



中药全球化联盟

CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

CGCM 17th Annual Meeting

Regional Report

Taiwan Chapter

Local Chapter Coordinator: Prof. Hen-Hong Chang (張恒鴻)

Secretary General: Prof. Yuan-Shiun Chang (張永勳)

Borneo Convention Centre Kuching (BCCCK), Malaysia

2018/08/8



中药全球化联盟

CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

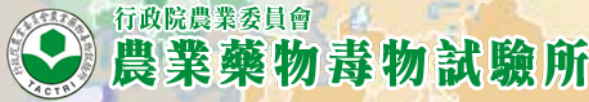
CGCM in Taiwan

Local Chapter Coordinators (23)

1. Institutional Members (18)

2. Industrial Affiliate Members (5)

Select the city where





中药全球化联盟

CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

Board of Directors



Chairman

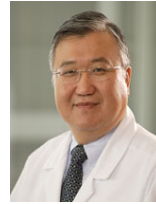
Prof. Yung-chi Cheng
Henry Bronson Professor of
Pharmacology,
Yale University School of Medicine



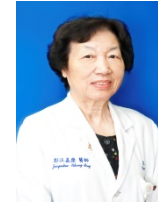
Vice Chairman

Chairman, CGCM Taiwan Chapter
Prof. Hen-Hong Chang
China Medical University

Advisory Board



Prof. Yun Yen
Taipei Medical University



Prof. Jacqueline Whang-Peng
Superintendent
Taipei Cancer Center,
Taipei Medical University

Council Members



Prof. Ning-Sun Yang
Distinguished Research Fellow and Professor
Agricultural Biotechnology Research Center,
Academia Sinica, Taiwan

Secretary General



Prof. Yuan-Shiun Chang
China Medical University



Department of Chinese Medicine and Pharmacy (MOHW)



- The combined treatment model between western medicine (WM) and traditional Chinese medicine (TCM)-chronic wounds, stroke, cancer, infertility, etc.
- Standardization of terminologies for TCM symptoms
- Construction of tongue diagnosis database



- Creation of Drug Herb Interaction Database
- TCM Adverse Drug Reactions Reporting System

ADR site



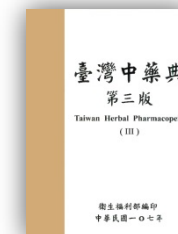
Strengthening of TCM professional competency and continuous medical education

Improving TCM product quality & safety management

Integration of TCM-WM in both healthcare and evidence-based research.

TCM international interactions & promotion of industry innovation and research

- Established THP (Taiwan Herbal Pharmacopoeia) 3rd Editing Committee in 2015
- Publication of 3rd Edition THP in 2018
 - New adapted 55 single herb monographs and 2 concentrated preparations
- regulatory limitation of abnormal substances in TCM raw materials and products



- Continuously publishing JTCM
- 2017 Global Health Forum in Taiwan
- International exchanges with New Southbound Policy countries



2017中藥藥品交流合作國際論壇
International Symposium on Cooperation in Chinese Medicine





中药全球化联盟

CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

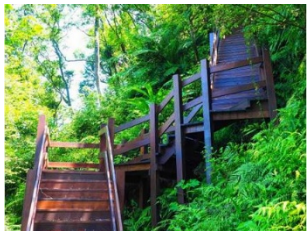
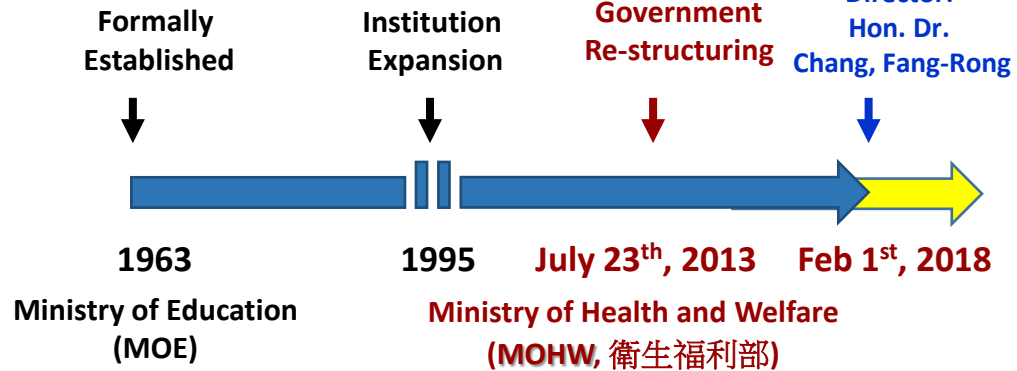


National Research Institute of Chinese Medicine (NRICM)

NRICM History



Director:
Hon. Dr.
Chang, Fang-Rong



Educational Herb Garden

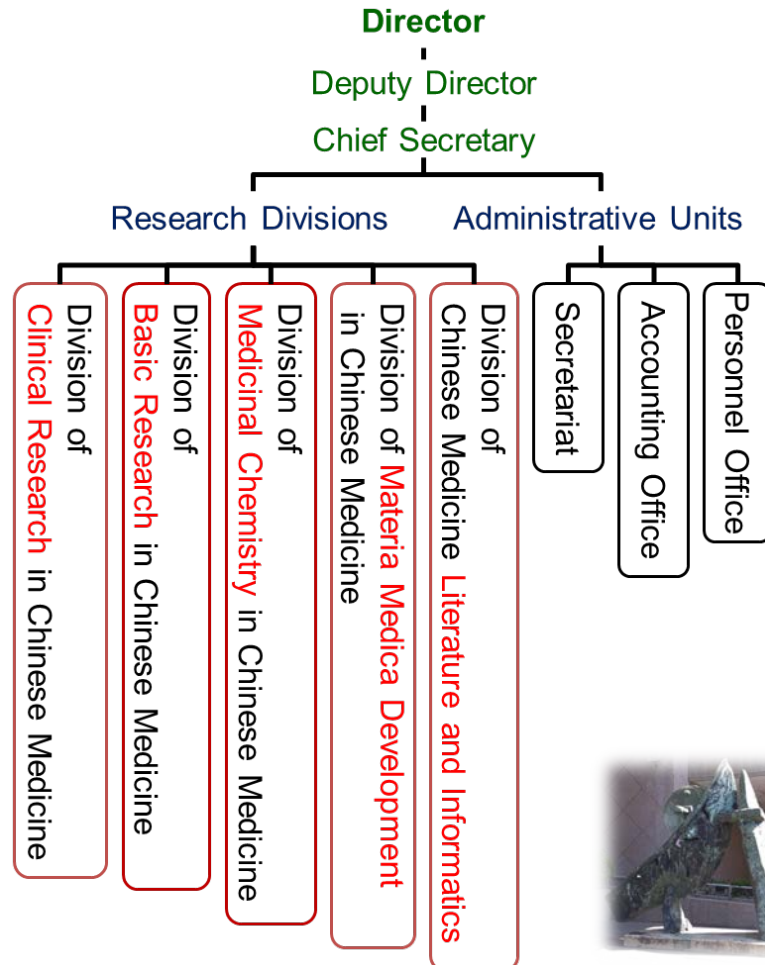


Herbarium



Traditional Chinese Pharmacy

Organization



Research Emphases:

1. Mission-oriented top-down research

1. Quality Control, TCM pharmacopeia
2. Evidence-Based Clinical Research
3. Drug-TCM Interaction and Safety

2. Basic science research

1. Diseases Prevention and Treatment
2. Chemical Analysis and Total Synthesis
3. Drug Metabolism and Toxicology

3. Compile and publish Chinese medical literatures

1. Study of TCM Literatures
2. Book editing and publication
3. Running a journal: Journal of Chinese Medicine





R&D of phytomedicines for cancer therapy and immuno-modulation

Agricultural Biotechnology Research Center, Academia Sinica, Taipei

Highlights of Research Achievements in 2017-2018



Lie-Fen Shyur

1. Plant galactolipid inhibits melanoma lung metastasis (International J Cancer, patents pending)
2. Niuchangchi fruiting body extracts suppress ER(+) breast cancer in animal (Phytomedicine)
3. US FDA Approves *Crassocephalum crepidioides* (Zhaohe Cao)-based botanical drug for Investigational New Drug (IND) for Cancer Therapy (Patents; Tech licensing)
4. Didan Cao derived compound inhibits triple negative breast cancer (Oncotarget; Frontiers in Pharm.)



Wen-Chin Yang

1. Patents and technology transfers of feed-in phytochemicals and drug for animal health (*Scientific Rep.*; eCAM, etc.)
2. Functional and mechanistic studies of plant polyphenols for cancer and diabetes (*Oncogene*).



Pei-Wen Hsiao

1. File a US patent for a standardized and effect-optimized *Wedelia chinensis* extract (WCE) for disease treatment and characterized the *in vivo* mechanisms (*Patent, Tech licensing*)
2. Published WCE in combination enhances therapeutic effects of hormonal therapy and docetaxel on prostate cancer models for studying cancer therapy (*Frontiers in Pharm.*; *Scientific Rep.*)



Yu-Chuan Liang

1. Research and development of medicinal herb-based phytochemicals for animal health (*Scientific Rep.*; eCAM, etc.)
2. Simultaneous detection of multiple pathogens by multiplex PCR coupled with DNA biochip hybridization." (*Laboratory animals*)



中药全球化联盟

CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

National Taiwan University



國立臺灣大學食品科技研究所

Institute of Food Science and Technology,
National Taiwan University



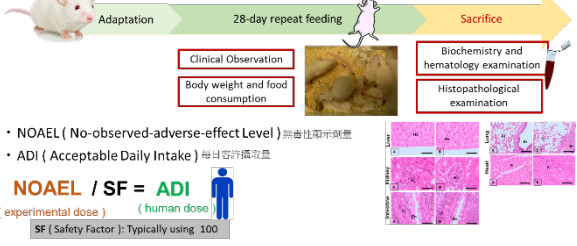
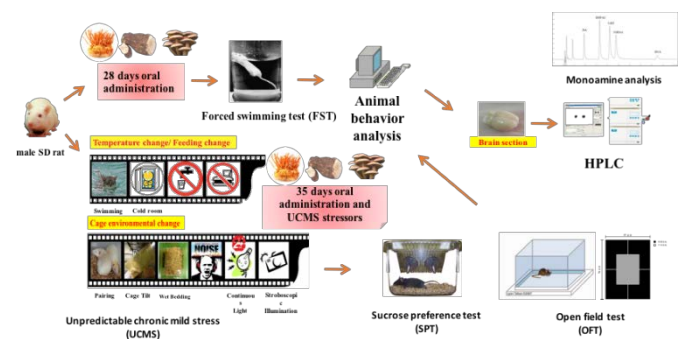
Distinguished Prof. Lee-Yan

Recent findings of Distinguished Professor Lee-Yan Sheen's lab
Institute of Food Science and Technology, National Taiwan University, Taipei, Taiwan

- Antidepressant-like effects of **mushrooms (菇類)** in forced swimming test- and unpredictable chronic mild stress-induced rat models
- Safety evaluation of water extract of **Gastrodia elata Blume (天麻)**

Forced swimming test (FST) 強迫游泳試驗 and unpredictable chronic mild stress test (UCMS) 非預期性慢性溫和壓力試驗

28-day subacute oral toxicity assessment 28天亞急毒性試驗



Genotoxicity assays 基因毒性試驗



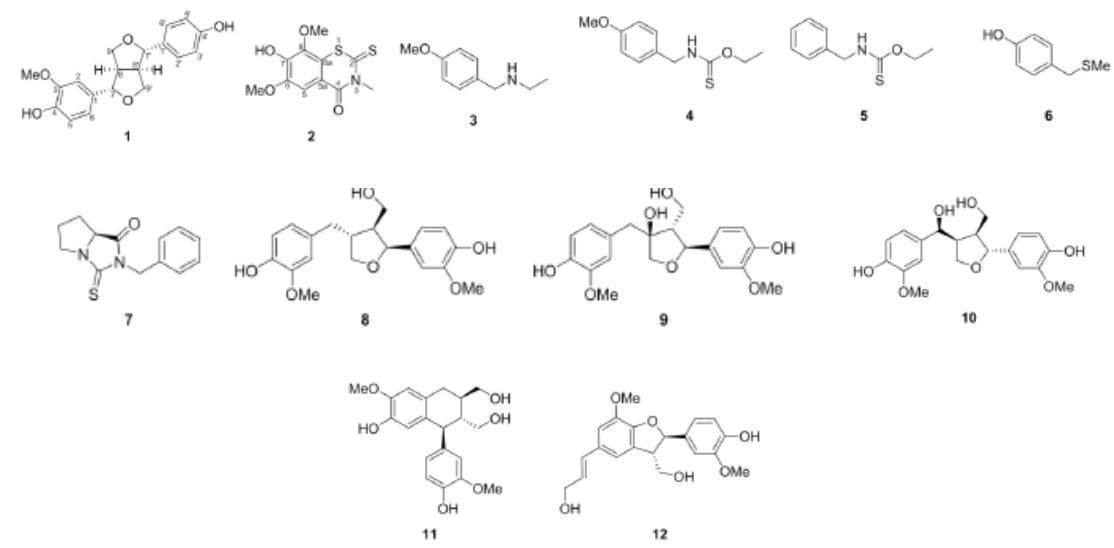
Prof. Ya-Ching Shen,
School of Pharmacy



Bretschneidera sinensis

Prof. Shan's research subjects :

Two new (1 and 2) and ten known compounds were isolated from the roots of *Bretschneidera sinensis*. Among them, compound 7 showed the most potent inhibition on superoxide anion release with IC50 value of $0.72 \pm 0.15 \mu\text{g/mL}$. Compounds 8 and 9 showed significant DPPH scavenging activities with ED50 values of 0.93 and 2.81 $\mu\text{g/mL}$, respectively.



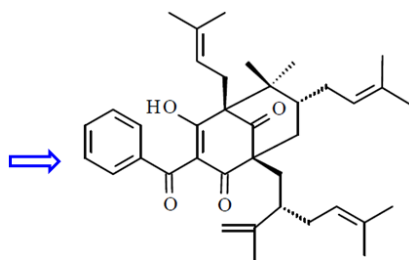
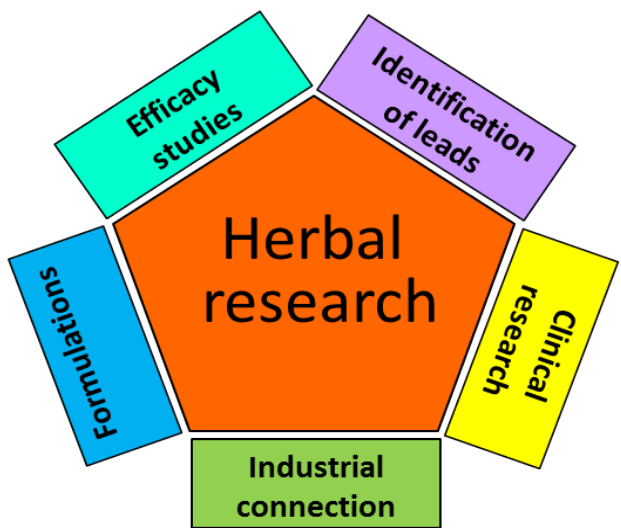


中药全球化联盟

CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

National Yang-Ming University

Faculty of Pharmacy (藥學系)



Angiogenesis Inhibitor



Institute of Traditional Medicine Faculty and research direction



Shu-ling Fu, Professor & Director
Anticancer natural products and herbs,
Anti-aging natural products and herbs



Tung-Hu Tsai, Professor
Pharmacokinetics, Pharmaceutical analysis,
Nano formulations



Chung-Hua Hsu, Professor
TCM clinical trials in cancer and addiction,
TCM theory, Herbal medicine



Fang-Pey Chen, Associate Professor
Acupuncture, TCM theory, Clinical trials
Analysis of National Health Insurance Dataset



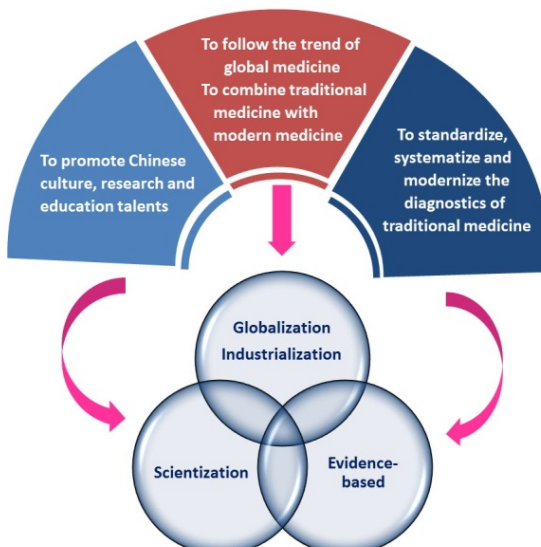
Keng-Li Lan, Associated Professor
Drug formulation, Targeted cancer therapy,
Cancer immunotherapy



Tsai-Ju Chien, Assistant Professor
Integrative medicine, Acupuncture, Hema-oncology,
Palliative and holistic care, TCM clinical trials



Tung-Yi Lin, Assistant Professor
The functions and mechanisms of herbal medicine
suppressed cancer progression and metastasis





中药全球化联盟

CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE



臺北醫學大學
TAIPEI MEDICAL UNIVERSITY

● School of Pharmacy

● Graduate Institute of Pharmacognosy

● Ph.D. program for the Clinical Drug Development of Chinese Herbal Medicine

Research areas	Clinical Chinese herbal medicine translational research and development							
	Basic research				Translational research		Clinical research	
	Natural products	Organic synthesis	Pharmacology and toxicology	Molecular biology	Chinese herbal medicine resource	Biotechnology	Clinical research and trial	Pharmacokinetic
Faculty	Lee, Ching-Kuo	Huang, Wei-Jan	Wu, Chieh-His Liang, Wen-Li	Chen, Mei-Chuan	Wang, Ching-Chiung Lee, Mei-Hsien Hou, Wen-Chi	Chuang, Kuo-Hsiang Lin, Ruo-Kai	Dai, Cheng-Jie	Lee, Chia-Jung

Goals

- To develop new botanical drugs
- To establish the natural products resources library
- To establish the e-learning system of Traditional Chinese Medicine

<http://tmu.pharm.dev.com.tw/>



Publication

01/01/2017~08/08/2018	SCI	IF>5	Patent
School of Pharmacy	39	5	1.USE OF URARIA IN PROMOTING OSTEOGENESIS OR PROVIDING NEUROPROTECTION 2.METHOD OF HIGH-THROUGHPUT SORTING OF HIGH EXPRESSION CELL AND CELLS SORTED THEREFROM
Graduate Institute of Pharmacognosy	12	2	
Ph.D. program for the Clinical Drug Development of Chinese Herbal Medicine	10	1	

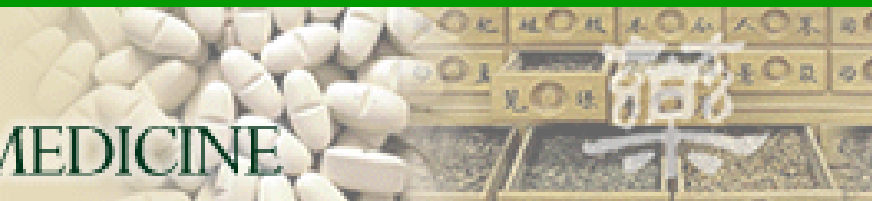


<http://ocw2.tmu.edu.tw>



中药全球化联盟

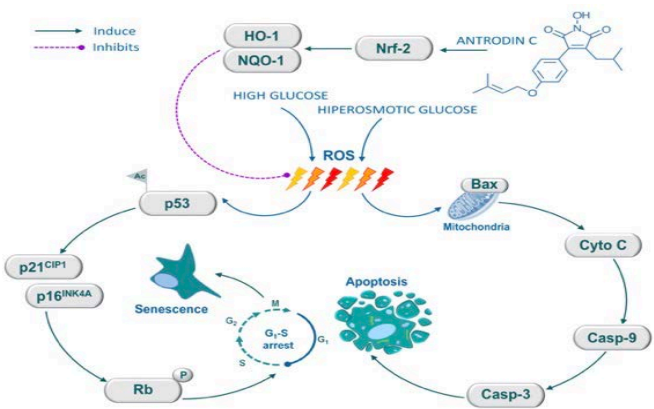
CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE



National Chung Hsing University
 College of Agriculture and Natural Resources
 Laboratory of Metabolomics and Phytomedicine Development
 Laboratory of Nutraceuticals and Food Chemistry



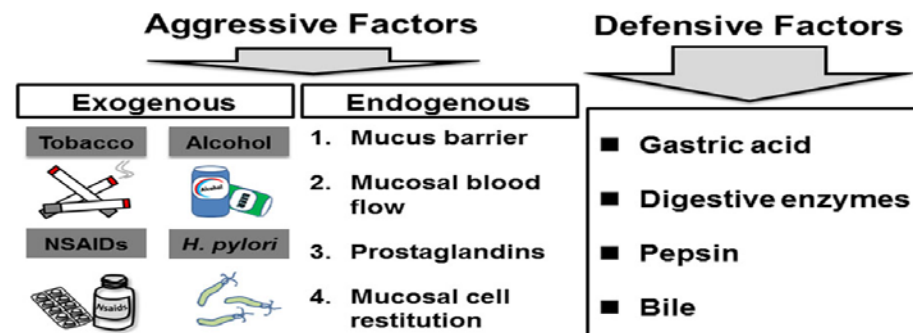
Dr. Sheng Yang Wang
 Distinguished Professor



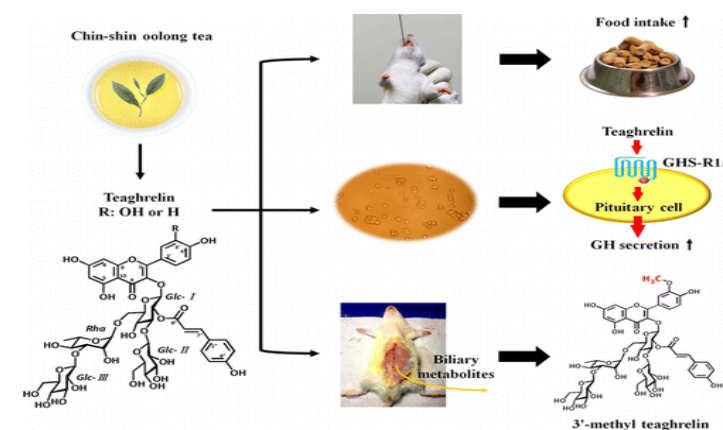
Bioactivity Investigation of Antrodia cinnamomoun



Dr. Gow-Chin Yen
 Chair Professor



Dr. Jason T. Z. Tzen
 Chair Professor



3'-methyl teaghrelin



中药全球化联盟

CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE



China Medical University, Taiwan

CMU and CMUH

Research Center for Chinese Herbal Medicine

Research Center for Chinese Medicine & Acupuncture

Professor
Lu-Hai Wang



Professor
Jaung-Geng Lin



1. Professor Jaung-Geng Lin's speech about "The Use of Acupuncture in Emergency Medical Services" in WHO.
2. Professor Jaung-Geng Lin was elected as the President of 31st International Congress of Oriental Medicine.
3. The MOU-signing between the Chinese University of Hong Kong and College of Chinese Medicine, CMU.
4. 2018.02.24 1st Conference of the of Chinese Medicine College/ University in Taiwan.
5. China Medical University is ranked as the top 2nd-4th place among the 6 Subjects in the Academic Ranking of World Universities.
6. The establishment of Center for International Integrative Medicine .
7. Department of Chinese Pharmaceutical Sciences and Chinese Medicine Resources join the College of Chinese Medicine.
8. 2018.07.13-16 Consensus Camp of Taiwan Herbal Pharmacopeia hosted by Professor Yuan-Shiun Chang.
9. The official opening of the Department of Traditional Chinese Medicine, Asia University Hospital .
10. 2018.05.26 The 10th Annual Meeting for Global University Network of Traditional Medicine (GUNTM).



中药全球化联盟

CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

Kaohsiung Medical University, Taiwan

Research Center for Natural Products and Drug Development

Chair Prof. / Director
Yang-Chang Wu



Mission objectives

1. To combine Kaohsiung Medical University with the Kaohsiung Medical University Hospital and the basic clinical medicine, reaching to a new milestone in the translational medical research.
2. To explore the active fractions and pharmacological mechanism of action for active compounds obtained from Chinese Herbal Medicines.
3. Toxicology and animal model validation and other preclinical studies.
4. The investigation and development of active components (HPLC fingerprint) from Formosan Chinese Herbal Medicines.
5. To connect basic research and drug development, promote the application of clinical treatments and accelerate further research.
6. The integration and management of Taiwan's pure compounds and extracts database.



RCNPDD



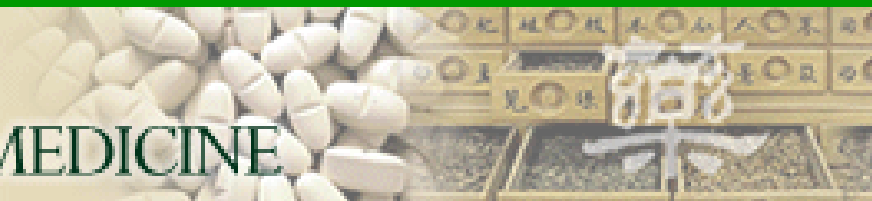
TDEC

台灣藥物樣品資料庫

Taiwan Database of Extracts and Compounds

TAIWAN DATABASE OF
EXTRACTS
AND
COMPOUNDS

Taiwan Database of Extracts and Compounds (TDEC) is a new concept for sharing the informative connection between natural products' providers and researchers. The platform and database are aimed at the sample's collection, structural, physical and chemical properties, biological activities, and point-to-point link. So far, this platform is developing under system construction. On the timeline, the α version will be online at 2019. <https://tdec.kmu.edu.tw>



Center for Traditional Chinese Medicine, Chang Gung Memorial Hospital, Taiwan

CHANG GUNG FAMILY

- 1976 TAIPEI CHANG GUNG MEMORIAL HOSPITAL
- 1978 LINKOU CHANG GUNG MEMORIAL HOSPITAL
- 1985 KEELUNG CHANG GUNG MEMORIAL HOSPITAL & LOVERS LAKE BRANCH
- 1986 KAOHSIUNG CHANG GUNG MEMORIAL HOSPITAL
- 2000 KAOHSIUNG MUNICIPAL FENG-SHAN HOSPITAL UNDER THE MANAGEMENT OF C.G.M.F.
- 2001 CHIAYI CHANG GUNG MEMORIAL HOSPITAL
- 2003 TAOYUAN CHANG GUNG MEMORIAL HOSPITAL
- 2003 CHANG GUNG HEALTH AND CULTURE VILLAGE
- 2009 YUNLIN CHANG GUNG MEMORIAL HOSPITAL
- 2010 TAOYUAN NURSING HOME
- 2011 CHIAYI NURSING HOME

No	Authors	Article	Journal	Volume	No	Pages	Date of Publication
1	Lin YH, Chen HY, Chiu JC, Chen KJ, Ho HY, Yang SH	Immunomodulation effects of <i>Schizonepeta tenuifolia</i> Briq. on the IgE-induced allergic model of RBL-2H3 cells	Evid Based Complement Altern Med	2018		65147-05	April 22, 2018
2	Lin CC, Yang CC, Chen YW, Hsiao LD, Yang CM	Arachidonic acid induces ARE/Nrf2-dependent heme oxygenase-1 transcription in rat brain astrocytes	Mol Neurobiol	55		3328-3343	April 2018
3	Tsai PJ, Lin YH, Chen JL, Yang SH, Chen YC, Chen HY	Identifying Chinese herbal medicine network for endometriosis: Implications from a population-based database in Taiwan	Evid Based Complement Altern Med	2017		75010-15	June 2017 (E-Pub)
4	Ueng YF, Lu CK, Yang SH, Wang HJ, Huang CC	Potential of the anticoagulation effect of warfarin by the herbal remedy <i>Shu-Jing-Hwo-Shiee-Tang</i> in rats: The dosing regimen and pharmacokinetic interaction	Drug Metab Pharmacokin	32	1	85-91	February 2017
5	Yang CC, Lin CC, Chien PTY, Hsiao LD, Yang CM	Thrombin/matrix metalloproteinase-9-dependent SK-N-SH cell migration is mediated through a PLC/PKC/MAPKs/NF-κB Cascade	Mol Neurobiol	53	9	5833-5846	November 2016
6	Shiue HS, Lee YS, Tsai CN, Chang HH	Treatment of allergic rhinitis with acupoint herbal plaster: an oligonucleotide chip analysis	BMC Complement Altern Med	16		436	November 4, 2016
7	Chen YC, Tseng YC, Huang WH, et al	Acute kidney injury predicts mortality after charcoal burning suicide	Scientific Reports	6		29656	July 19, 2016
8	Yang SH, Yu CL, Yang YH, Yang YH	The immune-modulatory effects of a mixed herbal formula on dendritic cells and CD4 ⁺ T lymphocytes in the treatment of dust mite allergy asthma and perennial allergic rhinitis	Journal of Asthma	53	4	446-451	January 21, 2016 (E-Pub)



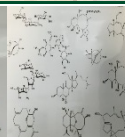
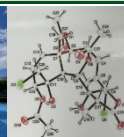
中药全球化联盟

CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE



National Museum of Marine Biology & Aquarium

Planning & Research Division



Marine Natural Products

Sampling

Identification

Culture

Extraction

Purification

Structure id

Bio-screening

Animal test

Amplify

Lead drugs

Research Expertise

Research Subject

Ping-Jyun Sung



1. Marine Natural Products Chemistry
2. Structural Elucidation of Organic Compounds
3. Chromatography

1. Studies on the bioactive natural products from marine invertebrates

Mei-Chin Lu



1. Development of Anticancer Drug Candidate from Marine Natural Products
2. Molecular Biology
3. Tumor Biology

1. Anticancer and Immunomodulatory Mechanisms of *Antrodia camphorata* on Chemotherapy and Immunotherapy
2. Anticancer mechanism of the marine natural products in *in vitro* celluler and *in vivo* xenograft animal model

Jui-Hsin Su



1. Natural products chemistry
2. Structural elucidation of organic compounds

1. Study on the bioactive natural products from the sponges and octocorals and investigation on the synthesis and bioactivities of related analogues

Jimmy Kuo



1. Marine Microbiology
2. Bioinformatics
3. Biochemical Engineering

1. Isolation and Screening Marine Microorganisms for Novel Natural Products
2. The Bacterial Community Composition and Structure of Water from an Aquaculture System
3. Analysis of Codon Usage Pattern of Bacterial Genomes



中药全球化联盟

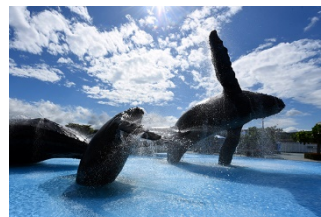
CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE



NATIONAL MUSEUM OF MARINE BIOLOGY & AQUARIUM
國立海洋生物博物館

National Museum of Marine Biology & Aquarium

Planning & Research Division **Ping-Jyun Sung**



Research project:

1. Study on the bioactive natural products from marine invertebrates and cultured octocorals.
2. Study on the bioactive natural products from marine microorganisms.
3. Study on the bioactive natural products from sponges and investigation on the synthesis and bioactivities of related analogues.
4. Anticancer research of marine natural products.
5. Natural products from the marine invertebrates, secondary metabolites of marine microorganism and cultured octocorals.



Sampling

Identification

Culture

Extraction

Purification

Structure id

Bio-screening

Animal test

Amplify

Lead drugs



Memoregain® TLCT Plus

(*Cistanche tubulosa* extracts)

- ✓ **39 patents granted in 17 countries:** prevent and treatment dementia, enhance memory in healthy people, promote neurite outgrowth, regulate blood glucose, protect muscle damage etc.
- ✓ **6 SCI publication**

Prodemax™

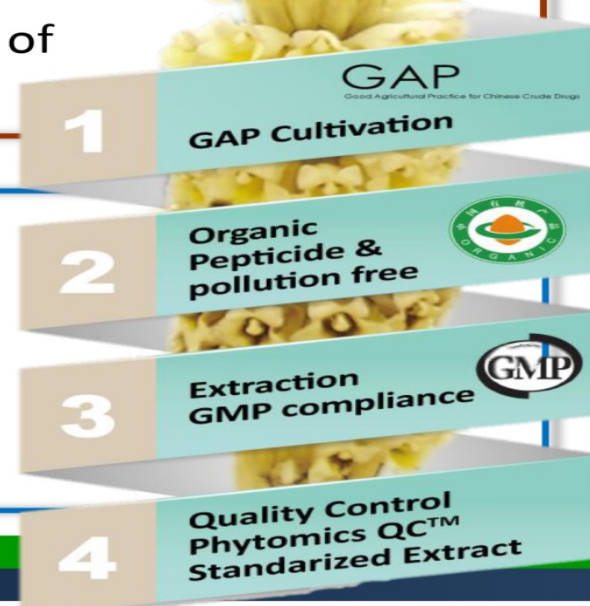
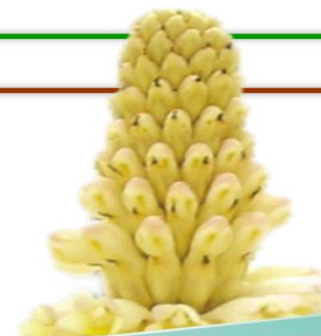
(Walnut oligopeptide)

- ✓ **8 patents pending:** manufacture process, anti-PM2.5, anti-fatigue
- ✓ **1 SCI publication :** A simple and convenient method for the preparation of antioxidant peptides from walnut (*Juglans regia* L.) protein hydrolysates.

Lipucan®

(*Poria cocos* triterpene)

- ✓ **59 patents granted in 17 countries:** enhance nutrients absorption, enhance immunity, anti-asthma, anti-cachexia, anti-lung cancer, and anti-diabetes etc.
- ✓ **2 SCI publication**





中药全球化联盟

CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

SUN TEN PHA MACEU ICAL CO., LTD.

About Sun Ten

- Philosophy** : All nature-made, authentically preserved, efficacious and safe herbal extracts to safeguard your health.
- Founder** : Dr. Hong-Yen Hsu, Father of Scientific Chinese Herbal Extracts in Taiwan.
- Establish in** : 1946, over 70 years.
- Products Portfolio** : Traditional Chinese Herbal Extracts, Quality Medicinal Chinese Herbs, Over the Counter Products, ODM & OEM service.
- Global Distribution** : More than 20 countries, including the United States, Canada, Japan, Malaysia, Singapore, Australia, New Zealand, Switzerland, Germany, United Kingdom, Ireland, Sweden, Macau, Indonesia, etc.

Manufacturing Excellence

Sun Ten is a leading manufacturer of traditional Chinese herbal extracts, producing dosage forms of powder, granule, tablet, capsule, honey pills and so on. As a manufacturer, Sun Ten also functions as full service OEM/private-label and ODM with well-experienced research and development expertise.

Testing Standard



Raw Material Superiority

Supplier Management

Only obtain the raw materials from contracted suppliers or private grower who strictly follow Sun Ten quality standards. Herb authenticity and quality are secured.

Source Management

Traceability & Transparency for every batch.

Herb Sourcing Team

On-site quality inspection, suppliers and partner survey are conducted every year.

Quality Warranty with Advanced Facility



RD / QC Certificate



Australian Government
Department of Health
Therapeutic Goods Administration



Testing Laboratory
3009



HALAL Certification

Japan Accreditation
Certification of Foreign
Drug Manufacturer

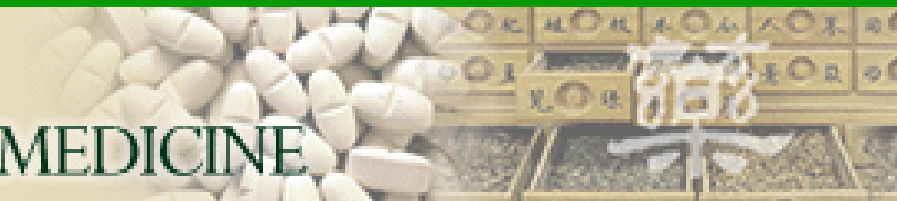
APP





中药全球化联盟

CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE



3i Plant Factory Group (3i Herbal Plant Factory)



<p>Production no pesticides, no heavy metals Chinese herbal medicine 無農藥、無重金屬藥用植物</p>	<p>Industrial-scale production of high-quality Chinese herbal medicine 產業量化規模生產 高質量藥用植物</p>
<p>Our Goals 企業使命</p>	
<p>Promote market development of Chinese herbal medicine 促進藥用植物市場發展</p>	<p>Promote development of Chinese herbal medicine internationally 促進中草藥全球化市場的流通</p>



The world's first mass-produced *Anoectochilus*, *Dendrobium* and *Antrodia cinnamomea* plant factory



中药全球化联盟

CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE



Chairman

Secretary General



Prof. Hen-Hong Chang
China Medical University



Prof. Yuan-Shiun Chang
China Medical University



***Thanks for
your attention !***