

The January 2021 Newsletter of The GP-TCM Research Association



Contents of the GP-TCM RA Newsletter January 2021

• Highlights on Achievements of GP-TCM RA Members

- Acupuncture for chronic nonspecific low back pain.
- Evolution of the adaptogenic concept from traditional use to medical systems: Pharmacology of stress- and aging-related diseases.
- SCM stages new exhibition to highlight global emergence of traditional Chinese medicine.

• Feature Story

A Blockchain Platform for Chinese Medicine

• Selected Information on COVID-19

- Pandemic could mark 'turning point' for Chinese science.
- SARS-CoV-2 spillover events.

• Selected Information on Brexit

What the landmark Brexit deal means for science.

• Recommended Reading

- *Tripterygium wilfordii*: An inspiring resource for rheumatoid arthritis treatment.
- Antidiabetic effects of Gegen Qinlian Decoction via the gut microbiota are attributable to its key ingredient berberine.
- Notable Articles of 2020.
- Natural Products Chemistry of Global Plants.
- The Baseline Report for the Decade of Healthy Ageing 2021–2030.

• Invitation from Frontiers

Epithelial Plasticity and Complexity in Development, Disease and Regeneration

• Invitations from WJTCM, the Official Journal of GP-TCM RA

- Pharmacology and Toxicology of Herbal Medicine
- Systems Biology and Metabolomics of Traditional Chinese Medicine
- Diabetes and Vascular Disease with TCM
- Biosynthesis-Driven Quality Design of Materia Medica
- Qi Deficiency and Blood Stasis

• Monthly Chinese Materia Medica Highlights: Yulan and white champak

Acknowledgements: The editors would like to thank Dr **Albert Wong** (Hong Kong), Prof **Alexander Shikov** (St. Petersburg), Dr **Chi Zhang** (Beijing), Prof **Clara Lau** (Hong Kong), Prof **Hubiao Chen** (Hong Kong), Prof **Jiqing Liu** (Shenzhen), Prof **Lixing Lao** (Hong Kong), Prof **Pierre Duez** (Mons), Prof **Rudolf Bauer** (Graz), Prof **Vivian Wong** (Hong Kong), Prof **Zhongzhen Zhao** (Hong Kong), and the **WJTCM Editorial Office** (Beijing) for their great contributions.

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The January 2021 Newsletter of The GP-TCM Research Association



Highlights on Achievements of GP-TCM RA Members

1. **Acupuncture for chronic nonspecific low back pain.** *Cochrane Database of Systematic Reviews*. 2020. **Background:** Chronic nonspecific low back pain (LBP) is very common; it is defined as pain without a recognizable etiology that lasts for more than three months. Some clinical practice guidelines suggest that acupuncture can



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Cochrane Database of Systematic Reviews

[Intervention Review]

Acupuncture for chronic nonspecific low back pain

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Editorial group: Cochrane Back and Neck Group.

Publication status and date: New, published in Issue 12, 2020.

Citation: Mu J, Furlan AD, Lam WY, Hsu MY, Ning Z, Lao L. Acupuncture for chronic nonspecific low back pain. *Cochrane Database of Systematic Reviews* 2020, Issue 12. Art. No.: CD013814. DOI: [10.1002/14651858.CD013814](https://doi.org/10.1002/14651858.CD013814).

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offer an effective alternative therapy. This review is a split from an earlier Cochrane review and it focuses on chronic LBP. **Objectives:** To assess the effects of acupuncture compared to sham intervention, no treatment, or usual care for chronic nonspecific LBP. **Search methods:** We searched CENTRAL, MEDLINE, Embase, CINAHL, two Chinese databases, and two trial registers to 29 August 2019 without restrictions on language or publication status. We also screened reference lists and LBP guidelines to identify potentially relevant studies. **Selection criteria:** We included only randomized controlled trials (RCTs) of acupuncture for chronic nonspecific LBP in adults. We excluded RCTs that investigated LBP with a specific etiology. We included trials comparing acupuncture with sham intervention, no treatment, and usual care. The primary outcomes were pain, back-specific functional status, and quality of life; the secondary outcomes were pain-related disability, global assessment, or adverse events. **Data collection and analysis:** Two review authors independently screened the studies, assessed the risk of bias and extracted the data. We meta-analyzed data that were clinically homogeneous using a random-effects model in Review Manager 5.3. Otherwise, we reported the data qualitatively. We used the GRADE approach to assess the certainty of the evidence. **Main results:** We included 33 studies (37 articles) with 8270 participants. The majority of studies were carried out in Europe, Asia, North and South America. Seven studies (5572 participants) conducted in Germany accounted for 67% of the participants. Sixteen trials compared acupuncture with sham intervention, usual care, or no treatment. Most studies had high risk of performance bias due to lack of blinding of the acupuncturist. A few studies were found to have high

The January 2021 Newsletter of The GP-TCM Research Association



risk of detection, attrition, reporting or selection bias. We found low-certainty evidence (seven trials, 1403 participants) that acupuncture may relieve pain in the immediate term (up to seven days) compared to sham intervention (mean difference (MD) -9.22, 95% confidence interval (CI) -13.82 to -4.61, visual analogue scale (VAS) 0-100). The difference did not meet the clinically important threshold of 15 points or 30% relative change. Very low-certainty evidence from five trials (1481 participants) showed that acupuncture was not more effective than sham in improving back-specific function in the immediate term (standardized mean difference (SMD) -0.16, 95% CI -0.38 to 0.06; corresponding to the Hannover Function Ability Questionnaire (HFAQ, 0 to 100, higher values better) change (MD 3.33 points; 95% CI -1.25 to 7.90)). Three trials (1068 participants) yielded low-certainty evidence that acupuncture seemed not to be more effective clinically in the short term for quality of life (SMD 0.24, 95% CI 0.03 to 0.45; corresponding to the physical 12-item Short Form Health Survey (SF-12, 0-100, higher values better) change (MD 2.33 points; 95% CI 0.29 to 4.37)). The reasons for downgrading the certainty of the evidence to either low to very low were risk of bias, inconsistency, and imprecision. We found moderate-certainty evidence that acupuncture produced greater and clinically important pain relief (MD -20.32, 95% CI -24.50 to -16.14; four trials, 366 participants; (VAS, 0 to 100), and improved back function (SMD -0.53, 95% CI -0.73 to -0.34; five trials, 2960 participants; corresponding to the HFAQ change (MD 11.50 points; 95% CI 7.38 to 15.84)) in the immediate term compared to no treatment. The evidence was downgraded to moderate certainty due to risk of bias. No studies reported on quality of life in the short term or adverse events. Low-certainty evidence (five trials, 1054 participants) suggested that acupuncture may reduce pain (MD -10.26, 95% CI -17.11 to -3.40; not clinically important on 0 to 100 VAS), and improve back-specific function immediately after treatment (SMD: -0.47; 95% CI: -0.77 to -0.17; five trials, 1381 participants; corresponding to the HFAQ change (MD 9.78 points, 95% CI 3.54 to 16.02)) compared to usual care. Moderate-certainty evidence from one trial (731 participants) found that acupuncture was more effective in improving physical quality of life (MD 4.20, 95% CI 2.82 to 5.58) but not mental quality of life in the short term (MD 1.90, 95% CI 0.25 to 3.55). The certainty of evidence was downgraded to moderate to low because of risk of bias, inconsistency, and imprecision. Low-certainty evidence suggested a similar incidence of adverse events immediately after treatment in the acupuncture and sham intervention groups (four trials, 465 participants) (RR 0.68 95% CI 0.46 to 1.01), and the acupuncture and usual care groups (one trial, 74 participants) (RR 3.34, 95% CI 0.36 to 30.68). The certainty of the evidence was downgraded due to risk of bias and imprecision. No trial reported adverse events for acupuncture when compared to no treatment. The most commonly reported adverse events in the acupuncture groups were insertion point pain, bruising, hematoma, bleeding, worsening of LBP, and pain other than LBP (pain in leg and shoulder). **Authors' conclusions:** We found that acupuncture may not play a more clinically meaningful role than sham in relieving pain immediately after treatment or in improving quality of life in the short term, and acupuncture possibly did not improve back function compared to sham in the immediate term. However, acupuncture was more effective than no treatment in improving pain and function in the immediate term. Trials with usual care as the control showed acupuncture may not reduce pain clinically, but the therapy may improve function immediately after sessions as well as physical but not mental quality of life in the short term. The evidence was downgraded to moderate to very low-certainty considering most of studies had high risk

The January 2021 Newsletter of The GP-TCM Research Association



of bias, inconsistency, and small sample size introducing imprecision. The decision to use acupuncture to treat chronic low back pain might depend on the availability, cost and patient's preferences. Details: <https://pubmed.ncbi.nlm.nih.gov/33306198/>

2. Evolution of the adaptogenic concept from traditional use to medical systems: Pharmacology of stress- and aging-related diseases. *Medicinal Research Reviews*.



2021. Adaptogens comprise a category of herbal medicinal and nutritional products promoting adaptability, resilience, and survival of living organisms in stress. The aim of this review was to summarize the growing knowledge about common adaptogenic plants used in various traditional medical systems (TMS) and conventional medicine and to provide a modern rationale for their use in the treatment of stress-induced and aging-related disorders. Adaptogens have pharmacologically pleiotropic effects on the neuroendocrine - immune

system, which explain their traditional use for the treatment of a wide range of conditions. They exhibit a biphasic dose-effect response: at low doses they function as mild stress-mimetics, which activate the adaptive stress-response signaling pathways to cope with severe stress. That is in line with their traditional use for preventing premature aging and to maintain good health and vitality. However, the potential of adaptogens remains poorly explored. Treatment of stress and aging-related diseases require novel approaches. Some combinations of adaptogenic plants provide unique effects due to their synergistic interactions in organisms not obtainable by any ingredient independently. Further progress in this field needs to focus on discovering new combinations of adaptogens based on traditional medical concepts. Robust and rigorous approaches including network pharmacology and systems pharmacology could help in analyzing potential synergistic effects and, more broadly, future uses of adaptogens. In conclusion, the evolution of the adaptogenic concept has led back to basics of TMS and a new level of understanding of holistic approach. It provides a rationale for their use in stress-induced and aging-related diseases. (With 628 references) Details: <https://doi.org/10.1002/med.21743>

The January 2021 Newsletter of The GP-TCM Research Association



3. **SCM stages new exhibition to highlight global emergence of traditional Chinese medicine.**

The exhibition titled "Voyage of *bencao* — people and stories of Chinese medicine along the Belt and Road" has opened at Dr. & Mrs. Hung Hin Shiu Museum of Chinese Medicine, and will be running until 30 June this year. Co-organised by the School of Chinese Medicine (SCM) and Phoenix Exhibitions Co. Ltd, the exhibition went on display in several locations across mainland China before being brought to Hong Kong with the



support of the Jiangyin Tianjiang Pharmaceutical Co., Ltd. Professor Zhao Zhongzhen, Chair Professor of SCM and world-renowned authority on *bencao* (Chinese *materia medica*) is the creative force behind this joint project. Drawing upon decades of field studies in more than forty countries and regions, Professor Zhao curated a special selection of anecdotes and photos about the spread of Chinese medicine along the Belt and Road. Not only does it provide a historical account of major events in the course of exchange between Eastern and Western traditional medicine, it also gives viewers an overview of the overseas and contemporary development of Chinese medicine. To complement the exhibition, Professor Zhao has recently released a new book to give a more detailed account of his discoveries on his journeys along the Belt and Road. The virtual tour of the exhibition will be available to the public from 1 February. Please stay tuned for further updates on the SCM website. Details: https://scm.hkbu.edu.hk/en/news/news_830.html

Feature Story

A Blockchain Platform for Chinese Medicine. The advent of **Blockchain**, with its unique **immutability** characteristic for records by means of asymmetric cryptography, decentralization and other attributes, shall be an important tool in the 21st century to reinforce the authenticity, credibility and reputations of organizations and products. **The Chinese University of Hong Kong (CUHK) and Modernized Chinese Medicine International Association (MCMIA)** joined forces in 2019 to organize a blockchain platform to serve the herbal industry in the Greater China Region. It will be opened progressively to the various sectors of the Chinese medicine (CM) industry upon the completion of its "pilot phase" in 2021.

The January 2021 Newsletter of The GP-TCM Research Association



Introduction Medicines of natural origin are complicated, which commonly contain multiple ingredients and are affected by environmental, climatic and processing factors. All these make their monitoring challenging. Despite the adoption of modern horticulture, processing and analytical technologies, there is no effective way to monitor the growth, manufacturing, processing and distribution of these products comprehensively. These inadequacies make it difficult to hamper the occurrence of fraudulent, substandard, and counterfeit products in the market. Recently, a new information technology (IT), Blockchain, has emerged. This provides an advanced approach to address the above problems and help restore consumer confidence in natural products especially in Chinese medicine which is picking up momentum in the market since the onset of the Pandemic.

The Blockchain The objective of a blockchain is to provide a recording system where any dated (time stamped) statement entered into it cannot be altered (distributive immutable ledger). It is highly encrypted (asymmetric cryptography) and lock-stepped (chained) with its previous and subsequently entries. Furthermore, the records are distributed to many independent site-server (decentralized) so that any alteration must be performed in all the sites involved. In Block Chain, erroneous statements can still be amended in another time-stamped record. In this case, other nodes are able to judge if the original mistake was intentionally misleading or not. The consistent records generate trust and certitude to customers as well as encourage transactions among the nodes with the use of the system's binding contracts (smart contracts) to consummate the deals.

1. Decentralization
2. Time stamped ledger
3. Smart contract
4. Transparency

The “Superstructure” of CM Blockchain Platform In general, there are 3 kinds of blockchains: (1) **Open General Blockchain** (operated by all nodes), (2) **Permissioned Blockchain** (operated by a management) and (3) **Private Blockchain** (operated by private entities). The non-profit CM blockchain platform initiated by Li Dak Sum Yip Yio Chin R&D Centre for Chinese Medicine, CUHK and MCMIA uses “permissioned blockchain”. MCMIA contributes industry contacts, operational information as well as the current



草藥鏈
HerBChain

international guidance to help set the admittance criteria and report requirements. CUHK provides scientific advisory and evaluation for the materials submitted to the blockchain platform as well as to organize and operate the blockchain platform itself, including the supervision of the “IT-infrastructure” that runs the blockchain software.

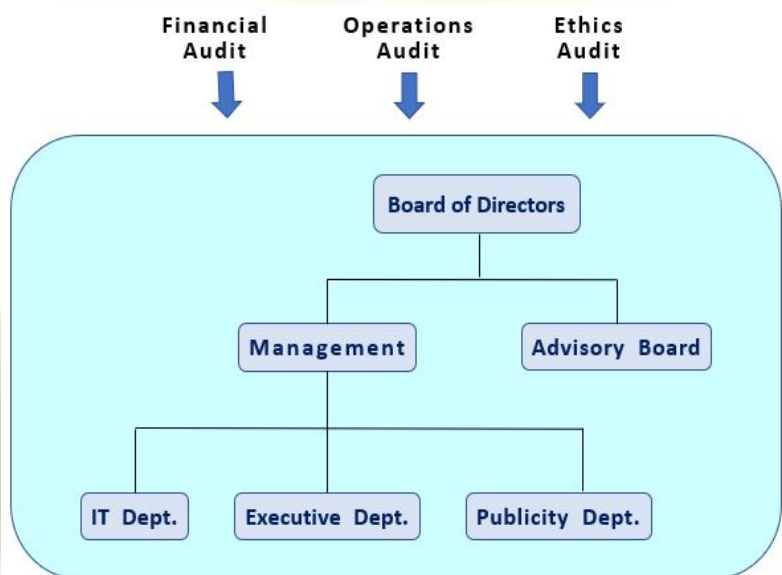
The January 2021 Newsletter of The GP-TCM Research Association



Blockchain's Scope of Operations The CM blockchain operates solely as an information platform that compiles records which have been duly verified. The blockchain with its auxiliary software aims at facilitating interactions, collaboration and transactions among nodes. The CM blockchain management does NOT serve as an arbitrator and would not be involved in any dispute arising from among the nodes. For any fraudulent or misrepresented record found, the management could request a new remedial record for rectifying. If the situation continues, the management could remove the offending nodes from the platform temporarily or permanently. Meanwhile, these events are duly documented in the records for all to see.

CM Blockchain's Organizational Structure The CM blockchain operates as a non-profit NGO (non-government organization) under the supervision of a Board of Directors

appointed by CUHK and MCMIA, and supported by an Advisory Board composed of both technical, industrial and independent experts. A Management Team consists of 3 departments (Executive, IT and Publicity) operates the platform according to the guidelines, directives and SOPs issued by the Board of Directors. The CM blockchain will be audited regularly to ensure conformity to the financial, operational and



ethical directions in the Articles of Association of the CM blockchain. As a self-sustaining operation, the CM blockchain charges registration fee and product admission fee to all the nodes and service charges for the monetary transactions. It accepts donations from supporters sharing its vision. Once the preset amount of the platform's sinking-fund is reached, the fees charged by the platform should be based on the annual budget need to ensure its effective operations. The platform should be free of any speculative activities as it does not provide incentives for participations in transactions, hence no bitcoin or any form of digital currency will be issued.

Conclusion The introduction of medical/pharmaceutical blockchains in the 21st century serves to thwart repeated fraudulence and deceptions through its immutability within a highly vigilant environment. Hopefully, this feature is sufficient to reinforce ethical standards in healthcare and to affirm consumers' confidence in the system. If nothing else, the modern day 'snake-oil' pusher will be forced to explain why they refrain from joining adroitly run blockchains. (Contributed by **Albert Bak-wei Wong, Pang Chui Shaw, Mavis Hong Yu Yik, and Vivian Chi Woon Taam Wong**)

The January 2021 Newsletter of The GP-TCM Research Association



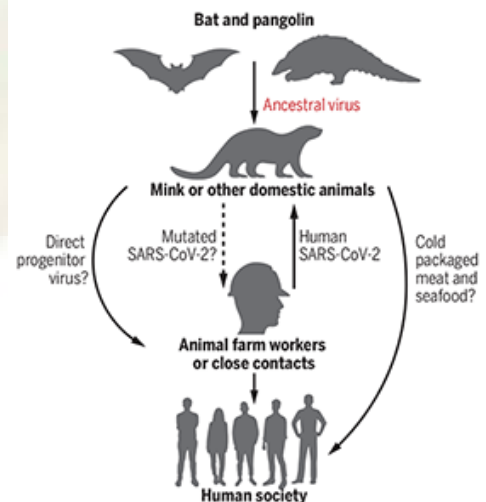
Selected Information on COVID-19

1. **Pandemic could mark 'turning point' for Chinese science.** *Science*. 2021. The 10 most cited COVID-19 papers of the first 6 months of 2020, based on data from Elsevier's Scopus database, all came from China, according to an August study in *Scientometrics*; the *Lancet* paper topped the list. That's a sharp contrast to what happened during the global outbreak of severe acute respiratory syndrome (SARS) in 2003, when researchers here, stifled by prolonged political denial about the crisis, made few contributions. For SARS, "China's scientists were not so well prepared," says Wang Weibing, an epidemiologist at Fudan University. "This time was different." Details: <https://www.sciencemag.org/news/2021/01/pandemic-could-mark-turning-point-chinese-science>

2. **SARS-CoV-2 spillover events.** *Science*. 2021. Severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), and COVID-19 all broke out in recent decades and are caused by different strains of coronavirus (CoV). These viruses are considered to originate from bats and to have been transmitted to humans through intermediate hosts. SARS-CoV was identified in palm civets in wildlife markets and MERS-CoV in dromedary camels, but the direct source of the COVID-19 causative agent, SARS-CoV-2, is still undetermined. On page 172 of this issue, Oude Munnink *et al.* report an in-depth investigation of SARS-CoV-2 infections in animals and humans working or living in 16 mink farms in the Netherlands. SARS-CoV-2 infections were detected in 66 out of 97 (68%) of the owners, workers, and their close contacts. Some people were infected with viral strains with an animal sequence signature, providing evidence of SARS-CoV-2 spillover back and forth between animals and humans within mink farms. Details: <https://science.sciencemag.org/content/371/6525/120>

Possible SARS-CoV-2 transmission chains

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) spillover likely occurred from bat and/or pangolin (ancestral virus) through unidentified intermediate host animals (direct progenitor virus). Human SARS-CoV-2 strains infect susceptible domestic animals (such as mink) and likely adapt to these species through mutation. The virus can be transmitted from mink back to farm workers and close contacts. SARS-CoV-2 can also be transmitted to humans through contact with contaminated uncooked meat or food packaging.



Selected Information on Brexit

What the landmark Brexit deal means for science. *Nature*. 2021. The eleventh-hour trade agreement between Britain and the European Union came as a relief to UK researchers because it means that they can be funded by EU programmes. Details: <https://doi.org/10.1038/d41586-021-00009-y>

The January 2021 Newsletter of The GP-TCM Research Association



- Funding: UK scientists can win EU grants;
- Nuclear research: UK and EU researchers to cooperate;
- Space: Britain stays part of satellite programme;
- Laboratory supplies: new tariffs avoided;
- Students: UK leaves popular exchange programme;
- Immigration: points-based system starts.

Recommended Reading

1. *Tripterygium wilfordii*: An inspiring resource for rheumatoid arthritis treatment.

Medicinal Research Reviews. 2020. *Tripterygium wilfordii* Hook F (TwHF) - based therapy is among the most efficient and crucial therapeutics for the treatment of rheumatoid arthritis (RA), which indicates that TwHF is a potential source of novel anti-RA drugs. However, accumulating studies have observed that TwHF-based therapy induces multi-organ toxicity, which prevents the wide use of this herb in clinical practice, although several recent studies have attempted to reduce the toxicity of TwHF. Notably, our research group developed a “Clinical Practice Guideline for Tripterygium Glycosides/Tripterygium wilfordii Tablets in the Treatment of Rheumatoid Arthritis” (No. T/CACM 1337-2020) approved by the China Association of Chinese Medicine to standardize the clinical application of TwHF-based therapy and thus avoid adverse effects. Although great strides have been made toward the characterization of TwHF-based therapy and revealing its underlying pharmacological and toxicological mechanisms, several crucial gaps in knowledge remain as potential barriers to enhance its therapeutic effects on the premise of safety assurance. This review offers a global view of TwHF, ranging from its chemical constituents, quality control, clinical observations, and underlying pharmacological mechanisms to toxic manifestations and mechanisms. We focus on the important and emerging aspects of this field and highlight the major challenges and strategies for using novel techniques and approaches to gain new insights into unresolved questions. We hope that this review will improve the understanding of TwHF application and draw increasing interdisciplinary attention from clinicians that practice both Chinese and Western medicine, basic researchers, and computer scientists. Details: <https://doi.org/10.1002/med.21762>

2. Antidiabetic effects of Gegen Qinlian Decoction via the gut microbiota are attributable to its key ingredient berberine. *Genomics, Proteomics & Bioinformatics*. 2020. Gegen Qinlian Decoction (GQD), a traditional Chinese medicine (TCM) formula, has long been used for the treatment of common metabolic diseases, including type 2 diabetes mellitus. However, the main limitation of its wider application is ingredient complexity of this formula. Thus, it is critically important to identify the major active ingredients of GQD and to illustrate mechanisms underlying its action. Here, we compared the effects of GQD and berberine, a hypothetical key active pharmaceutical ingredient of GQD, on a diabetic rat model by comprehensive analyses of gut microbiota, short-chain fatty acids, proinflammatory cytokines, and ileum

The January 2021 Newsletter of The GP-TCM Research Association



transcriptomics. Our results show that berberine and GQD had similar effects on lowering blood glucose levels, modulating gut microbiota, inducing ileal gene expression, as well as relieving systemic and local inflammation. As expected, both berberine and GQD treatment significantly altered the overall gut microbiota structure and enriched many butyrate-producing bacteria, including *Faecalibacterium* and *Roseburia*, thereby attenuating intestinal inflammation and lowering glucose. Levels of short-chain fatty acids in rat feces were also significantly elevated after treatment with berberine or GQD. Moreover, concentration of serum proinflammatory cytokines and expression of immune-related genes, including *Nfkb1*, *Stat1*, and *Ifnrg1*, in pancreatic islets were significantly reduced after treatment. Our study demonstrates that the main effects of GQD can be attributed to berberine via modulating gut microbiota. The strategy employed would facilitate further standardization and widespread application of TCM in many diseases. Details: <https://doi.org/10.1016/j.gpb.2019.09.007>

3. Notable Articles of 2020. *New England Journal of Medicine*. History has shown that the world would always be wise to prepare for a pandemic. The past decade provided



some early lessons with emerging infectious diseases: West Africa and Ebola, the Arabian Peninsula and MERS. Nonetheless, in 2020, SARS-CoV-2 has challenged the health care community in ways that were difficult to predict. Reports started to emerge in December 2019 that a new virus had been seen in China. During the early months of 2020 and the pandemic, we knew little about Covid-19 transmission or severity. As the number of cases rose, many treatments were used off-label and outside the boundaries of clinical trials. We had little choice but to make decisions based on observational data. Because of this, it was hard to know whether the treatments were working. During this chaotic time, physicians, nurses, and other health care workers took care of patients at real risk to themselves. Months passed. The uniform desperation felt at the beginning of the pandemic

lessened. We saw that rapidly initiated, high-quality randomized clinical trials were possible in epidemic conditions, even in the trying circumstances that prevailed in Wuhan, China, in January and February. As we became more familiar with the Covid-19 virus, more effective protocols emerged to treat patients, thanks to an explosion of randomized, controlled trials that gave us better information. As the year progressed, we saw the development of many vaccine candidates at impressive speed. Still, with a handful of exceptions, the number of Covid-19 cases continues to rise in most of the world. As 2020 comes to a close and we look back at the most notable articles published in the *New England Journal of Medicine* (NEJM), four Covid-19 trials are striking. The first, published online at the end of January, reported on transmission dynamics in Wuhan and demonstrated, even at the very earliest time points, human-to-human transmission. Another, the RECOVERY trial, reported on dexamethasone in hospitalized patients with Covid-19. From RECOVERY, we learned that there is a clear

The January 2021 Newsletter of The GP-TCM Research Association



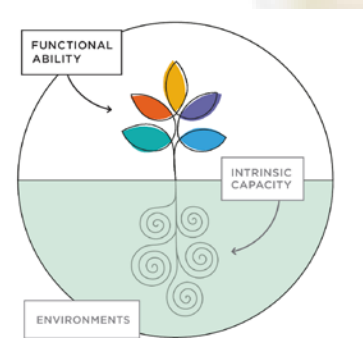
benefit to treatment with dexamethasone and that it can decrease the death rate among this very ill population. The final two Covid articles, published in December, report on mRNA vaccines that appear to give us a pathway out of what has been a global disaster. Other NEJM articles also emerged as practice changing. This collection includes studies of breast cancer, prostate cancer, heart failure, and atrial fibrillation. All fourteen studies in this collection are relevant to the practice of medicine. While we now, at year's end, better understand Covid-19, the disease continues to be a tragedy. We, like many others, expect a difficult winter managing this disease. But we hold to the certainty that eventually this pandemic will end. Until then, we will continue to bring you the best information to treat your patients. (Eric J. Rubin, M.D., Ph.D. Editor-in-Chief, *New England Journal of Medicine*, December 2020) Details: <https://cdn.nejm.org/pdf/Notable-Articles-of-2020.pdf>

4. Natural Products Chemistry of Global Plants. 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. Details: <https://www.routledge.com/Natural-Products-Chemistry-of-Global-Plants/book-series/CRCNPCGP?pd=published,forthcoming&pg=1&pp=12&so=pub&view=list?pd=published,forthcoming&pg=1&pp=12&so=pub&view=list>

5. The Baseline Report for the Decade of Healthy Ageing 2021–2030. This report addresses five issues:

- Introduces Healthy Ageing, the Decade's actions and enablers, and a pathway to accelerate impact by 2030.
- Where are we in 2020? The report provides a first-time baseline for healthy ageing worldwide.
- What improvements could we expect by 2030? It documents progress and scenarios for improvement.
- How can we accelerate impact on the lives of older people? It shows how older people and stakeholders can together optimize functional ability.
- The next steps including opportunities to boost collaboration and impact by 2023, the next reporting period.

<https://www.who.int/publications/m/item/decade-of-healthy-ageing-baseline-report>



**DECADE OF
HEALTHY AGEING
BASELINE REPORT**



The January 2021 Newsletter of The GP-TCM Research Association



Invitation from Frontiers: Epithelial Plasticity and Complexity in Development, Disease and Regeneration

For more information, please visit: <https://www.frontiersin.org/research-topics/18812/epithelial-plasticity-and-complexity-in-development-disease-and-regeneration>

Epithelial plasticity, the ability of epithelial cells to reversibly change phenotype, is a fascinating phenomenon that has been extensively studied for decades. Phenotypic plasticity of the epithelium is a critical and common feature in embryonic development, inflammation/tissue repair, cancer and more recently stem cell differentiation. Most commonly epithelial plasticity refers to the conversion between epithelial and mesenchymal phenotype, processes known as epithelial-to-mesenchymal transition (EMT) and mesenchymal-to-epithelial transition (MET), the reverse process. Both processes are integral stages of many physiological processes and used by cells and tissues to adapt to various stimuli or cellular stress. EMT has been classically defined as a developmental program that is instrumental in early embryo patterning for many organs, characterized by epithelial cells losing cell-to-cell adhesion, epithelial tight junctions, and desmosomes. MET is regarded as the reversible biological process of EMT that involves losing mesenchymal signature and re-acquiring epithelial characteristics. In more recent years, an increasing number of studies have suggested novel aspects of epithelial biology which challenge the traditional classical definition of epithelium. Reports of sub-specialized epithelial, transit-epithelial and the conversion between epithelial sub-types in response to injury promote further investigation into the full complexity of epithelial plasticity and potential novel functions of conventional as well as non-conventional epithelial cells. Though the micro-environmental signals and the responding machineries enabling epithelial cells to change phenotype are yet to be fully identified, the importance of epithelial interactions such as epithelial-endothelial and epithelial-fibroblast crosstalk has been highlighted in inflammatory response, cancer progression and wound repair. In this Research Topic, we would like to call for submission of Original Research, Reviews, Mini-Reviews and Methods that address the fascinating and complex states of epithelial plasticity, their distinctions and function, in both human and various model organisms. We encourage contributions from developmental and cell biologists, biomaterial specialists, engineer, as well as experts in stem cell niches and tissue modelling. **The proposed Research Topic** aims to attract submissions related, but not limited, to the following areas:

- Plasticity, trans-differentiation, specialization, de-differentiation and re-differentiation of epithelial cells, including complete, partial or transient EMT and MET, and related mechanisms, functional implications and pharmacological interventions;
- Micro-environmental signals and regulatory mechanisms that orchestrate the interactions between epithelial and other cell types, e.g. endothelial cells, fibroblasts, pericytes, gamma delta T cells;
- Novel functions of conventional, unconventional and specialized epithelial cells, their interactions with the environments and innovative pharmacological implications;
- Tissue modelling and regenerative approaches utilizing epithelial plasticity, complexity and diverse functions.

Important Note: All contributions to this Research Topic must be within the scope of the section and journal to which they are submitted, as defined in their mission statements. Frontiers reserves the right to guide an out-of-scope manuscript to a more suitable section or journal at any stage of peer review.

Submission Deadlines: 30 April 2021 (Abstract); 27 August 2021 (Manuscript)

Manuscripts can be submitted to this Research Topic via the following journals:
[Frontiers in Cell and Developmental Biology](#) and [Cell Adhesion and Migration](#)

The January 2021 Newsletter of The GP-TCM Research Association



Invitation from the Official Journal of GP-TCM RA

1. WJTCM Call for papers: Pharmacology and Toxicology of Herbal Medicine.

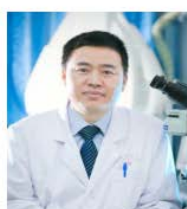


Special Issue on
Pharmacology and Toxicology of Herbal Medicine

CALL FOR PAPERS



Guest Editor
Prof. Hongxi Xu



Guest Editor
Prof. Xuanbin Wang



Guest Editor
Prof. Pulok Kumar Mukhrjee

The special issue on *Pharmacology and Toxicology of Herbal Medicine* focuses on the biological effects and mechanisms of herbal medicine. It has a broad scope, covering basic research to clinical studies regarding pharmacology and toxicology.

We cordially invite researchers and experts to contribute original research articles as well as reviews on pharmacology and toxicology of herbal medicine.

Potential topics include but are not limited to:

- Bioactive principles from herbal medicine,
- Biological, pharmacological activities and mechanisms of herbal medicine,
- Genomics, proteomics, metabolomics, pharmacoinformatics studies on herbal medicine,
- Toxicology of herbal medicine.

Authors can follow the author instructions and submit their manuscripts via the Manuscript System at:

<https://mc03.manuscriptcentral.com/wjtcml>

Guest Editors

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Deadline for submission

January 30, 2021

Intended publication date

April 30, 2021

The January 2021 Newsletter of The GP-TCM Research Association



2. WJTCM Call for papers: Systems Biology and Metabolomics of Traditional Chinese Medicine



Special Issue on
Systems Biology and Metabolomics of Traditional Chinese Medicine

CALL FOR PAPERS



Guest Editor
Prof. Xi-jun Wang



Guest Editor
Prof. Hai-tao Lu



Guest Editor
Prof. Toshiaki Makino

Traditional Chinese Medicines (TCMs) are evidenced to confer therapeutic actions by largely interacting with dysregulated multi-layers molecules that underlie diseases, which can be defined as the holistic characteristics of TCMs to treat different diseases.

The fact is that systems biology, and metabolomics have the robust-capacity to better understand the holistic characteristics by globally deciphering the complex interactions between TCMs and diseases associated with dysregulated molecules. Currently, they are widely used to address many key questions in TCMs involving chemical characterization, therapeutic efficacy, toxicology and metabolic features, etc.

We invite the scholars in the niches to contribute research articles, reviews, and perspectives to this special issue.

Potential topics include but are not limited to:

- metabolomics of TCMs
- multiple omics of TCMs
- network pharmacology of TCMs
- systems biology of TCMs

Authors can submit their manuscripts via the Manuscript System at <https://mc03.manuscriptcentral.com/wjtcmm>

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May. 30, 2021

Intended publication date

October 30, 2021

The January 2021 Newsletter of The GP-TCM Research Association



3. WJTCM Call for papers: **Diabetes and Vascular Disease with TCM**

World Journal of Traditional Chinese Medicine (WJTCM)

The official journal of WFCMS and GP-TCM



Special Issue on
Diabetes and Vascular Disease with TCM

CALL FOR PAPERS



Guest Editor
Prof. Qiao-Bing Huang



Guest Editor
Prof. Zi-Lin Sun



Guest Editor
Prof. Jing Li

The diabetic incidence is increasing worldwide, with vascular disease as one of the common complications of diabetes, which is also one of the major causes of death of diabetic patients. The most common vascular diseases include cardio-cerebral vascular disease, renal, retinal, and skin microvascular lesions. The earliest Chinese medical classics “Huangdi’s Classic on Medicine” has regarded Diabetes as “Xiaoke Lesion”. Vascular complications could be classified into Jingmai (Meridians)-related syndromes in TCM, offering theoretic basis for its clinical treatment based on differentiation of signs.

We invite researchers home and abroad to contribute original research articles as well as reviews on the topic of Diabetes and Vascular Disease with TCM.

Potential topics include but are not limited to:

- The new idea of TCM category of diabetic vascular complications
- TCM treatment strategy of different diabetic vascular complications
- The effect of promoting blood circulation and removing blood stasis (Huo-xue-hua-yu) in the treatment of diabetic vascular complications
- Advanced development regarding diabetic vascular complications

Authors can submit their manuscripts via the Manuscript System at <https://mc03.manuscriptcentral.com/wjtcn>.

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Manuscript Due
January 30, 2022

Intended publication date
March 25, 2022

The January 2021 Newsletter of The GP-TCM Research Association



4. WJTCM Call for papers: Biosynthesis-Driven Quality Design of Materia Medica

World Journal of Traditional Chinese Medicine (WJTCM)

The official journal of WFCMS and GP-TCM



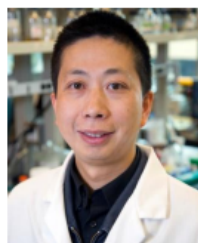
Special Issue on

Biosynthesis-Driven Quality Design of Materia Medica

CALL FOR PAPERS



Guest Editor
Prof. Wan-Sheng Chen



Guest Editor
Prof. Ji-Xun Zhan



Guest Editor
Prof. Shu-Juan Zhao

Biosynthesis and metabolic engineering together with molecular breeding provides an attractive approach to enhance the yield of effective components in medicinal plants and thus to improve or design the quality of Chinese Materia Medica, which is a great motivation for the sustainable development of the entire supply chain of traditional Chinese medicines.

We invite researchers home and abroad to contribute original research articles as well as reviews on the topic of biosynthesis-driven quality design of Chinese Materia Medica and other herbs.

Potential topics include but not limited to:

- Elucidation and mapping of biosynthetic pathways of the effective components.
- Metabolic engineering or regulation for the improvement of herbal quality.
- Progress in understanding the biosynthesis of effective components.
- Application of molecular breeding technology to medicinal plants.

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Authors can submit their manuscripts via the Manuscript System at <https://mc03.manuscriptcentral.com/wjtcem>.

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Manuscript Due Date
March 30, 2021

Intended Publication Date
June 25, 2021

The January 2021 Newsletter of The GP-TCM Research Association



5. WJTCM Call for papers: Qi Deficiency and Blood Stasis

World Journal of Traditional Chinese Medicine (WJTCM)

The official journal of WFCMS and GP-TCM



Special Issue on
Qi Deficiency and Blood Stasis

CALL FOR PAPERS



Guest Editor
Prof. Jing-Yan Han



Guest Editor
Prof. Jian-Xun Liu



Guest Editor
Prof. Jing-Yuan Mao



Guest Editor
Prof. Ming-Jun Zhu

Qi deficiency and blood stasis is a common feature in coronary heart disease, cardiac hypertrophy, myocardial ischemia-reperfusion injury and heart failure, for which there is a lack of effective prevention and treatment methods in modern medicine. Some traditional Chinese medicine (TCM) has shown beneficial effect on heart diseases in clinic, and increasing clinical and basic studies have been carried out devoting to the mechanism behind these medicines, particularly focusing on their potential of tonifying Qi and promoting blood circulation, as well as the scientific essence of the Qi deficiency and Blood Stasis. In order to exchange the latest research results in this field, we have organized special issues of Qi deficiency and blood stasis, tonifying Qi and promoting blood circulation. Experts from this field are welcome to contribute original research articles or reviews.

Potential topics include but not limit to:

- Reviews on Qi deficiency and blood stasis, tonifying Qi and promoting blood circulation
- Clinical studies regarding Qi deficiency and blood stasis and tonifying Qi and promoting blood circulation
- Basic studies regarding Qi deficiency and Blood Stasis and tonifying Qi and promoting blood circulation
- Pharmacological mechanisms of tonifying Qi and promoting blood circulation

Authors can submit their manuscripts via the Manuscript System at <https://mc03.manuscriptcentral.com/wjtcn>.

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Accept submission date:

July. 30, 2020-July, 25, 2021

The January 2021 Newsletter of The GP-TCM Research Association



Monthly Chinese Materia Medica Highlights

Yulan (*Magnolia denudata*, Magnoliaceae, 玉兰, left) and white champak (*Michelia x alba*, Magnoliaceae, 白兰, right)



Native to China and widely cultivated in temperate regions all over the world, yulan is one of the 3 botanical origins of Chinese medicinal xinyi (magnoliae flos). The **flower buds** are harvested in late winter or early spring, cleaned of stems, and dried in the shade. Official in current Chinese Pharmacopeia, magnoliae flos expels wind-cold and unblocks the nasal passages. It is indicated for wind-cold exterior syndrome with nasal congestion, as well as any nasal or sinus condition. Originated from Indonesia, white champak is a hybrid and is widely cultivated (by grafting) in southern China. The **fresh or dried flower** (micheliae albae flos) and **leaf** (micheliae albae folium) are folk medicinals. Micheliae albae flos transforms dampness, regulates qi, and unblocks orifice. It is indicated for abdominal distension, vaginal discharge due to retention of dampness and qi stagnation, and nasal congestion. Micheliae albae folium clears heat, promotes urination, stops coughing, and transforms phlegm. It is indicated for urinary difficulty, coughing and asthma.

Magnoliaceae (around 300 species) is a distinctive family of trees and shrubs often with luxurious flowers. All species are ornamental and some are of medicinal values. They were divided into 17 genera historically. However, based on DNA analysis, many botanists prefer to recognize only 2 genera (*Liriodendron* and *Magnolia*). In this capacity, only 2 species are included in *Liriodendron*, and the rest of species in this family are categorized as *Magnolia*.

玉兰

风中独立玉兰花
朵朵云开枝作涯
岁岁皆来春望去
知恩图报痛时夸

白兰

白兰花朵最怡人
秋夏皆来两度春
叶下幽香颜似雪
心中有爱是求真

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