



CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

中药全球化联盟



Beijing
北京

Contents

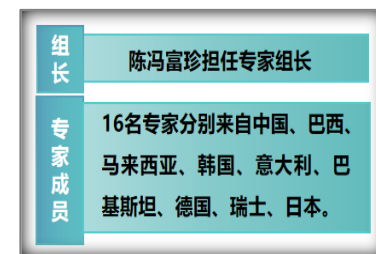
- 1.China Academy of Chinese Medical Science
- 2.Beijing University of Chinese Medicine
- 3.PLA Institute of Chinese Materia Medica
- 4.China-Japan Friendship Hospital
- 5.School of TCM, Capital Medical University

Big progress have been made in China Academy of Chinese Medical Sciences



黄璐琦
Huang Luqi

International Traditional Medicine Clinical Trial Registry (ITMCTR) was officially accepted as a first level registration institution by the World Health Organization Clinical Trial Registration Platform in February 2023, and is the first cross country and regional registration institution to be divided by the scope of clinical trial themes; Successfully achieved registration data exchange docking with the World Health Organization, passed data exchange testing, and took over and added a total of 4182 new online projects.



In January 2022, Academician Huang Luqi led a Chinese delegation to visit the World Health Organization again and signed a memorandum of cooperation on jointly building the ITMCTR.

Publish the official website of the platform

Building hardware facilities in the computer room

Establish an expert committee

Many achievements have been made in China Academy of Chinese Medical Sciences

- **The national major scientific research projects:** A total of 23 key research and development plans have been obtained. Among them, 20 are key special projects for the modernization of traditional Chinese medicine, accounting for 15.87% of the total number of projects approved nationwide.
- **Publication of works:** Published a large number of iconic academic works such as the "Selected Series of Overseas Chinese Ancient Medical Books", "A Hundred Year History of Traditional Chinese Medicine", "Chinese Medicine Collection and Health Preservation", and "Tian Hui Yi Jian".
- **Mark achievements:** The discovery of the earliest Chinese herbal processed products in China through the archaeological research on the unearthed medical slips and medical cultural relics from the Han Tomb of Laoguanshan and the tomb of the Marquis of Haihun.



The anti-inflammation of acupuncture and the underlying mechanism were published in the top journal *Nature, Neuron*

Neuron Article

Somatotopic Organization and Intensity Dependence in Driving Distinct NPY-Expressing Sympathetic Pathways by Electroacupuncture

Graphical Abstract

Authors
Shenbin Liu, Zhi-Fu Wang, Yan-Shuai Su, Russell S. Ray, Xiao-Hong Jiao, Yan-Qing Wang, Qiufu Ma

Correspondence
qiufu_ma@dfci.harvard.edu

In Brief
Liu et al. reveals a neuroanatomical basis for acupuncture practice, showing that electroacupuncture stimulation can drive distinct autonomic pathways and modulate systemic inflammation in somatotopy-, stimulation-intensity-, and disease-state-dependent manners.

Nature Article

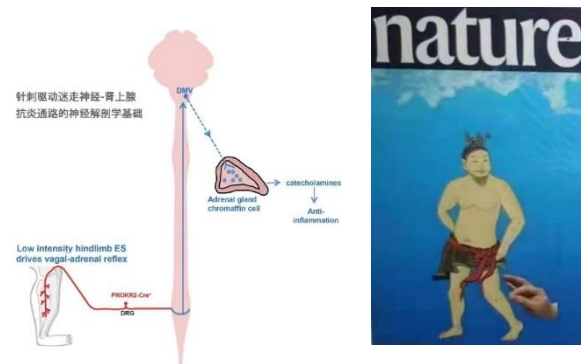
A neuroanatomical basis for electroacupuncture to drive the vagal–adrenal axis

<https://doi.org/10.1038/s41586-021-04001-4> Shenbin Liu^{1,2,3,4,5}, Zhifu Wang⁶, Yangshuai Su^{1,2}, Lu Qi⁷, Wei Yang⁷, Mingzhou Fu⁷, Xianghong Jiao⁸, Yanqing Wang^{2,3,4} & Qiufu Ma^{1,2}

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Accepted: 7 September 2021

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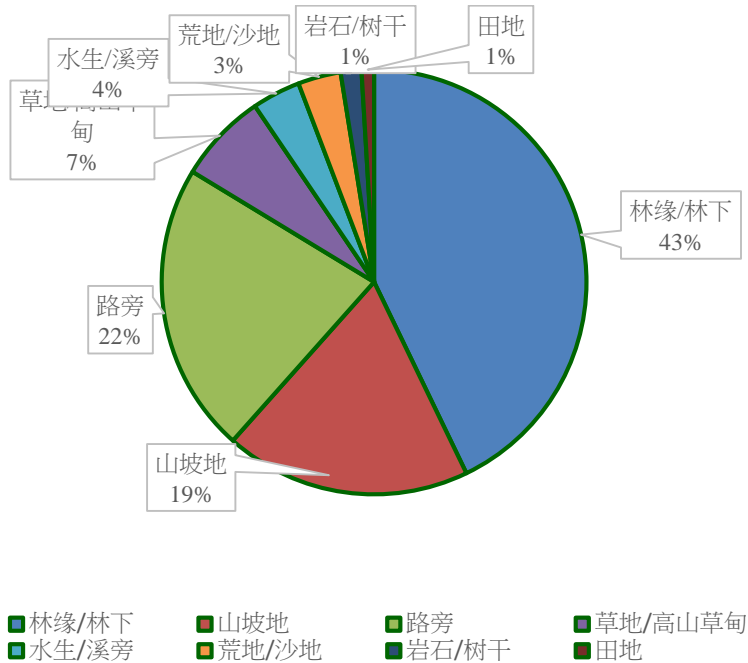
BMJ Collection Acupuncture: How to improve the evidence

Improving acupuncture research: progress, guidance, and future directions



109 experts of traditional Chinese medicine and western medicine, evidence-based medicine experts, epidemiological and statistical experts, health economics and health policy experts from 48 units in 9 countries participated in the studies. They analyzed the current status and quality of acupuncture randomized controlled clinical trials, systematic evaluation, clinical practice guidelines and health economics research. The methodological suggestions, expert consensus were put forward and a series of articles were published on BMJ.

Found ecological agriculture has unique advantages for Chinese maternal medica(CMM), and proposed and implemented the declaration on ecological agriculture of CMM

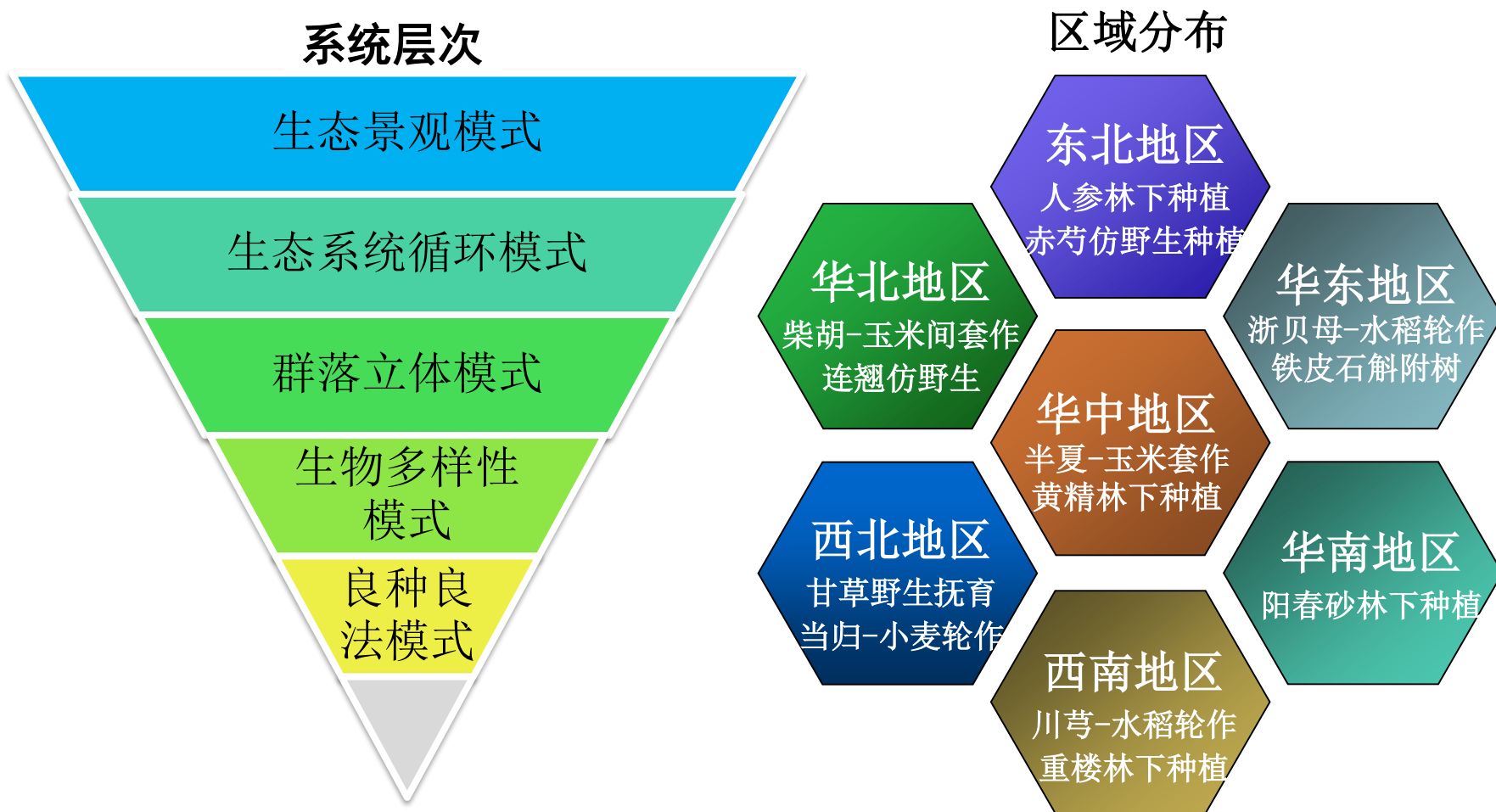


- 不向农田抢地
- 不与草虫为敌
- 不惧山高林密
- 不负山青水绿

《中国药典》 收载药用植物生活型及生境

孙春兰副总理听中药生态农业汇报

Constructed a technical system for ecological planting of CMM and achieved a scientific layout for ecological planting of CMM for more than 50 species



搭建了基于系统层次和区域分布的中药材生态种植模式的框架,构建了中药材生态种植技术体系,实现了对50种中药材生态种植科学布局

Contents

1.China Academy of Chinese Medical Science

2.Beijing University of Chinese Medicine

3.PLA Institute of Chinese Materia Medica

4.China-Japan Friendship Hospital

5.School of TCM, Capital Medical University

Beijing University of Chinese Medicine have made collaboration with 118 famous universities and research institutions over 31 countries in the world.

开拓新的合作领域

2018年，与美国国家儿童医院院长纽曼博士签署合作协议



美国哈佛大学Dana Farber肿瘤中心

美国国家儿童医院

美国麻省理工学院

俄罗斯儿科医科大学

俄罗斯喀山国立大学

法国巴黎第五大学

英国帝国理工大学

意大利罗马大学

罗马尼亚布拉索夫大学

克罗地亚里耶卡大学

2014年在纽约曼哈顿基辛格办公室会谈



Some scientific and technological achievements have been made during the two years

主持两项国家标准
填补“双一流”指标空白



“苏合颗粒”获批我校历史上首个 1.1 类中药
创新药临床批件

 国家药品监督管理局 National Medical Products Administration 电子证照查验中心	
药物临床试验批准通知书 国家药品监督管理局	
持证主体	北京中医药大学^重庆... 详情
持证主体代码	121000****... 详情
持证主体代码类型	其他^其他
证照编号	2023LP00288
发证日期	2023年3月2日

通阻合牙日仙拜尔片
获药物临床批件

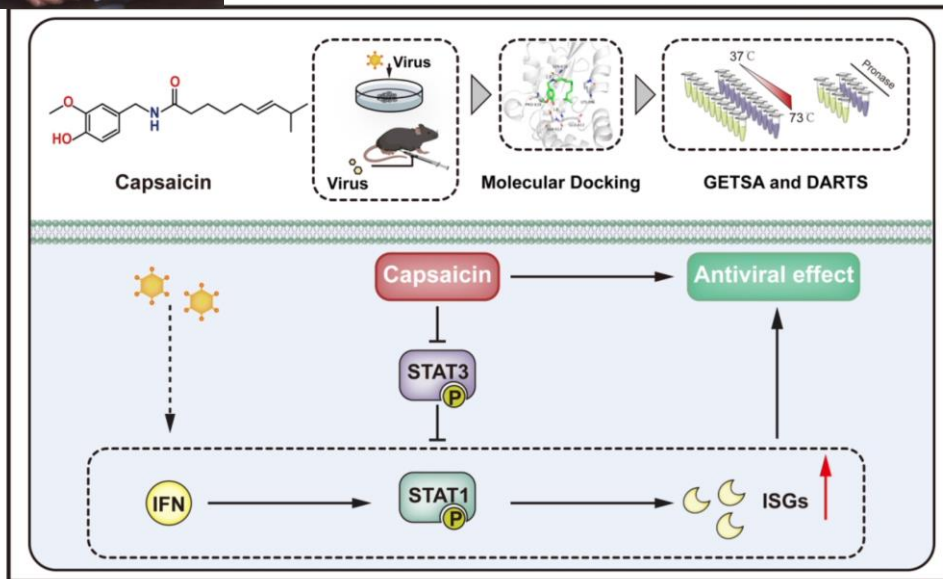
国家药品监督管理局	
药物临床试验批准通知书	
受理号: CYZL2200002	通知书编号: 2022LP01230
新疆银朵兰药业股份有限公司, 北京中医药大学:	
根据《中华人民共和国药品管理法》及有关规定, 经审查, 2022 年 5 月 26 日受理的通阻合牙日仙拜尔片符合药品注册的有关要求, 同意开展用于“异常胆液质所致的便秘”的临床试验。	



Advances of TCM in antiviral research



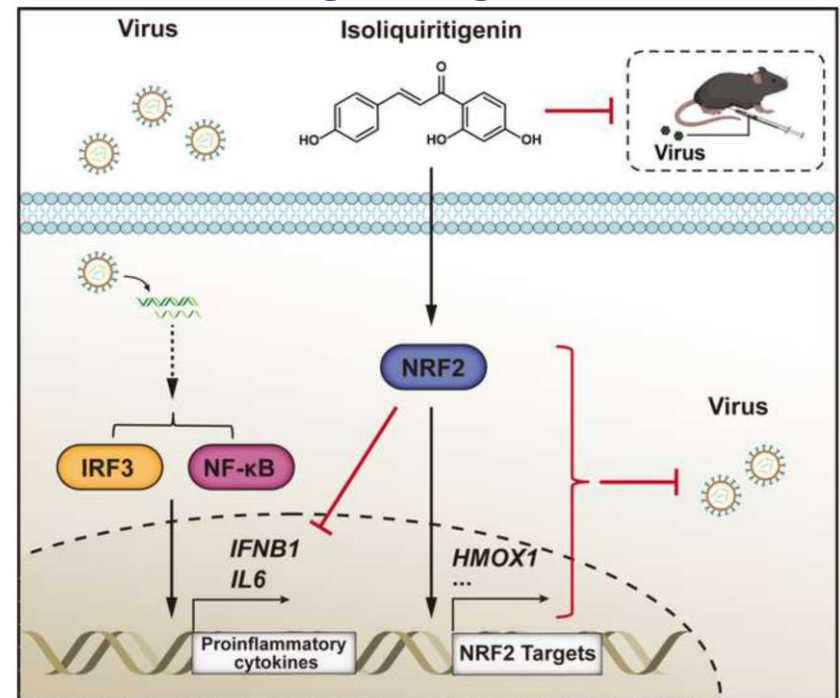
北京中医药大学
BEIJING UNIVERSITY OF CHINESE MEDICINE



Zhang et al, *Acta Pharmacol Sin*, 2023

- **Capsaicin** functions as a selective degrader of STAT3 to enhance host resistance to viral infection

- **Isoliquiritigenin** inhibits virus replication and virus-mediated inflammation via NRF2 signaling



Wang et al, *Phytomedicine*, 2023

Advances of TCM in organoid research



北京中医药大学
BEIJING UNIVERSITY OF CHINESE MEDICINE

536 北京中医药大学学报 第42卷第7期 2019年7月
Journal of Beijing University of Traditional Chinese Medicine Vol. 42 No. 7 July, 2019

· 理论研究 ·

基于“元精-元气论”阐释填精养脏法与干细胞移植修复组织损伤的理论同一性

李红梅¹ 吴芬芳² 徐安龙^{1,2*}

(1 北京中医药大学生命科学院 北京 102488; 2 中山大学生命科学院)

摘要:干细胞具有元精属性,是元精在机体微观层面的存在形式。从胚胎发生学上看,干细胞基本符合元精所有功能特征,元精化生元气,元精体现物质结构,元气体现代谢和能量传递功能,干细胞的增殖分化及成熟后能量代谢过程即为五行(即5种能量的形式)生克制化理论下元精化生元气的过程。西医利用干细胞功能特点进行组织损伤修复的技术尝试,与中医“元精-元气论”及填精养脏治法在理论上具备同一性。肾脏五脏六腑之精,干细胞直接补充先天肾精,肾精充盈,则五脏六腑之精充盈,脏腑得以濡润而恢复阴阳和合状态,促使受损组织修复,起到任何药力所不能达的效果,可谓是中医“慢病治其本”的经典范式,为中西医结合干细胞修复组织损伤的技术革新与拓展尝试提供新的思路和方法。

关键词:元精;元气;填精养脏;干细胞;组织修复;理论同一

doi:10.3969/j.issn.1006-2157.2019.07.002 中图分类号:R2-031

Alignment between essence-replenishing viscera-nourishing method and modern stem cell transplantation in repairing tissue damage based on “primordial essence-qi theory”

Li Hongmei¹, Wu Fenfang², Xu Anlong^{1,2*}

(1 School of Life Sciences, Beijing University of Chinese Medicine, Beijing 102488, China; 2 College of Life Sciences, Sun Yat-Sen University, Guangzhou 510006, China)

Abstract: With the property of essence, stem cell is the existing form of essence at the micro-level of the body. From the viewpoint of embryogenesis, stem cells conform to all the functional characteristics of essence. Essence generates primordial qi and can reflect the material structure, while primordial qi can embody the function of metabolism and energy transfer. Besides, the procedure of proliferation, differentiation and energy metabolism of stem cells after maturation is similar to the process of how essence generates primordial qi, as the generating and restraining relations described in the theory of five elements (i. e. five forms of energy). Modern medicine attempts to repair tissue damage by taking advantage of the functional characteristics of stem cells, which is theoretically identical to the theory of “primordial essence-qi” in traditional Chinese medicine and the method of “tonifying essence to nourish viscera”. As the kidney stores the essence, stem cells directly supplement congenital kidney essence to promote the repair of damaged tissues, playing an effect beyond the reach of any drug. It is a classic paradigm of “treating the root of chronic disease” in traditional Chinese medicine and provides new ideas and methods for the innovation and expansion of stem cell technology under the guidance of integrated theory of traditional Chinese and Western medicine.

Keywords: essence and primordial qi; tonifying essence to nourish viscera; stem cells; tissue repair; theoretical identity

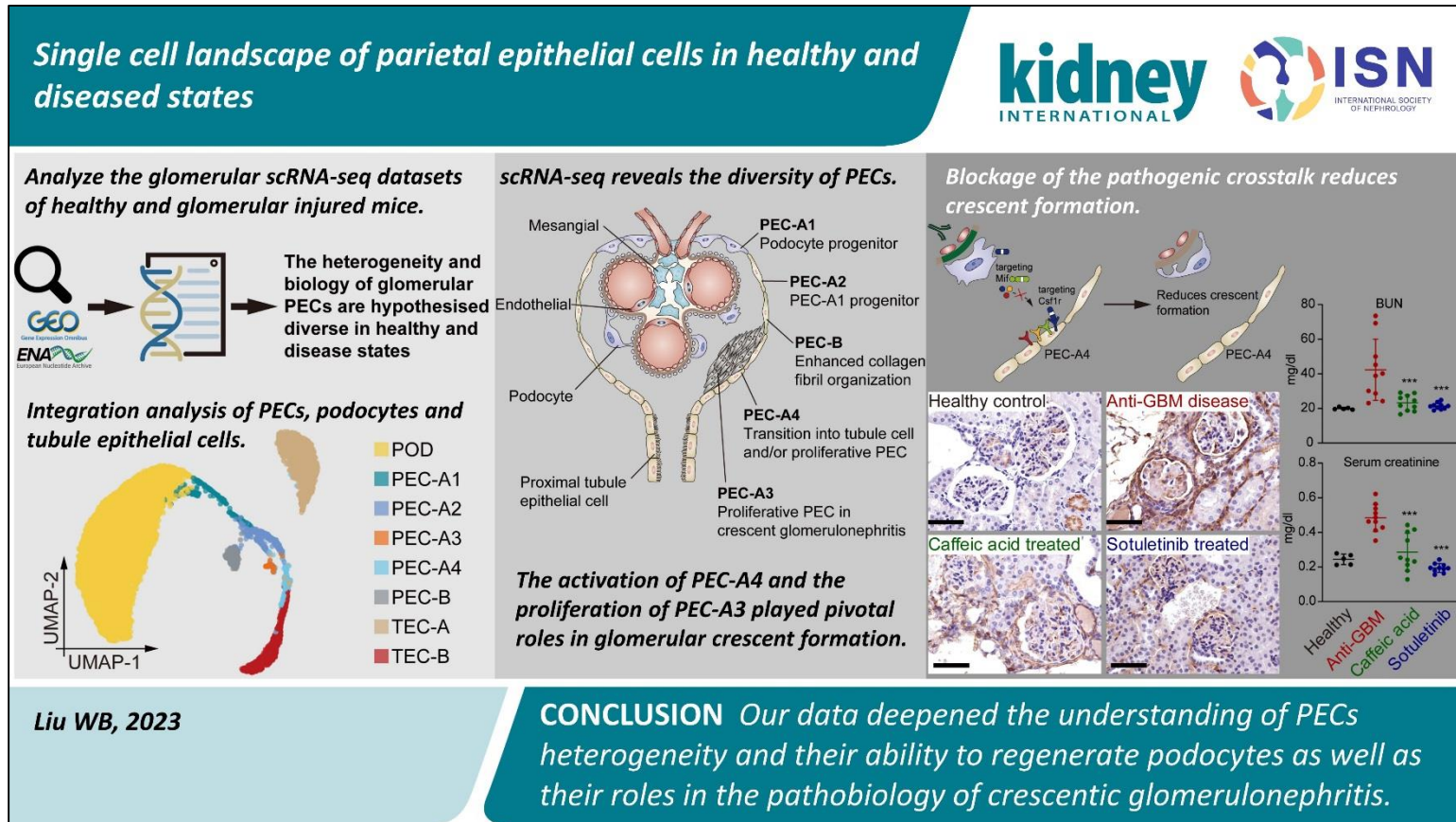
李红梅,女,博士

* 通信作者:徐安龙,男,博士,教授,博士生导师,主要研究方向:各种不同进化地位物种的免疫基因与分子的功能与演化研究, E-mail: xuanlong@bucm.edu.cn

将中医“元精-元气论”及“填精养脏”治法创新融合到再生医学干细胞移植修复组织损伤的中药小分子组方筛选和技术体系优化研究中,从细胞水平上开展“填精养脏”治法的应用尝试。

✓ 理论指导——创立中医“元精-元气论”指导再生医学实践

Advances of TCM in treatment of kidney disease



- Screen **herbal components** that can intervene in glomerular diseases by targeting explicit targets

Contents

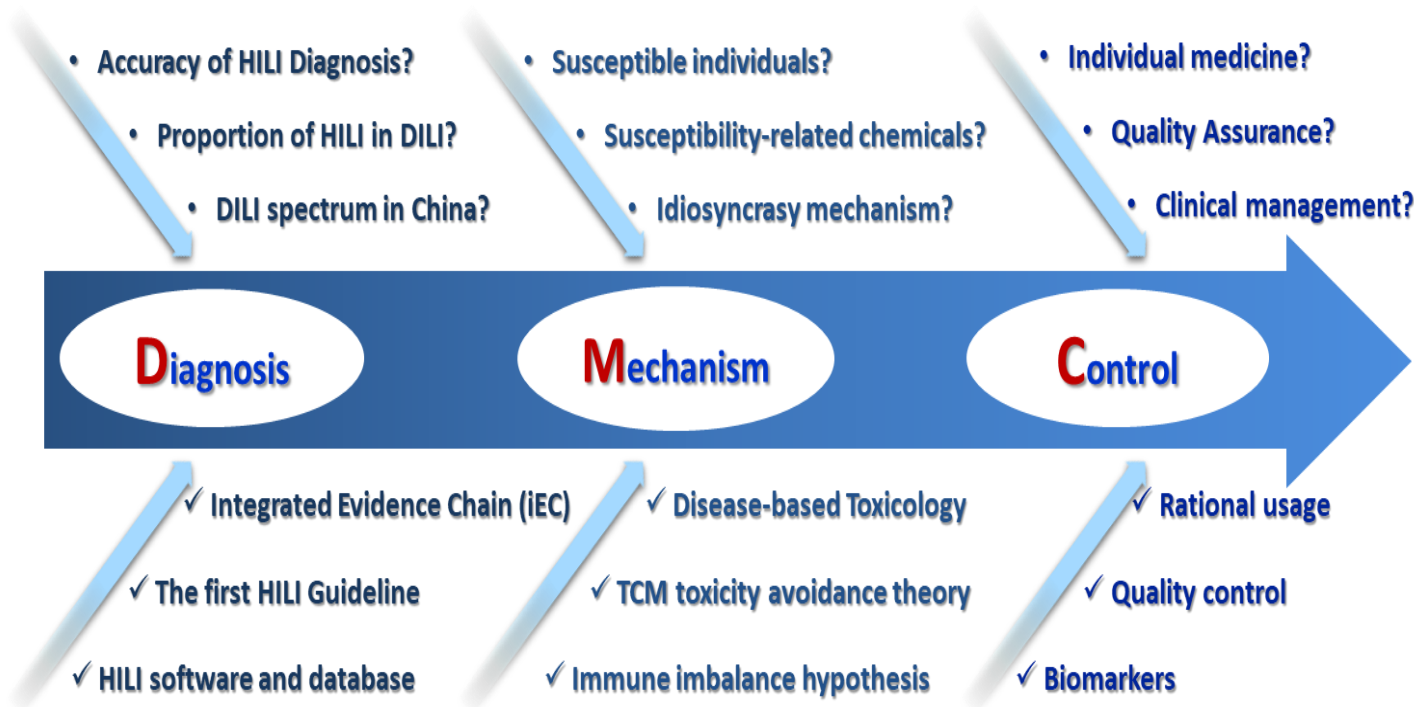
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- 2.Beijing University of Chinese Medicine
- 3.PLA Institute of Chinese Materia Medica
- 4.China-Japan Friendship Hospital
- 5.School of TCM, Capital Medical University

HILI-DMC: The integrated TCM safety evaluation system

创建以DILI为代表的传统药物安全性评价与风险防控技术体系



Professor
Xiao-he Xiao
301 Hospital



首创药源性肝损伤客观辨识方法和标准：整合证据链法(iEC)

A new diagnosis methodology for DILI : Integrated Evidence Chain (iEC)

1 Exclusion of confusing liver diseases



2 Exclusion of confusing drugs



3 Identification of herbals



4 Specific biomarkers (optional)

iEC method for HILI diagnosis

(1) Accordance to the liver biochemistry standards of DILI and a medication history of TCM or HM and related products before onset of abnormal liver biochemistries *

Frontiers of Medicine
Vol. 9 No. 4 December 2015

Pharmacognosy
Confirmed causality of herbal DILI

In vivo phytochemistry
Metabolomics
RUCAM scale
Suspected causality of herbal DILI

Male Female

The evidence chain-based causality identification algorithm (ECICA), including pharmacognosy, *in vivo* phytochemistry, metabolomics tests and RUCAM scale, would provide objective and confirmable diagnosis for herb-induced liver injury. For instance, the right hand photographs indicated the necessity of pharmacognosy test in diagnosing DILI suspected in *Hibiscus*, which is occasionally confounded in either the ancient book (*Siddhi* or modern market *Green right cress*). The top right corner indicates the authenticated *Hibiscus*. (Courtesy of Dr. Xiaobo Xiao. See pages 457–467 by Juhua Wang *et al.* for more information.)

Available online
<http://www.springerlink.com>

ISSN 2095-0217
CN 11-5083/R
邮发代号: 80-967

(9) Detection for *in vivo* characteristic biomarkers associated to TCM or HM-induced liver injury

● JB Wang, ..., XH Xiao. *Front Med* 2015

Confirmed diagnosis

赢得国际药源性肝损伤诊断标准制定的话语权

Winning the discourse power in establishing intl DILI guidelines

欧洲方案
相关性评分

RUCAM

1993, Council for International
Organizations of Medical
Sciences (CIOMS)

中华医学会药肝学组, 2015
Chinese Medical Association

美国方案
结构化专家意见

SEOP
2014, American College of
Gastroenterology (ACG)

中国方案
整合证据链

iEC method

2016, China Association of
Chinese Medicine (CACM)

- Evidence chain-based
- Tri-grade diagnosis
 - Suspected diagnosis
 - Clinical diagnosis
 - Confirmed diagnosis

Contents

- 1.China Academy of Chinese Medical Science
- 2.Beijing University of Chinese Medicine
- 3.PLA Institute of Chinese Materia Medica
- 4.China-Japan Friendship Hospital
- 5.School of TCM, Capital Medical University



China-Japan Friendship Hospital

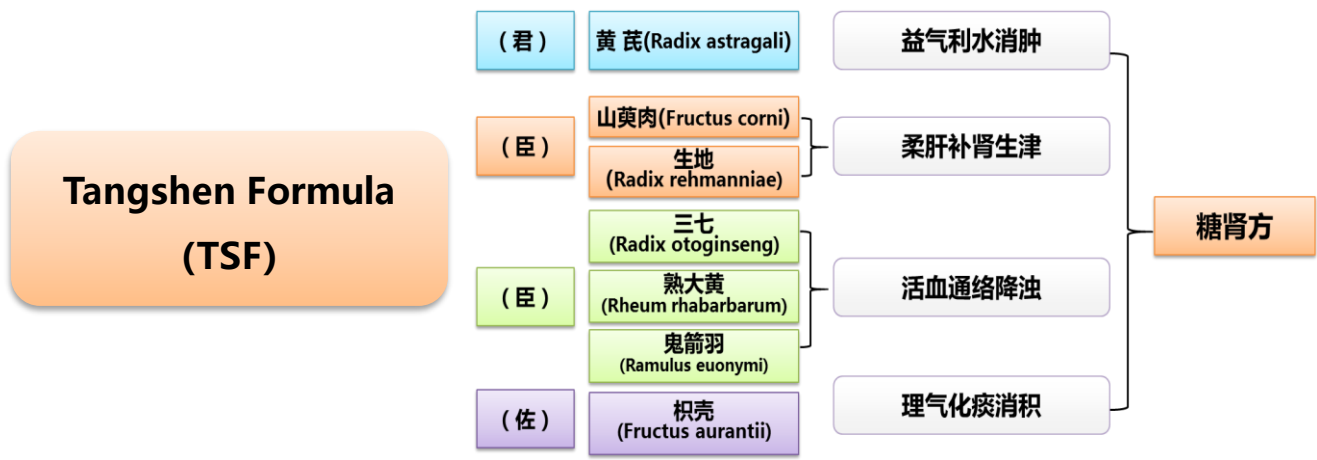


Prof. Ping Li' team

- ◆ Area: Clinical and basic research about traditional Chinese Medicine for diabetic nephropathy
- ◆ Achievement:
 - Verified clinical efficacy of TCM for DN with macroalbuminuria
 - Developed a Chinese herb medicine(Tangshen Formula) for DN and clarified its molecular mechanism.

- ◆ Beijing Key Lab Immune-Mediated Inflammatory Diseases
- ◆ Key Research Lab of SATCM (Therapeutic evaluation for kidney disease)
- ◆ Third level Lab of SATCM(Pharmacology of Chinese Materia Medica for kidney disease)

TSF is an effective traditional Chinese medicine for the treatment of DKD

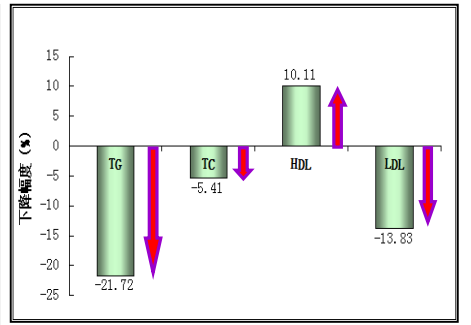
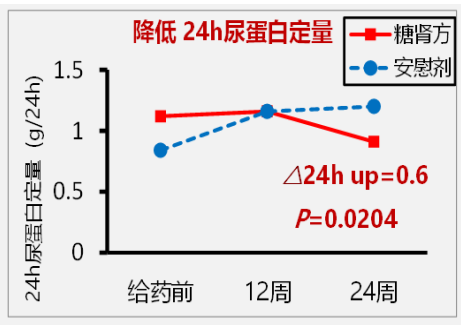


No: ZL2009102413690

Clinical trials

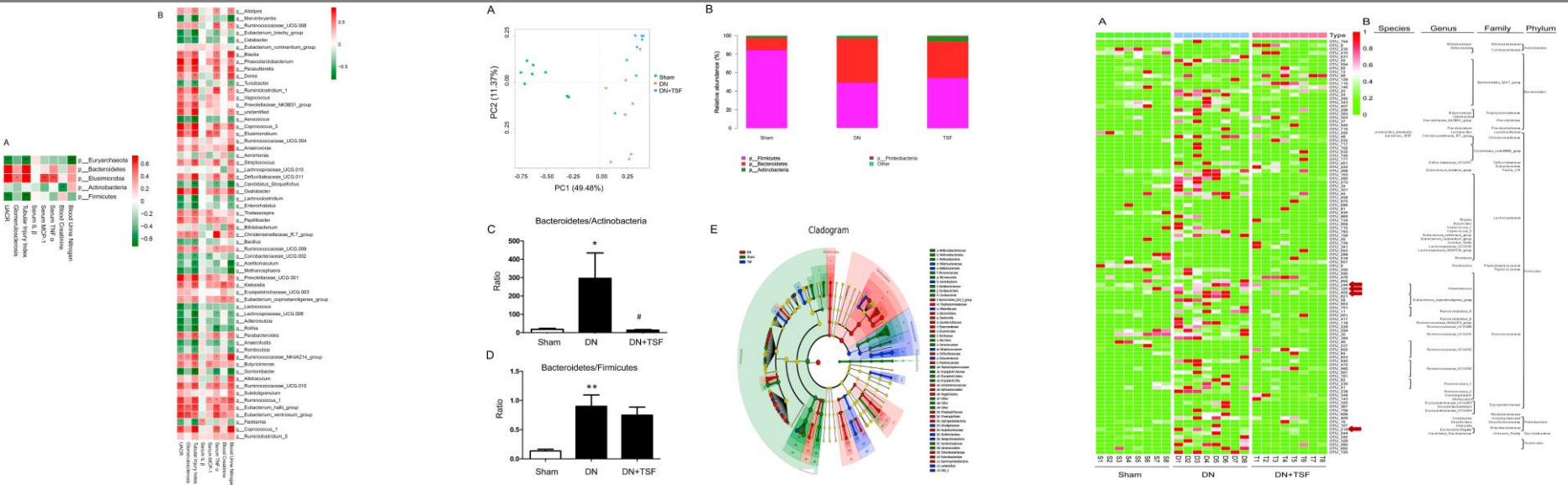
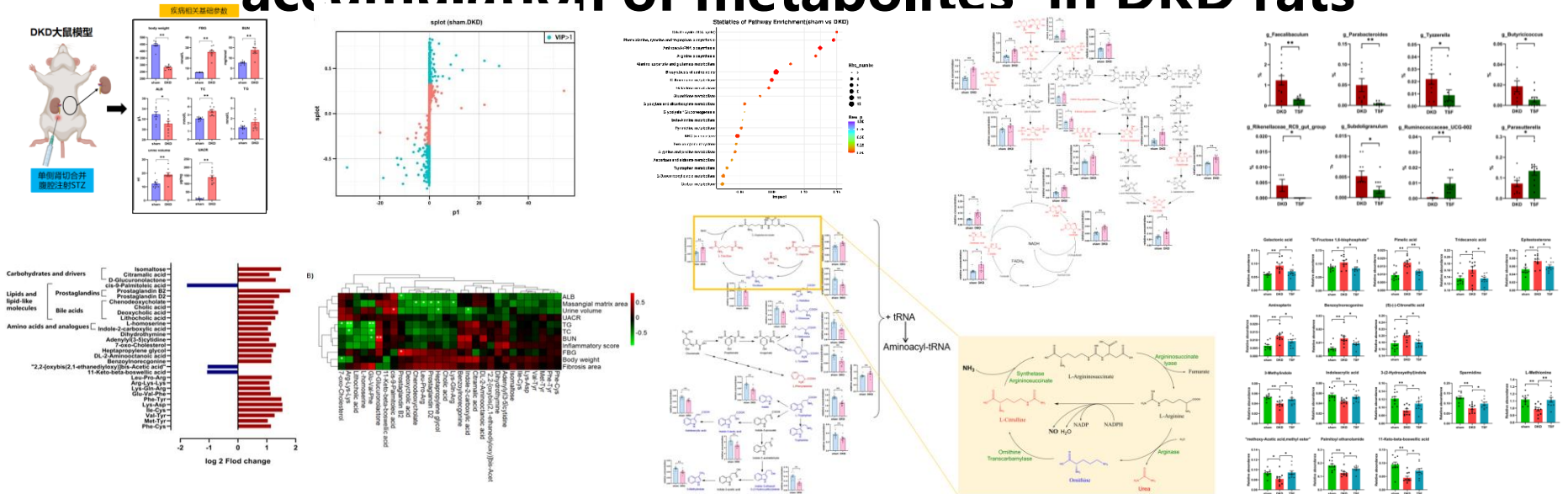
Randomized double-blind placebo parallel controlled multi-center clinical trial

The registration number: ChiCTR-TRC-10000843; ChiCTR-TRC-13003566
 Case: 324 (180+144)
 Administration: **TSF group**: ACEI/ARB+TSF
Placebo group: ACEI/ARB+Placebo
 Intervention duration: 24 weeks



Declare the new mechanism of TSF for alleviating the disturbance of gut microbiots and abnormal accumulation of metabolites in DKD rats

研究基础



Clinical advantage and new mechanism of Tangshen Formula for the treatment of diabetic kidney disease was award big progress in 2022



证书

中药治疗糖尿病肾脏疾病优势特色及作用机制
阐述取得新进展人选

2022年度中医药十大学术进展

完成团队：中日友好医院李平教授团队



Contents

- 1.China Academy of Chinese Medical Science
- 2.Beijing University of Chinese Medicine
- 3.PLA Institute of Chinese Materia Medica
- 4.China-Japan Friendship Hospital
- 5.School of TCM, Capital Medical University



Novel researches in TCM synthetic biology

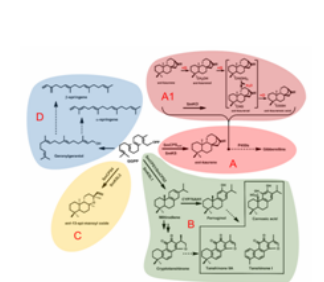


Fig1. Four different diterpenoid biosynthetic pathways in *S. miltiorrhiza*. (A) Gibberellin biosynthetic pathway. (A1) Proposed mechanism for SmKQ conversion of ent-kaurane into ent-kauronic acid35. (B) Taishenone biosynthetic pathway. (C,D) Unknown diterpenoid biosynthetic pathways.

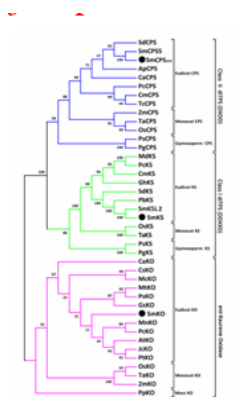


Fig2. Phylogenetic tree of CPS, KS and KO from different species.

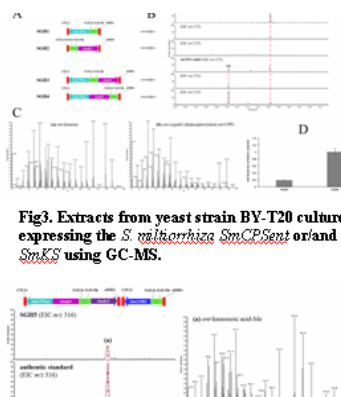
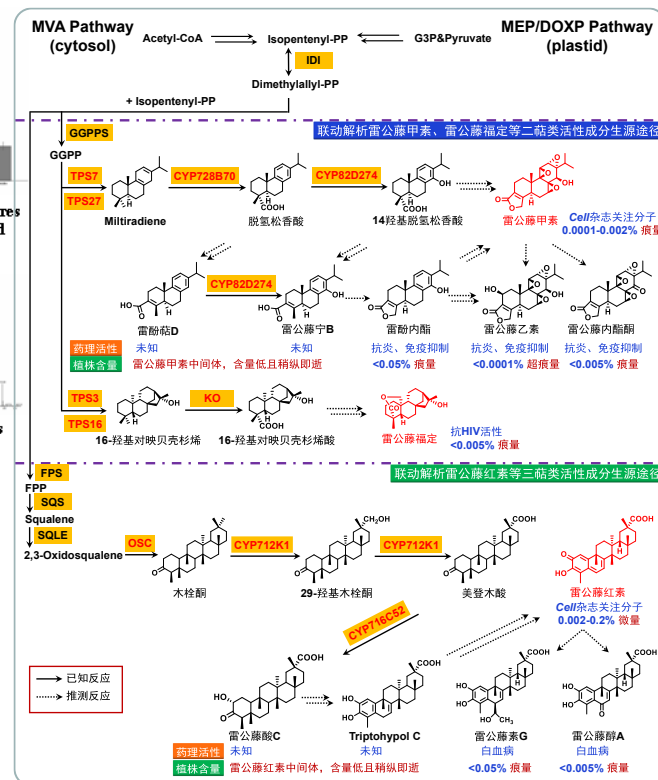


Fig3. Extracts from yeast strain BY-T20 cultures expressing the *S. miltiorrhiza* SmCPSent or/and SmKS using GC-MS.

Fig4. The product from BY-T20 yeast strains expressing the *S. miltiorrhiza* SmKQ.



- Novel synthetic biology platform for production of highly active compounds in *Tripterygium wilfordii* (雷公藤) and *Salvia miltiorrhiza* (丹参) and discovery of new skeleton compounds with novel pharmacological merits

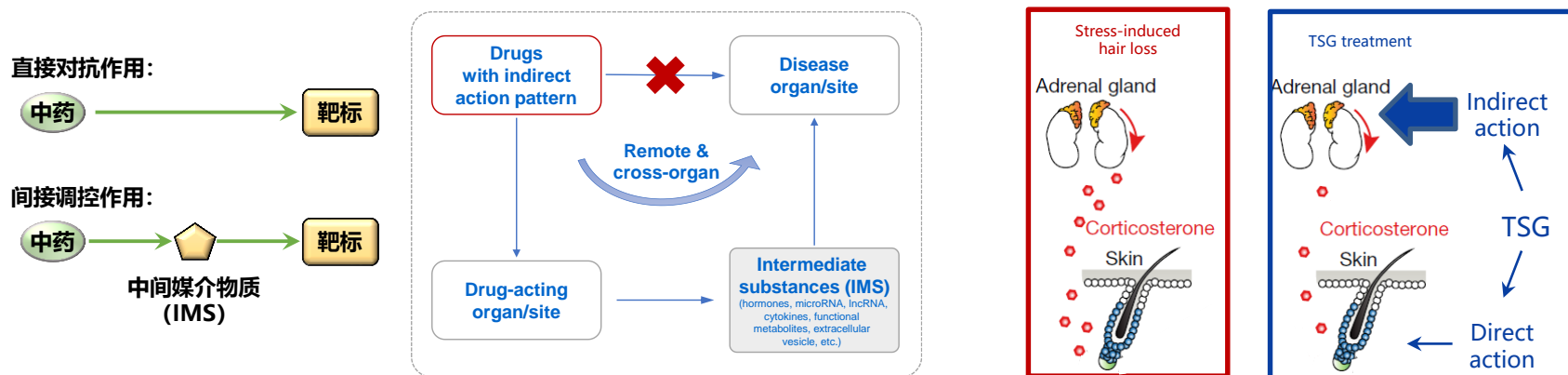
Nat Comm. 2023;14, 875

Plant J. 2022;109(3):555

Nat Cataly. 2020;3:64-74

Innovation of TCM pharmacology

- The indirect action (INDA) model of TCM via remote and cross-organ regulation
- Example: *Polygonum multiflorum* (何首乌) reverses stress-induced hair loss by mainly regulating adrenal gland corticosteroid synthesis except for less action on hair follicles



□ 首都医科大学药理和毒理学科进入ESI学科全球1%，中药药理学入选国家中医药管理局高水平重点学科



中日友好医院
CHINA-JAPAN FRIENDSHIP HOSPITAL

第19届中药全球化联盟会议 19th MEETING OF CGCM

CHENGDU | 成都

2023.08.22-24 | AUGUST 22-24, 2023

主办机构：中药全球化联盟

Sponsor: Consortium for Globalization of Chinese Medicine

承办单位：成都中医药大学

Local Organizer: Chengdu University of Traditional Chinese Medicine



THANK YOU FOR YOUR ATTENTION!

