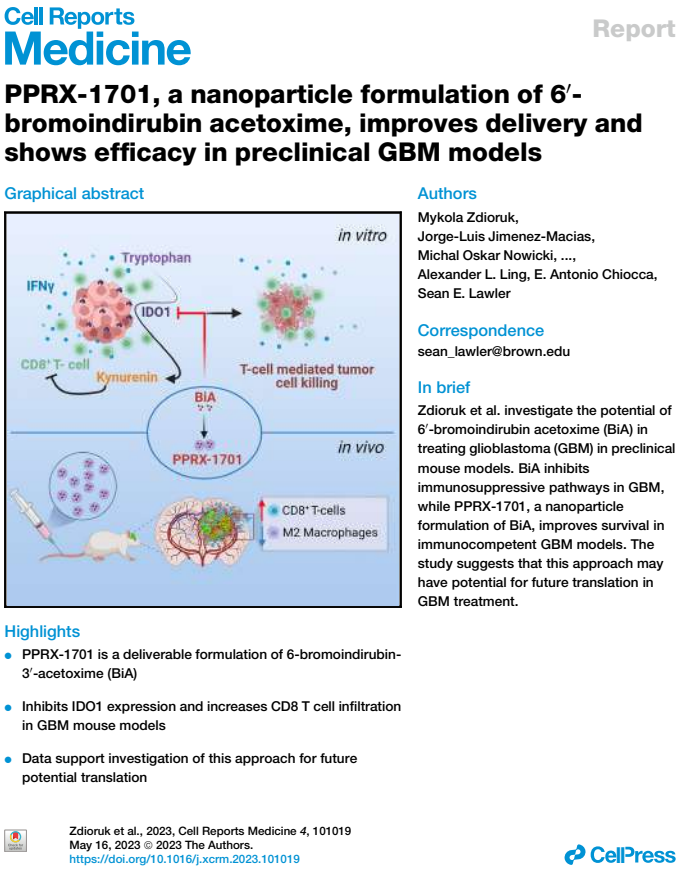
iv

Efficacy and safety of naotaifang capsules for hypertensive cerebral small vessel disease: Study protocol for a multicenter, randomized, double-blind, placebo-controlled clinical trial

Author: Mykola Zdioruk, Jorge-Luis Jimenez-Macias, Michal Oskar Nowicki, Katherine E Manz, Kurt D Pennell, Marilin S Koch, Tomer Finkelberg, Bin Wu, Paul Boucher, Yuji Takeda, Weiyi Li, Raziye Piranlioglu, Alexander L Ling, E Antonio Chiocca, Sean E Lawler

Journal: *Cell Reports Medicine*

Detail: https://doi.org/10.1016/j.xcrm.2023.101019



Cell Reports Medicine

Report

PPRX-1701, a nanoparticle formulation of 6′-bromoindirubin acetoxime, improves delivery and shows efficacy in preclinical GBM models

Graphical abstract

Authors

Mykola Zdioruk, Jorge-Luis Jimenez-Macias, Michal Oskar Nowicki, ..., Alexander L. Ling, E. Antonio Chiocca, Sean E. Lawler

Correspondence

sean_lawler@brown.edu

In brief

Zdioruk et al. investigate the potential of 6′-bromoindirubin acetoxime (BiA) in treating glioblastoma (GBM) in preclinical mouse models. BiA inhibits immunosuppressive pathways in GBM, while PPRX-1701, a nanoparticle formulation of BiA, improves survival in immunocompetent GBM models. The study suggests that this approach may have potential for future translation in GBM treatment.

Highlights

- PPRX-1701 is a deliverable formulation of 6-bromoindirubin-3′-acetoxime (BiA)
- Inhibits IDO1 expression and increases CD8 T cell infiltration in GBM mouse models
- Data support investigation of this approach for future potential translation

Zdioruk et al., 2023, Cell Reports Medicine *4*, 101019
May 16, 2023
https://doi.org/10.1016/j.xcrm.2023.101019

CellPress

Harvard University:

Components of traditional Chinese medicine formula can treat malignant brain tumors, adding new evidence of Chinese medicine anti-cancer

News and photo adapted from link below:

https://mbd.baidu.com/newspage/data/landingsuper?pageType=1&sShare=1&isBdboxFrom=1&urlext=%7B%22cuid%22%3A%22gav38guTHagZiHaajuvyi_8uS8_fuvid_aSni_uvSaKs0qqSB%22%7D&sid_for_share&context=%7B%22nid%22%3A%22news_9968158110820148709%22,%22sourceFrom%22%3A%22bjh%22%7D

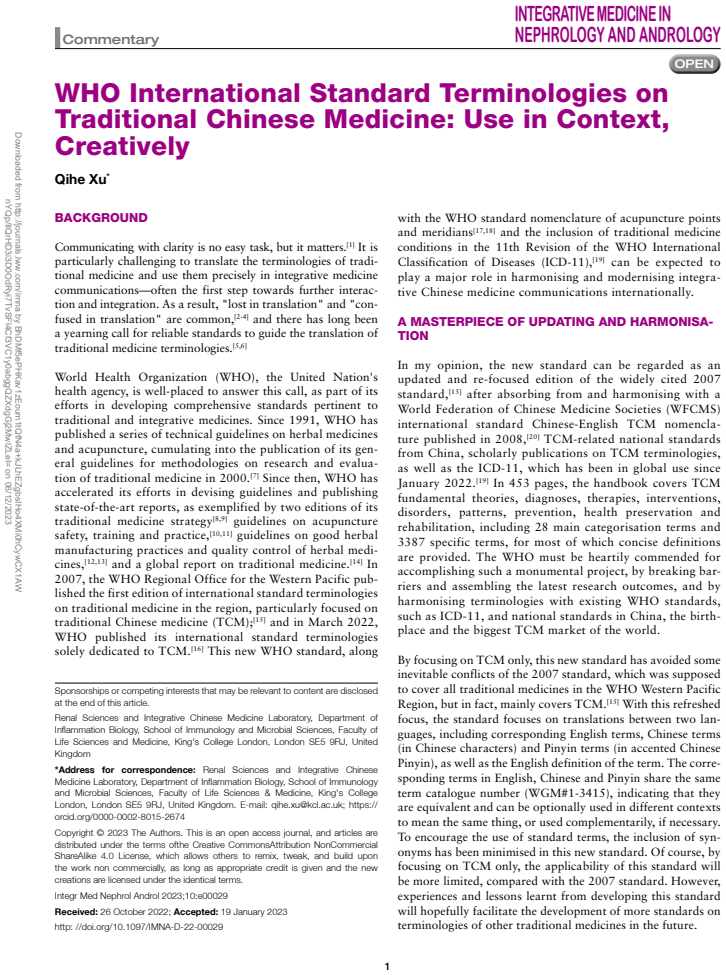
V

WHO International Standard Terminologies on Traditional Chinese Medicine: Use in Context, Creatively

Author: Qihe Xu

Journal: *Integrative Medicine in Nephrology and Andrology*

Detail: https://journals.lww.com/imna/Fulltext/2023/06000/WHO_International_Standard_Terminologies_on.29.aspx



Commentary

INTEGRATIVE MEDICINE IN NEPHROLOGY AND ANDROLOGY

OPEN

WHO International Standard Terminologies on Traditional Chinese Medicine: Use in Context, Creatively

Qihe Xu*

BACKGROUND

Communicating with clarity is no easy task, but it matters.[1] It is particularly challenging to translate the terminologies of traditional medicine and use them precisely in integrative medicine communications—often the first step towards further interaction and integration. As a result, "lost in translation" and "confused in translation" are common,[2-4] and there has long been a yearning call for reliable standards to guide the translation of traditional medicine terminologies.[5,6]

World Health Organization (WHO), the United Nation's health agency, is well-placed to answer this call, as part of its efforts in developing comprehensive standards pertinent to traditional and integrative medicines. Since 1991, WHO has published a series of technical guidelines on herbal medicines and acupuncture, cumulating into the publication of its general guidelines for methodologies on research and evaluation of traditional medicine in 2000.[7] Since then, WHO has accelerated its efforts in devising guidelines and publishing state-of-the-art reports, as exemplified by two editions of its traditional medicine strategy[8,9] guidelines on acupuncture safety, training and practice,[10,11] guidelines on good herbal manufacturing practices and quality control of herbal medicines,[12,13] and a global report on traditional medicine.[14] In 2007, the WHO Regional Office for the Western Pacific published the first edition of international standard terminologies on traditional medicine in the region, particularly focused on traditional Chinese medicine (TCM);[15] and in March 2022, WHO published its international standard terminologies solely dedicated to TCM.[16] This new WHO standard, along with the WHO standard nomenclature of acupuncture points and meridians[17,18] and the inclusion of traditional medicine conditions in the 11th Revision of the WHO International Classification of Diseases (ICD-11),[19] can be expected to play a major role in harmonising and modernising integrative Chinese medicine communications internationally.

A MASTERPIECE OF UPDATING AND HARMONISATION

In my opinion, the new standard can be regarded as an updated and re-focused edition of the widely cited 2007 standard,[15] after absorbing from and harmonising with a World Federation of Chinese Medicine Societies (WFCMS) international standard Chinese-English TCM nomenclature published in 2008.[20] TCM-related national standards from China, scholarly publications on TCM terminologies, as well as the ICD-11, which has been in global use since January 2022.[19] In 453 pages, the handbook covers TCM fundamental theories, diagnoses, therapies, interventions, disorders, patterns, prevention, health preservation and rehabilitation, including 28 main categorisation terms and 3387 specific terms, for most of which concise definitions are provided. The WHO must be heartily commended for accomplishing such a monumental project, by breaking barriers and assembling the latest research outcomes, and by harmonising terminologies with existing WHO standards, such as ICD-11, and national standards in China, the birthplace and the biggest TCM market of the world.

By focusing on TCM only, this new standard has avoided some inevitable conflicts of the 2007 standard, which was supposed to cover all traditional medicines in the WHO Western Pacific Region, but in fact, mainly covers TCM.[15] With this refreshed focus, the standard focuses on translations between two languages, including corresponding English terms, Chinese terms (in Chinese characters) and Pinyin terms (in accented Chinese Pinyin), as well as the English definition of the term. The corresponding terms in English, Chinese and Pinyin share the same term catalogue number (WGM#1-3415), indicating that they are equivalent and can be optionally used in different contexts to mean the same thing, or used complementarily, if necessary. To encourage the use of standard terms, the inclusion of synonyms has been minimised in this new standard. Of course, by focusing on TCM only, the applicability of this standard will be more limited, compared with the 2007 standard. However, experiences and lessons learnt from developing this standard will hopefully facilitate the development of more standards on terminologies of other traditional medicines in the future.

Sponsorships or competing interests that may be relevant to content are disclosed at the end of this article.

Renal Sciences and Integrative Chinese Medicine Laboratory, Department of Inflammation Biology, School of Immunology and Microbial Sciences, Faculty of Life Sciences and Medicine, King's College London, London SE5 9RJ, United Kingdom

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Integr Med Nephrol Androl 2023;10:e00029

Received: 26 October 2022; **Accepted:** 19 January 2023

http: //doi.org/10.1097/IMNA-D-22-00029

1

Xu Q. WHO International Standard Terminologies on Traditional Chinese Medicine: Use in Context, Creatively. Intear Med Nephrol Androl 2023:10:e00029. Communicating with clarity is no easy task, but it matters. It is particularly challenging to translate the terminologies of traditional medicine and use them precisely in integrative medicine communications — often the first step towards further interaction and integration. As a result,"lost in translation" and "confused in translation" are common, and there has long been a yearning call for reliable standards to guide the translation of traditional medicine terminologies,...

vi

Applications of single-cell RNA sequencing in drug discovery and development

Author:

Bram Van de Sande, Joon Sang Lee, Euphemia Mutasa-Gottgens, Bart Naughton, Wendi Bacon, Jonathan Manning, Yong Wang, Jack Pollard, Melissa Mendez, Jon Hill, Namit Kumar, Xiaohong Cao, Xiao Chen, Mugdha Khaladkar, Ji Wen, Andrew Leach & Edgardo Ferran

Journal: *Nature Reviews Drug Discovery*
Detail: https://doi.org/10.1038/s41573-023-00688-4

nature reviews drug discovery https://doi.org/10.1038/s41573-023-00688-4

Review article Check for updates

Applications of single-cell RNA sequencing in drug discovery and development

Bram Van de Sande[1,15], Joon Sang Lee[2,15], Euphemia Mutasa-Gottgens[3,15] ✉, Bart Naughton[4], Wendi Bacon[3,5], Jonathan Manning[3], Yong Wang[6], Jack Pollard[7], Melissa Mendez[8], Jon Hill[9], Namit Kumar[10], Xiaohong Cao[11], Xiao Chen[12], Mugdha Khaladkar[13], Ji Wen[14], Andrew Leach[3] & Edgardo Ferran[3]

Abstract

Single-cell technologies, particularly single-cell RNA sequencing (scRNA-seq) methods, together with associated computational tools and the growing availability of public data resources, are transforming drug discovery and development. New opportunities are emerging in target identification owing to improved disease understanding through cell subtyping, and highly multiplexed functional genomics screens incorporating scRNA-seq are enhancing target credentialling and prioritization. ScRNA-seq is also aiding the selection of relevant preclinical disease models and providing new insights into drug mechanisms of action. In clinical development, scRNA-seq can inform decision-making via improved biomarker identification for patient stratification and more precise monitoring of drug response and disease progression. Here, we illustrate how scRNA-seq methods are being applied in key steps in drug discovery and development, and discuss ongoing challenges for their implementation in the pharmaceutical industry.

Sections

[1]UCB Pharma, Braine l'Alleud, Belgium. [2]Precision Oncology, Sanofi, Cambridge, MA, USA. [3]EMBL-EBI, Wellcome Genome Campus, Hinxton, UK. [4]Computational Neurobiology, Eisai, Cambridge, MA, USA. [5]The Open University, Milton Keynes, UK. [6]Precision Bioinformatics, Prometheus Biosciences, San Diego, CA, USA. [7]Moderna Inc., Cambridge, MA, USA. [8]Genomic Sciences, GlaxoSmithKline, Collegeville, PA, USA. [9]Global Computational Biology and Digital Sciences, Boehringer Ingelheim Pharmaceuticals Inc., Ridgefield, CT, USA. [10]Informatics & Predictive Sciences, Bristol Myers Squibb, San Diego, CA, USA. [11]Genomic Research Center, AbbVie Inc., Cambridge, MA, USA. [12]Magnet Biomedicine, Cambridge, MA, USA. [13]Human Genetics and Computational Biology, GlaxoSmithKline, Collegeville, PA, USA. [14]Oncology Research and Development Unit, Pfizer, La Jolla, CA, USA. [15]These authors contributed equally: Bram Van de Sande, Joon Sang Lee, Euphemia Mutasa-Gottgens. ✉e-mail: effie@ebi.ac.uk

vii

A selection of recently published papers in Frontiers in Pharmacology

frontiers **Journal: *Frontiers in Pharmacology***

The signaling pathways of traditional Chinese medicine in treating diabetic retinopathy

Detail: https://www.frontiersin.org/articles/10.3389/fphar.2023.1165649/full

Saponins of ginseng products: a review of their transformation in processing

Detail: https://www.frontiersin.org/articles/10.3389/fphar.2023.1177819/full

Utilization patterns and prescription characteristics of traditional Chinese medicine among patients with irritable bowel syndrome in Taiwan

Detail: https://www.frontiersin.org/articles/10.3389/fphar.2023.1201240/full

2023
Aug.
18

The 19th International Postgraduates Symposium on Chinese Medicine (IPSCM)

Date: 18 August 2023

Details: Google 百度网盘

2023
Aug.
22-23

19th Meeting of CGCM

Date: 22-24 August 2023

Details: www.cgcm2023.com

2023
Sept.
18-20

The 11th GP-TCM RA Annual Meeting

Date: 18-20/09/2023
Location: Leiden, The Netherlands

The 11th Annual Meeting of Good Practice in Traditional Chinese Medicine Research Association (GP-TCM RA)

All are welcome!

18-20 September 2023

Leiden, The Netherlands

Meeting venue: Fletcher Wellness Hotel Leiden

For more details, please refer to GP-TCM RA website: www.gp-tcm.org

Please use below link for registration:
https://form.jotform.com/231291829987371

Please scan this QR code if the link does not work

Don't miss out the early bird rate for registration, ends on 30 June 2023

Women Scientists in Ethnopharmacological Research

Statistics show that women remain under-represented in areas of Science and this is also reflected by their under-representation on the editorial boards of scientific journals. In view of the commitment of Elsevier to address this disparity, and in line with our inclusive approach to embrace and promote diversity, the *Journal of Ethnopharmacology* (JEP) will be devoting a special issue to showcase and celebrate distinguished women researchers in the field of Ethnopharmacology. The special issue will be a collection of experimental and review papers submitted by female corresponding authors. We encourage submissions that are related to women's health, but this is not mandatory.

The Guest Editors for this special issue are our own women Associate and Managing Editors:

Associate Editors

- **Prof. Clara Bik-San Lau**
  The Chinese University of Hong Kong, China
- **Prof. Esra Küpeli Akkol**
  Gazi Universitv. Turkey
- **Prof. Patricia Dias Fernandes**
  Federal University of Rio de Janeiro, Brazil
- **Prof. Khozirah Shaari**
  University of Putra Malaysia, Malaysia
- **Prof. Ling-Dong Kong**
  State Key Laboratory of Pharmaceutical Biotechnology, Nanjing, China

Managing Editors

- **Dr. Sandra Combrinck**
  Tshwane University of Technology, South AfricaProf. Esra Küpeli Akkol
- **Dr. Gerda Fouche**
  University of Pretoria, South Africa
- **Dr. Maxleene Sandasi**
  Tshwane University of Technology, South Africa
- **Dr. Ilze Vermaak**
  Tshwane University of Technology, South Africa

Submission Information

Please submit your manuscript by July 31st, 2023.

Submission platform: Editorial Manager https://www.editorialmanager.com/jethno/default2.aspx

Please refer to the Guide for Authors to prepare your manuscript and select the correct article type when submitting your manuscript online. Both the Guide for Authors and the submission portal could be found on the Journal Homepage here:

Journal of Ethnopharmacology ScienceDirect.com by Elsevier
https://www.sciencedirect.com/journal/journal-of-ethnopharmacology?start_rank=701&cat0=agricultural-and-biological-sciences

You will be requested to upload a small photograph and short biography (max 200 words) for each author.

ii Journal: *Frontiers in Pharmacology* frontiers

Topic	**Women in Ethnopharmacology: 2023**
Deadline	22 July 2023 (Abstract), 19 November 2023(Manuscript)
Details	https://www.frontiersin.org/research-topics/55735/women-in-ethnopharmacology-2023
Editor(s)	**Valentina Echeverria Moran** Bay Pines VA Healthcare System, Veterans Health Administration, United States **Marilena Gilca** Carol Davila University of Medicine and Pharmacy, Bucharest, Romania **Irene Villasenor** University of the Philippines Diliman, Quezon City, Philippines **Pollyanna Francielli de Oliveira** Federal University of Alfenas Alfenas, Brazil **Shan-Yu Su** China Medical University (Taiwan), Taichung, Taiwan

iii Journal: *Frontiers in Pharmacology* frontiers

Topic	**Developing Traditional Medicines Mechanisms – Opportunities Offered Based on Microfluidic Technology, Organoids, Artificial Intelligence, and 3D Printing**
Deadline	28 October 2023
Details	https://www.frontiersin.org/research-topics/56014/developing-traditional-medicines-mechanisms---opportunities-offered-based-on-microfluidic-technology-organoids-artificial-intelligence-and-3d-printing
Editor(s)	**Fan Xu** Anhui University of Chinese Medicine, China **Dayue Darrel Darrel Duan** University of Nevada, United States **Yue Liu** Cardiovascular Diseases Center, Xiyuan Hospital, China **Yuanjia Hu** University of Macau, China **Hongyue Ma** Nanjing University of Chinese Medicine, China

Topic	**Spotlight on the Traditional Medicine in Prevention and Treatment of Diabetes in the Aging Population**
Deadline	16 July 2023 (Abstract), 16 November 2023(Manuscript)
Details	https://www.frontiersin.org/research-topics/55754/spotlight-on-the-traditional-medicine-in-prevention-and-treatment-of-diabetes-in-the-aging-population
Editor(s)	**Guanhu Yang** Ohio University, United States **Jiangang Shen** The University of Hong Kong, China **Shenbin Liu** Fudan University, China

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Editorial Board	https://amm-journal.org/index.php/editorial-board/
Queries	Any enquiries about the journal can be sent to editorialoffice@amm-journal.org

For more information about the journal, including article submission guidelines and how to register for free content-alerting services, please visit: https://amm-journal.org/

Acta Materia Medica is now open for submissions via ScholarOne (https://mc04.manuscriptcentral.com/ammed).

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Editorial Board: https://amm-journal.org/index.php/editorial-board/

Twitter: @AMM_journal

澳門大學
UNIVERSIDADE DE MACAU
UNIVERSITY OF MACAU

i

Full/Associate/Assistant Professor in Chinese Medicine,
Institute of Chinese Medical Sciences. University of Macau, China

Details: https://career.admo.um.edu.mo/icms_cm_faa_07_2022/

香港中文大學
The Chinese University of Hong Kong

ii

Research Assistant(s), Institute of Chinese Medicine,
The Chinese University of Hong Kong

Details: https://cuhk.taleo.net/careersection/cu_career_non_teach/jobdetail.ftl?job=210002PD&tz=GMT%2B08%3A00&tzname=Asia%2FMacau

iii

Postdoctoral Fellow(s), Institute of Chinese Medicine,
The Chinese University of Hong Kong

Details: https://cuhk.taleo.net/careersection/cu_career_non_teach/jobdetail.ftl?job=210002PE&tz=GMT%2B08%3A00&tzname=Asia%2FMacau

香港浸會大學
HONG KONG BAPTIST UNIVERSITY

iv

Post-Doctoral Research Fellow,
Centre for Chinese Herbal Medicine Drug Development,
School of Chinese Medicine, Hong Kong Baptist University

Details: https://hro.hkbu.edu.hk/index.php?page_id=6&job_id=6742&f=job_details

Student's Corner

Postgraduate Opportunities

Opportunities in Europe

Germany

https://academicpositions.com/ad/cologne-graduate-school-ageing-research-cga/2022/12-fully-funded-phd-positions/181690?utm_source=facebook&utm_medium=cpc&utm_campaign=scm-cga-092022+med-hi

https://www.humboldt-foundation.de/en/apply/sponsorship-programmes/humboldt-research-fellowship

https://www.daad.de/en/study-and-research-in-germany/

Postgraduate Opportunities

Opportunities around the world

Gratz - Austria

https://agristok.net/2022/09/03/phd-fully-funded-position-in-plant-molecular-biology-at-university-of-graz-in-austria/

International

https://jobs.msd.com/gb/en/job/R197090/Scientist-Medicinal-Chemistry/?utm_source=linkedin&utm_campaign=job-share&utm_medium=social-share

Denmark

https://www.dtu.dk/om-dtu/job-og-karriere/ledige-stillinger/job?id=d2e2591d-1d14-43ff-8557-6e6ce0fc3a58

Back to content page

Postgraduate Opportunities

Opportunities around the world

Australia

University of Melbourne
https://lnkd.in/dxjXv-JJ8

Ireland

Irish Research Council
https://research.ie/funding/

Singapore

https://lnkd.in/dra7MV8

Scientists wanting to go into business – fully Undergraduate/ Postgraduate/ PhD graduate degrees in Management – Basic degree multi centre with significant funding

– VERY INTERESTING PROGRAMME

https://www.spjain.ae

UK: register for job alerts

https://charnwoodmolecular.livevacancies.co.uk/#/

Freely Accessible Learning Material

Interesting articles

Studying abroad

https://www.science.org/content/article/doing-research-abroad-felt-lonely-heres-how-i-made-friends?utm_campaign=SciMag&utm_source=Social&utm_medium=LinkedIn

Intellectual property

like

https://micheonip.com/intellectual-poperty-non-disclosure-agreement/?utm_campaign=Michelson&20Institute%20for%20intellectual%20Property&utm_content=212335938&utm_medium=social&utm_source=linkedin&hss_channel=lcp-42772499

Freely Accessible Learning Material

Online learning Platforms

Fantastic resource. Courses from all disciplines. Free to study. Accreditation available at a cost.

Well worth exploring

- https://www.edx.org/
- https://englishforuniversity.com/resources/
- https://owl.purdue.edu/

Webinar- How To Avoid Plagiarism?
Webinar to give information re plagiarism

- https://www.youtube.com/watch?v=sHhGY4c61v4
- https://www.youtube.com/watch?v=33R43YF9DzI

Freely Accessible Learning Material

Free Lecture series

Integrative Medicine Research Lecture Series

Information and resources from the National Center for Complemenary and Integrative Health, U.S. National Institutes of Health (NIH).

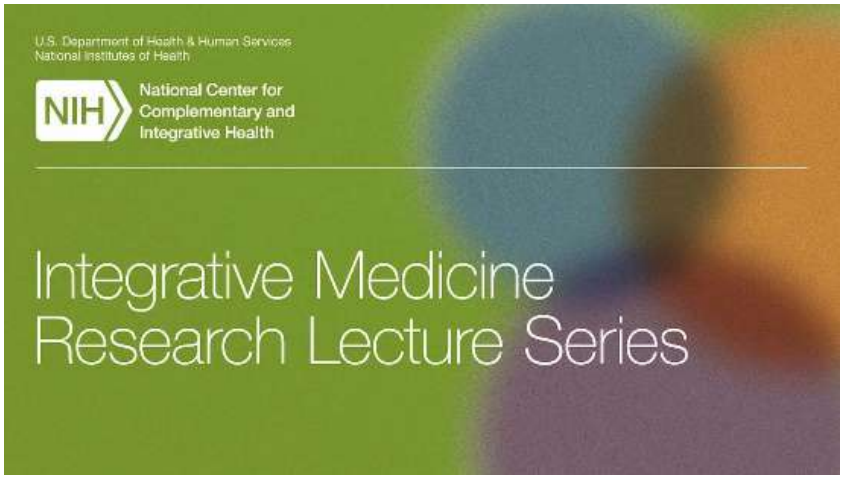
- www.nccih.gov

GREAT SELECTION OF WEBINARS

- https://www.herbalgram.org/news/webinar-page/

KEEP AN EYE ON

https://www.pharmacognosy.us/
https://www.herbalgram.org



https://www.nccih.nih.gov/news/events/imlectures?nav=li

Great Selection of Webinars - From the Sustainable Herbs Programme

Botanical Supply Sustainability in the Time of COVID

- https://vimeo.com/457513678

Plants, People & Culture: The Science of Ethnobotany

- https://vimeo.com/460565477

The Business Case for Sustainability

- https://vimeo.com/465447452

Cross-cultural Understanding of Local Herbal Knowledge and Chinese traditional Daodi Materia Medica

- https://vimeo.com/668389245

Sourcing Botanicals and Quality Control: A Conversation with Michael Heinrich and Anthony Booker

- https://vimeo.com/642467580

Introducing the WildCheck Report: Assessing Risk & Opportunities of Trade in Wild Plant Ingredients

- https://vimeo.com/704246800

Certifications as a Path to Sustainability? A Conversation about the Opportunities and Limits of Certification

- https://vimeo.com/540314958

AND MANY MORE

https://vimeo.com/457513678

Buchi Mini series of webinars – covering Drug Discovery Using Natural Resources

The speaker: Prof. Dr. Elfahmi

There is a separate registration requirement for each webinar.

https://cloud.infohub.buchi.com/drug-discovery/with-prof-elfahmi?utm_source=email1&utm_medium=email&Id=00Q3X00001MfiqzUAB&id_mc=34316261&utm_campaign=gl-2022-webinars-mini-webinars-with-prof-elfami&cloudpage_id=4865&cloudpage_id2=&cloudpage_id3=

Episode 1: Drug Discovery and Development Workflow

Discover four essential steps in drug discovery and development: literature review & preliminary screening, biology development, physiochemical & pharmaceutical development. Gain a process overview for the isolation of active compounds from plants using bioactivity-guided fractionation.

Episode 2: Concentration of Natural Products

Explore the workflow for processing of natural compounds: sampling & crushing, extraction & concentration; fractionation & purification; structure identification and product packaging. Learn about extract/fraction concentration through solvent removal by rotary evaporation. Find challenges and solutions to efficiency, foaming, bumping, plus optimization tips for temperature difference, pressure values, flask size, rotation speed and condenser loading.

Episode 3: Purification Techniques for Natural Products

Learn fundamentals and protocols for relevant methods, including liquid-liquid fractionation (phase separation), winterization, microporous resin chromatography, flash and vacuum liquid chromatography, radial chromatography, crystallization, preparative column chromatography. See it in action with a case study on the purification of asiaticoside & madecassoside from *Centella asiatica.*

Episode 4: Past, Present and Future of Herbal Medicines

Gain a comprehensive overview of the history of plant use in drugs and pharmacy, including milestones in the development of herbal medicines. See current global use, benefits and challenges facing alternative or traditional medicine. Look into the future of herbal medicine development with predictions on how this branch will develop.

Back to content page

International Conferences

Conference information

Lots of interesting and relevant conferences to be found at these links.

Traditional medicine Conferences in 2023

- https://waset.org/traditional-medicine-conferences-in-2023

Phytochemistry Conferences

- https://waset.org/phytochemistry-conferences

International Conferences

GA Conference Trinity College Dublin Ireland

NatPro, the trinity Centre for natural product Research, is privileged to host the 71st International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA) at Trinity College Dublin, taking place from 2nd to 5th July 2023.

https://www.tcd.ie/natpro/events

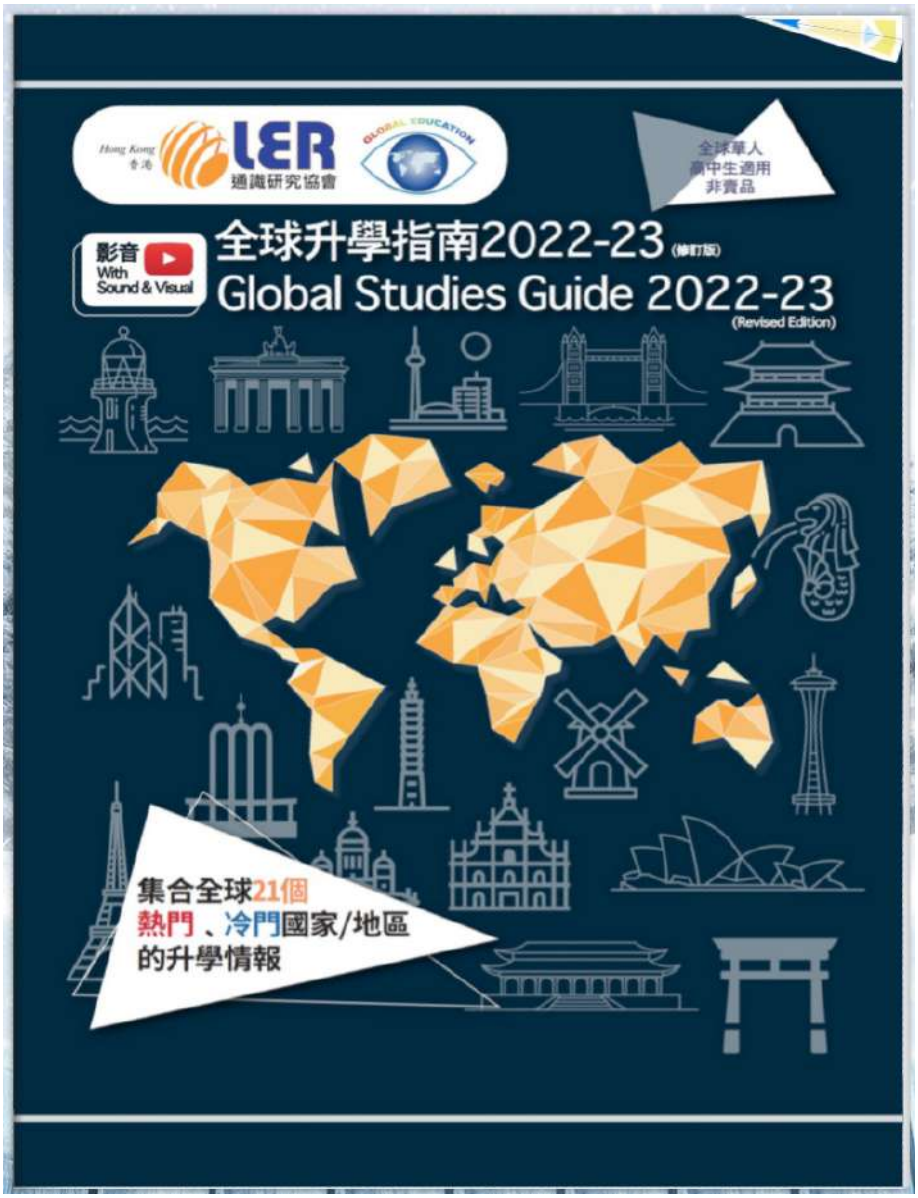
This will be the first time the GA Congress will be held in Ireland and will involve four days of international science and networking opportunities through a program of plenary lectures, keynote presentations, short lectures, workshops and exhibitions. Further, it will be an opportunity to visit the Emerald Isle!

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

China Scholarship Council (CSC) – Trinity College Dublin Joint Scholarship Programme

Details: https://www.tcd.ie/study/international/scholarships/Postgraduate/csc.php

Global Studies Guide 2022-23



Details: https://online.fliphtml5.com/pwsrn/pjso/

香港中文大學中醫學院
School of Chinese Medicine
The Chinese University of Hong Kong

ii

PhD in Chinese Medicine

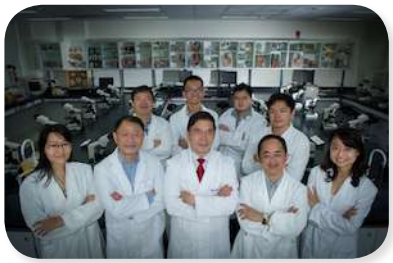
School of Chinese Medicine ,

The Chinese University of Hong Kong

Details: http://www.scm.cuhk.edu.hk/en-gb/programs/research-master-doctoral-program/phd-in-chinese-medicine

香港浸會大學
HONG KONG BAPTIST UNIVERSITY
School of 中醫藥學院
Chinese Medicine

iii



Doctor of Philosophy (PhD) in Biomedical Sciences/ Chinese Medicine/ Translational Medicine/ Pharmacy in Chinese Medicine

School of Chinese Medicine, Hong Kong Baptist University

Details: https://scm.hkbu.edu.hk/en/education/research_postgraduate_programmes/index.html#list/0

HKU Med LKS Faculty of Medicine
The University of Hong Kong
香港大學李嘉誠醫學院

中醫藥學院

iv

PhD in Chinese Medicine

School of Chinese Medicine, The University of Hong Kong

Details: https://scm.hku.hk/Views/Programme/English-MPhilPhD.html

澳門大學
UNIVERSIDADE DE MACAU
UNIVERSITY OF MACAU

中藥質量研究國家重點實驗室（澳門大學）
Laboratório de Referência do Estado para Investigação de Qualidade em Medicina Chinesa (Universidade de Macau)
State Key Laboratory of Quality Research in Chinese Medicine (University of Macau)

中華醫藥研究院
Instituto de Ciências Médicas Chinesas
Institute of Chinese Medical Sciences

v

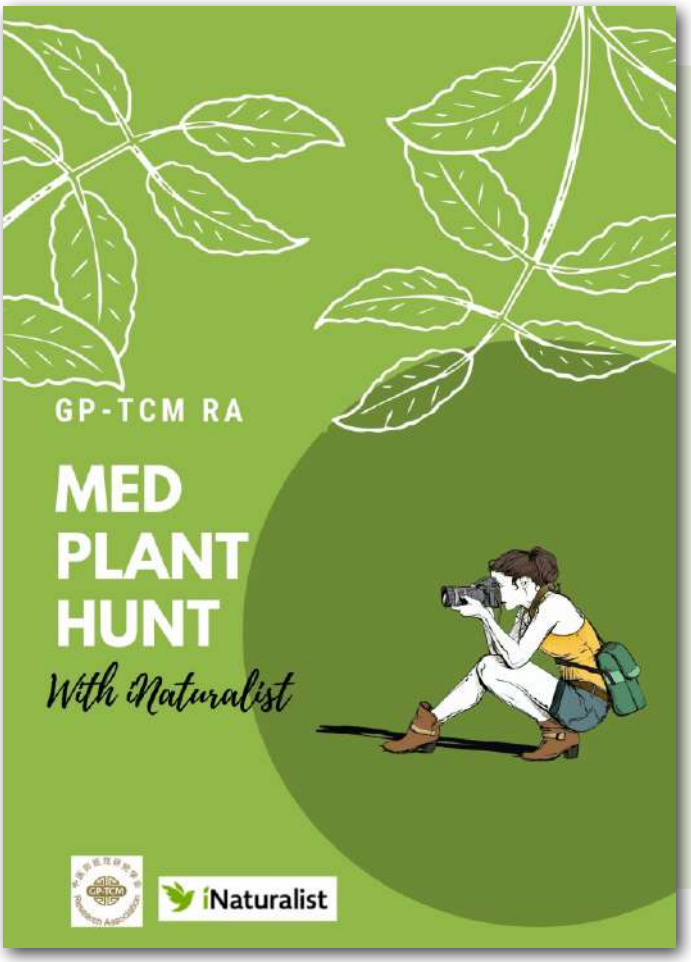
Doctoral Degree in Biomedical Science

Institute of Chinese Medical Sciences, University of Macau

Details: https://sklqrcm.um.edu.mo/doctoral-degree-in-biomedical-science/

Back to content page

Med Plant Hunt with iNaturalist



In order to promote conservation of wildlife, especially wild medicinal plant and TCM herbs, and their environment, a challenge on **"Med Plant Hunt"** is launched.

The aim of challenge is to encourage our members to identify and recognize the morphological features of living wild medicinal plant in nature.

Eligibility:

Med Plant Hunt is free and open to all GP-TCM RA members.

Entries must abide by the guidelines below.

Rules & Guidelines:

iNaturalist is a nature app to help you identify the animals and plants around you and provide a platform to connect you and experts to share about nature. Users can record and share their observations and the findings can enrich scientific data repositories like the Global Biodiversity Information Facility.

Create your own account and share your wild medicinal plant observation to mobile iNaturalist app or iNaturalist website.

How to enter:

1. Complete the registration form with iNaturalist user ID.
2. Make the observation of living wild medicinal plant around you with iNaturalist app/website.
3. With the submitted iNaturalist ID, your observation for entry will be automatically recorded and results will be announced in the coming issue of the newsletter.

How to join

For inquiries about Med Plant Hunt, please send email to
gptcm_medplanthunt@outlook.com

Registration form

How to upload

Med Plant Hunt with iNaturalist

Prizes:

- **Adventurous Observer: The highest number of observed species**
- **TCM Photographer: Best photo shoot**
- **Lucky Observer: Observe rare species**

The selected entries will be published on the next issue of the newsletter. An electronic certificate and **a complementary gift** (e.g. water bottle ideal for outdoor activities, sponsored by Macau Pharmacology Association) will be given.

澳門藥理協會

MED PLANT HUNT
With iNaturalist

Med Plant Hunt Registration Form

Name: Email:

Affiliation: Country or region:

iNaturalist account information
User name:
User email:

(Please send the form to gptcm_medplanthunt@outlook.com for registration)

Online registration | How to join | Registration form | How to upload

Back to content page

Common jujube (*Ziziphus jujuba* var. *jujuba*, Rhamnaceae, 枣 , left) and sour jujube (*Ziziphus jujuba* var. *spinosa*, Rhamnaceae, 酸枣 , right)

Native to China, common jujube (small tree with drupe 1.5-2 cm in diameter, fleshy and sweet-tasting mesocarp, and acute stone) and sour jujube (shrub with drupe less than 1.2 cm in diameter, thin and sour-tasting mesocarp, and obtuse stone) are sources of edible fruits, unifloral honeys, and Chinese medicinals.

Sweet, warm, and harmonious, the dried ripe fruit of common jujube (jujubae fructus) supplements the middle, boosts qi, nourishes blood, and calms the spirit. It is indicated for reduced appetite, lassitude, and loose stools due to spleen deficiency, pallid complexion due to blood deficiency, and emotional lability due to restless organ disorder (hysteria).

Sweet, sour, and neutral, the dried ripe seed of sour jujube (ziziphi spinosae semen) nourishes the heart and the liver, calms the spirit, and stops sweating. It is indicated for palpitation and insomnia due to heart and liver blood deficiency, and spontaneous and/or night sweating due to general weakness.

Relevant Chinese medicinals may involve various botanical origins and different medicinal parts. Hong Kong Government Chinese Medicines Testing Institute has set up a good example to avoid potential adulteration in the herbal markets by conducting macro- and microscopic identification of ziziphi spinosae semen and its commonly confused species (https://www.cmro.gov.hk/html/eng/useful_information/gcmti/research/mmi/monograph_zss.html).

枣

树高十米忆攀爬
卵叶曲枝黄绿花
果脆甜红常入口
如今诗作在天涯

酸枣

曲枝紫褐绿花黄
微果味酸初口尝
数粒仁心催入睡
采风原是在家乡

The above colour photographs, English texts and Chinese poems are contributed by Prof **Hubiao Chen** (Hong Kong), Dr **Ping Guo** (Hong Kong) and Prof **Jiqing Liu** (Shenzhen), respectively. This column is advised by Prof **Zhongzhen Zhao** (Hong Kong).

Just click here to enjoy the video: https://uofmacau-my.sharepoint.com/:v:/g/personal/jesskuok_umac_mo/Ea9LPJ37E1xNnJiQT1fjSVgBbVoAzmDcT7Bdlyw1DRRhYQ?e=j9xqkD

Back to content page

Common jujube (*Ziziphus jujuba* var. *jujuba*, Rhamnaceae, 枣 , left) and sour jujube (*Ziziphus jujuba* var. *spinosa*, Rhamnaceae, 酸枣 , right)

The May-June 2023 Newsletter of GP-TCM Research Association

Just click here to enjoy the video: https://uofmacau-my.sharepoint.com/:v:/g/personal/jesskuok_umac_mo/Ea9LPJ37E1xNnJiQT1fjSVgBbVoAzmDcT7Bdlyw1DRRhYQ?e=j9xqkD