

The December 2017 Newsletter of The GP-TCM Research Association Christmas & New Year Special Edition



NEW Editorials

Twenty years down the road of Pharmacognosy research



Prof. Clara Bik-San Lau
Secretary-General and BoD member, the GP-TCM RA
Associate Director of the Institute of Chinese Medicine, The Chinese University of Hong Kong (CUHK)
Associate Director of the Partner State Key Laboratory of Phytochemistry and Plant Resources in West China, CUHK
Associate Professor (by courtesy), School of Chinese Medicine, CUHK
Email: claralau@cuhk.edu.hk

With thanksgiving day just passed in late November, and Christmas and new year coming its way, it is certainly a time for giving thanks and counting blessings. 2017 is a meaningful year to Clara as it was exactly 20 years ago that she graduated from Department of Pharmacy, King's College London, University of London with both her BPharm and PhD degrees and started her first lecturing post in Pharmacognosy at University of Bradford, UK. This year, Clara had opportunities to visit University of Illinois at Chicago (UIC), Knight Cancer Institute at Oregon Health & Science University (OHSU) at Portland, National Center for Natural Products Research at University of Mississippi, China Pharmaceutical University in Nanjing, Trinity College Dublin, King's College London and University of Cambridge, etc. Among these visits, she gave seminars on her natural products research and expressed her views on the potential roles of TCM in cancer management and also her thoughts on modernization of TCM. Upon recent invitation by the Editor-in-chief of the GP-TCM RA Newsletter, she is happy to share below some of her perspectives regarding Pharmacognosy and TCM research.



Clara and her PhD supervisor
Dr. Amala Soumyanath

Clara and her research team have been focusing on anti-cancer herbs/natural products for almost 15 years. Four potential targets (namely cytotoxicity, immunomodulation, anti-angiogenesis and anti-metastasis) of Chinese herbal medicines (CHM) in cancer management have been explored using various pre-clinical experimental platforms. Apart from those active compounds isolated from herbs that can be developed as anticancer drugs, extracts (containing a complex array of constituent molecules which exhibit anti-tumor activities) from certain herbs can also be considered as multi-targeted therapy. With the increasing use of CHM in conjunction with chemotherapy and radiotherapy in order to alleviate the adverse effects, as well as to improve their overall efficacy, the importance of the adjuvant role of CHM in cancer therapy should not be undervalued. Clara strongly believes that future anti-cancer research should focus on developing CHM formulae for multi-target therapy approaches to improve prognosis and survival outcomes [1].



Clara gave a seminar at OHSU
(23 Mar 2017)

Being a pharmacognosist, Clara was excited to visit in March the College of Pharmacy at University of Illinois at Chicago which has one of the most prestigious programs in natural products research. During the visit hosted by Prof. Chun-Tao Che, Clara gave a departmental seminar discussing with examples as to how the basic concepts of Pharmacognosy can be applied in CHM research (as summarized in diagram on the right). Nonetheless, the importance of the subject



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Pharmacognosy has been neglected worldwide since 1980's as it was taken out of the pharmacy curriculum in many Schools of Pharmacy. However, the recent Nobel laureate Tu Youyou served as an excellent model for the successful application of Pharmacognosy and hence redressed the importance of this subject. Therefore, training and research in Pharmacognosy should be reinforced and supported by both institutions and industries.

To mark her 20th anniversary of Pharmacognosy research career, Clara returned to King's College London in November and gave a seminar summarizing her research achievements throughout these years. Started with Prof. Peter Houghton on a summer project on propolis and a final year undergraduate project on Mabi bark, Clara had a growing interest in Pharmacognosy research. Immediately after her Pharmacy pre-registration training, she began her PhD study on the phytochemical and anti-diabetic activities of *Momordica charantia* (bitter melon). She commenced her academic career in Pharmacognosy straight after her PhD, with a few turning points along her research path: from western herbs to Chinese herbs, from anti-diabetic research to anti-cancer research, and from herbal extracts to isolated natural compounds. In recent years, she has been exploring the beneficial herb-drug interactions [2-4] and the promising results generated from these pre-clinical studies have led Clara to face the recent new challenges of translational research and to conduct clinical trials on Chinese herbal medicines in the coming years.



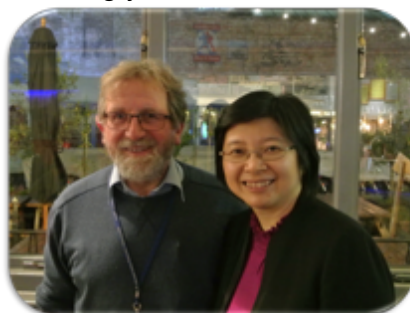
Clara gave a departmental seminar at UIC (31 Mar 2017)



Clara returned to her alma mater, King's College London, and gave a seminar summarizing her 20 years' Pharmacognosy research career (15 Nov 2017)



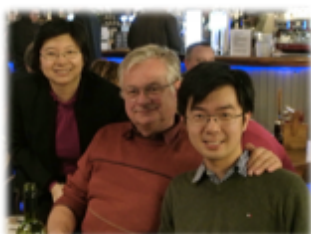
Prof. Peter Hylands



Prof. Peter Houghton



Profs. Monique Simmonds, Christine Leon & colleagues from Royal Botanic Gardens, Kew



Prof. Michael Heinrich & his student



We had a great reunion in London on 15 November 2017! Cheers!



Prof. Nicola Robinson

References:

- [1] Lau CBS, *et al.* (2015). The potential role of Chinese herbal medicines in cancer management. *Science* 347, no. 6219, S45-S47.
- [2] Yue GGL, *et al.* (2016). Combined therapy using bevacizumab and turmeric ethanolic extract (with absorbable curcumin) exhibited beneficial efficacy in colon cancer mice. *Pharmacological Research* 111, 43-57.
- [3] Li L, *et al.* (2017). The adjuvant value of *Andrographis paniculata* in metastatic esophageal cancer treatment – from preclinical perspectives. *Scientific Reports* 7, 854.
- [4] Wat E, *et al.* (2017). The adjuvant value of Herba Cistanches when used in combination with statin in murine models. *Scientific Reports* 7, 9391.

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Special Features

Now 1. The 10th Pong Ding Yuen International Symposium on Traditional Chinese Medicine was held in Hong Kong on December 2-3, 2017. With an outstanding programme under the theme of *Drug Discovery from Chinese Medicines: Strategies for Complicated Diseases*, the symposium was in celebration of its 10th anniversary and was also part of a series of events in celebration of the 130th anniversary of the Li Ka Shing Faculty of Medicine, The University of Hong Kong. The symposium was organized and hosted by the School of Chinese Medicine, of the Faculty and was attended by over 300 academics, healthcare professionals and industrial representatives. The open ceremony was officiated by Dr Tak-Yi CHUI, Under Secretary for Food and Health, HK S.A.R.; Mr Alexander PONG, Representative of Pong Ding Yuen Family; Professor Mai-Har Sham, Associate Vice-President (Research), The University of Hong Kong; Professor Chack-Fan LEE, Chairman, Chinese Medicine Council of Hong Kong; Dr Yibin FENG, Associate Director (Education), School of Chinese Medicine, The University of Hong Kong, Chairperson of the Organizing and Executive Committee of the Symposium, and the delegates and guests from the conference Co-organizers and academic institutes: Professors Yung-Chi CHENG, Chi-Ming CHE, Kwok Fai SO, Thomas EFFERTH, Vivian Taam WONG, Jie WANG, Eric ZIEA, Hongyi HU, Hongxi XU, Jingyan HAN, Zhongzhen ZHAO, Leung Ting HUNG, Taiping FAN, Clara LAU, and Drs Kwun Ming WONG, Edwin Chau Leung YU, Hui FAN, as well as all speakers. A total of 40 top scientists in the world and 10 young investigators (YI) involved in drug discovery and Chinese Medicine were invited to be the speakers at the symposium.



The scientific programme was led by the keynote speech delivered by Prof. Yung-Chi Cheng, Henry Bronson Professor, Yale University, USA, Chairman of Consortium for Globalization of Chinese Medicine and Academician of the Academia Sinica, Taiwan. Professor Cheng spoke on “WE Medicine, an Integration of Western (W) and Eastern (E) Medicine, is Needed for Unmet Health Needs” where he proposed the convergence of principles of “Western Medicine” and “Eastern Medicine” for [Archives \(2008-2017\): www.gp-tcm.org/news-list/](http://www.gp-tcm.org/news-list/)

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developing future WE medicine and discussed its possible challenge. At the second keynote speech, Prof. Kwok Fai SO, Chair of Anatomy and Jessie Ho Professor in Neuroscience, The University of Hong Kong, HKSAR, Director of GHM Institute of CNS Regeneration at Jinan University, China, Member of Chinese Academy of Sciences, PRC discussed his systematic and cutting-edge study on Chinese herbal Medicine Wolfberry for the treatment of Retinitis Pigmentosa. At the third keynote speech, Dr. Yibin Feng discussed the topic “Drug Discovery from Chinese Medicines: From Single Molecule to Multiple Components” based on current review and the results of his research team. As the chairperson of the Organizing and Executive Committee of the Symposium, Dr. Feng also highlighted the scientific program and briefly introduced the topics of all the speakers from Mainland China, Taiwan, Macau, Hong Kong, Korea, Japan, Germany, Australia, United Kingdom, Canada and United states. On the second day, the fourth keynote speech was delivered by Prof. Thomas EFFERTH, Editor-in-Chief of Phytomedicine. He spoke on “Experimental and Clinical Experiences with the Anti-malarial Artesunate in Cancer Therapy” where he discussed the application of the anti-malarial Artesunate on cancer treatment from bench study to clinical study. At the last keynote speech, Prof. Chi-Ming Che, Member of Chinese Academy of Sciences, and Foreign Associate, National Academy of Sciences, USA addressed “the Search for Non-toxic Natural Products from TCM for Cancer Treatment” and shared his experience in drug discovery from Chinese Medicines.



The two-day conference continued with 11 parallel sessions in Herbal Resources and Quality Control, Phytochemistry & Pharmacology, Clinical study, Translational Research, and Products and Registration. All the speakers have generously shared their ideas and experience, which not only helped promote interdisciplinary knowledge exchange but also inspired green researchers in the strive after role models. Some studies showed exciting results for drug discovery and

development from bench to bedside in terms of single pure compound and composite formulae. Besides, over 70 posters were presented in the symposium. In order to encourage innovation and quality scientific contributions from the budding researchers, a YI forum was particularly held and awards for best posters and oral presentations were set up. 3 awards were given to YI with best oral presentation and 6 for the best posters.

The conference concluded with a brief ceremony of presentation of young investigator awards and a farewell note by the chairperson of the Organizing and Executive Committee of the Symposium where he thanked all the speakers and audience for coming the conference, and emphasize the future venue of collaborations between academics and industries in the drug discovery from Chinese Medicine.

To know more about the Symposium, please visit: <http://www.scm.hku.hk/pdy2017/>



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2. Guidelines for Formatting Gene and Protein Names: When possible, to reduce the proliferation of duplicative gene names, always use standard gene names and symbols, which can be found in community databases that are specific to particular organisms (e.g., human: www.genenames.org; rat: rgd.mcw.edu; mouse: www.informatics.jax.org; zebrafish: zfin.org; flies: flybase.org; worms: www.wormbase.org). In general, symbols for genes are italicized (e.g., *IGF1*), whereas symbols for proteins are not italicized (e.g., IGF1). The formatting of symbols for RNA and complementary DNA (cDNA) usually follows the same conventions as those for gene symbols. If many genes are listed together in a table, it is usually up to the authors' (or the journal's) discretion as to whether they should be italicized. Gene names that are written out in full are not italicized (e.g., insulin-like growth factor 1). Genotype designations should be italicized, whereas phenotype designations should not be italicized. Several formatting conventions also depend on the type of organism, and these are discussed in greater detail below.

Although expert readers may be familiar with gene and protein symbols, non-expert readers may not be certain about the particular genes or proteins that are being represented. Therefore, it is good practice to provide the full gene or protein name followed by its symbol in parentheses upon first usage, particularly if your article is to be published in a journal with broad readership.

In addition to the formatting of gene and protein symbols, there are also ways to emphasize the difference between genes and proteins through careful word choices in your writing. For instance, it can be helpful to explicitly state whether you are referring to a gene or protein, particularly within sentences in which both a gene and its product are mentioned (e.g., "We quantified *APOE* gene expression and *APOE* protein levels . . ."). Also, you could selectively use the term "expression" when referring to genes and the term "levels" when referring to RNA or proteins.

Although the general rule that gene symbols are italicized and protein symbols are not italicized holds true regardless of the type of organism, there are several variations among organisms in the composition and capitalization of alphanumeric characters within the gene and protein symbols.

Humans, non-human primates, chickens, and domestic species: Gene symbols contain three to six italicized characters that are all in upper-case (e.g., *AFP*). Gene symbols may be a combination of letters and Arabic numerals (e.g., 1, 2, 3), but should always begin with a letter; they generally do not contain Roman numerals (e.g., I, II, III), Greek letters (e.g., α , β , γ), or punctuation. Protein symbols are identical to their corresponding gene symbols except that they are not italicized (e.g., AFP).

Mice and rats: Gene symbols are italicized, with only the first letter in upper-case (e.g., *Gfap*). Protein symbols are not italicized, and all letters are in upper-case (e.g., GFAP).

<http://www.biosciencewriters.com/Guidelines-for-Formatting-Gene-and-Protein-Names.aspx>

European Reports

1. The Innovative Medicines Initiative (IMI) has launched its 13th call for proposals. The deadline for the stage 1 submission is **28 February 2018 - 17:00 (CET)**. The full list of topics:

- Topic 1: Assessment of the uniqueness of diabetic cardiomyopathy relative to other forms of heart failure using unbiased pheno-mapping approaches
- Topic 2: Genome-Environment Interactions in Inflammatory Skin Disease
- Topic 3: The value of diagnostics to combat antimicrobial resistance by optimising antibiotic use
- Topic 4: Mitochondrial Dysfunction in Neurodegeneration
- Topic 5: Support and coordination action for the projects in the neurodegeneration area of the Innovative Medicines Initiative
- Topic 6: A sustainable European induced pluripotent stem cell platform



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- Topic 7: Linking digital assessment of mobility to clinical endpoints to support regulatory acceptance and clinical practice
- Topic 8: Human tumour microenvironment immunoprofiling
- Topic 9: ConcePTION – Continuum of Evidence from Pregnancy Exposures, Reproductive Toxicology and Breastfeeding to Improve Outcomes Now
- Topic 10: Improving the preclinical prediction of adverse effects of pharmaceuticals on the nervous system
- Topic 11: Translational Safety Biomarker Pipeline (TransBioLine): Enabling development and implementation of novel safety biomarkers in clinical trials and diagnosis of disease
- Topic 12: Pilot programme on a Clinical Compound Bank for Repurposing: Cardiovascular diseases and diabetes
- Topic 13: Pilot programme on a Clinical Compound Bank for Repurposing: Respiratory diseases
- Topic 14: Pilot programme on a Clinical Compound Bank for Repurposing: Neurodegenerative diseases
- Topic 15: Pilot programme on a Clinical Compound Bank for Repurposing: Rare/orphan diseases



Applications should be made through the Participation Portal:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/h2020-jti-imi2-2017-13-two-stage.html>

China Reports


1. China's equivalent to clinicaltrials.gov

https://mp.weixin.qq.com/s/Yy4Ek6cjhfpjyKkx_ebheQ (中文)

<http://www.chinadrugtrials.org.cn/>

2. Amended GMP guidelines in China by Peter Ma, Austar.com.hk

<https://mp.weixin.qq.com/s/CCHf5NeAFhfx0Au-IRDLPQ> (中文)

 3. Li X et al. **The primary health-care system in China.** *Lancet* 2017; 390: 2584–2594. China has made remarkable progress in strengthening its primary health-care system. Nevertheless, the system still faces challenges in structural characteristics, incentives and policies, and quality of care, all of which diminish its preparedness to care for a fifth of the world's population, which is ageing and which has a growing prevalence of chronic non-communicable disease. These challenges include inadequate education and qualifications of its workforce, ageing and turnover of village doctors, fragmented health information technology systems, a paucity of digital data on everyday clinical practice, financial subsidies and incentives that do not encourage cost savings and good performance, insurance policies that hamper the efficiency of care delivery, an insufficient quality measurement and improvement system, and poor performance in the control of risk factors (such as hypertension and diabetes). As China deepens its health-care reform, it has the opportunity to build an integrated, cooperative primary health-care system, generating knowledge from practice that can support improvements, and bolstered by evidence-based performance indicators and incentives.

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)33109-4/fulltext?elsca1=etoc](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)33109-4/fulltext?elsca1=etoc)

 4. Tang K et al. **China's Silk Road and global health.** *Lancet* 2017; 390: 2595–2601. In 2013, China proposed its Belt and Road Initiative to promote trade, infrastructure, and commercial associations with 65 countries in Asia, Africa, and Europe. This initiative contains important health components. Simultaneously, China launched an unprecedented overseas intervention against Ebola virus in west Africa, dispatching 1200 workers, including Chinese military personnel. The overseas development assistance provided by China has been increasing by 25% annually, reaching US\$7 billion in 2013. Development assistance for health from China has particularly

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been used to develop infrastructure and provide medical supplies to Africa and Asia. China's contributions to multilateral organisations are increasing but are unlikely to bridge substantial gaps, if any, vacated by other donors; China is creating its own multilateral funds and banks and challenging the existing global architecture. These new investment vehicles are more aligned with the geography and type of support of the Belt and Road Initiative. Our analysis concludes that China's Belt and Road Initiative, Ebola response, development assistance for health, and new investment funds are complementary and reinforcing, with China shaping a unique global engagement impacting powerfully on the contours of global health.

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)32898-2/fulltext?elsca1=etoc](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)32898-2/fulltext?elsca1=etoc)

5. Hesketh T, Zhou X. Hypertension in China: the gap between policy and practice. *Lancet* 2017; 390: 2529–2530. The high prevalence of hypertension in China is well known, with stroke being the most common cause of death and disability.¹ Two large nationwide studies reported in *The Lancet*^{2,3} highlight that although the prevalence of hypertension in China is similar to that suggested in previous studies, it is simple deficiencies in the country's health system that make a large contribution to the disease burden. Both studies used data from the PEACE (Patient-Centred Evaluative Assessment of Cardiac Events) Million Persons Project (MPP), which enrolled 1.7 million adults aged 35–75 years from across China.

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)32743-5/fulltext?elsca1=etoc](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)32743-5/fulltext?elsca1=etoc)

6. Lu J et al. Prevalence, awareness, treatment, and control of hypertension in China: data from 1.7 million adults in a population-based screening study (China PEACE Million Persons Project). *Lancet* 2017; 390: 2549–2558.

Data interpretation: Among Chinese adults aged 35–75 years, nearly half have hypertension, fewer than a third are being treated, and fewer than one in twelve are in control of their blood pressure. The low number of people in control is ubiquitous in all subgroups of the Chinese population and warrants broad-based, global strategy, such as greater efforts in prevention, as well as better screening and more effective and affordable treatment.

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)32478-9/fulltext?elsca1=etoc](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)32478-9/fulltext?elsca1=etoc)

7. Su M et al. Availability, cost, and prescription patterns of antihypertensive medications in primary health care in China: a nationwide cross-sectional survey. *Lancet* 2017;390:2559–68.

Data interpretation: China has marked deficiencies in the availability, cost, and prescription of antihypertensive medications. High-value medications are not preferentially used. Future efforts to reduce the burden of hypertension, particularly through the work of primary health-care providers, will need to improve access to, and use of, antihypertensive medications, paying particular attention to those with high value.

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)32476-5/fulltext?elsca1=etoc](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)32476-5/fulltext?elsca1=etoc)

8. Qimin Zhan: driving medical research for better health in China. *Lancet* 2017;390:2541. “Clinical medicine+X”—the idea of integrating medicine with other disciplines—is at the heart of Qimin Zhan's vision for better health in China. As President of Peking University Health Science Centre and Vice Chancellor of Peking University, he oversees five medical colleges, ten affiliated hospitals, and 14 teaching hospitals, and is committed to making this health



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system one of the world's leading medical centres. “We want to integrate medicine with disciplines like engineering, bioinformatics, nanotechnology, and big data to speed up the development of medical science”, says Qimin...

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)33090-8/fulltext?elsca1=etoc](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)33090-8/fulltext?elsca1=etoc)

9. China and UK published strategy for scientific technological cooperation and agreed £70 million of business in health sectors. The agreements include:

- UK–China joint declaration on health collaboration
- Memorandum of Understanding between the University of Oxford’s Nuffield Department of Medicine, the China Scholarships Council, and the Chinese Academy of Medical Sciences/Peking Union Medical College
- expansion of collaboration between Nottingham University and Tianjin University of Traditional Chinese Medicine. This includes further joint education and research in addition to their existing joint clinical pharmacy programme
- a deal between International Hospitals Group (IHG) and Hui Ci Health Management Group
- Beijing Huatong Guokang Foundation has completed deals with China UK Medical Exchange Limited and UK Medu Ltd to provide UK healthcare training services to Chinese doctors and hospitals

http://www.most.gov.cn/kjbgz/201712/t20171212_136740.htm?from=groupmessage&isappinstalled=0

(中文)

<https://www.gov.uk/government/news/uk-and-china-agree-70-million-of-business-in-health-sectors?from=groupmessage&isappinstalled=0>

TCM, Acupuncture and Other Traditional Medicine



1. Chinese Materia Medica for Us All, a TV show series by Professor Zhongzhen Zhao, Hong Kong Baptist University, and a free-access Christmas gift on the HKBU website.

https://scm.hkbu.edu.hk/tc/knowledge_transfer/compendium_of_materia_medica_cultural_project_fund/chinese_materia_medica_for_us_all/episodes/

2. TCM is among the flagged topics in *Briefing on Opportunities for UK Collaboration with Chinese Organisations in Horizon 2020*.

The UK Research and Innovation China representative office, in cooperation with UKRO, has prepared a briefing on opportunities for collaboration with Chinese organisations in Horizon 2020.

The document includes information on the recently renewed Chinese Co-Funding Mechanism for Horizon 2020, administered by the Chinese Ministry of Science and Technology (MoST), together with details of the so-called new targeting China (e.g. Food, Agriculture and Biotechnologies Flagship) and other topics where partnering with Chinese organisations will be required.

It is hoped that the document will help UKRO subscribers and sponsors find information about relevant topics in the 2018-2020 Work Programme as well as funding sources in

China (as Chinese organisations are no longer automatically eligible to receive EU funding under the programme), and thus contribute to successful partnership-building between UK and Chinese organisations.

Flagged topics include: Advanced effective, safe and convenient health – Bio-pharmaceuticals, precision medicine, high performance medical devices, prevention and treatment of major infectious

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diseases, antibiotic resistance, regenerative medicine, medical big data, medical robots, aging services technology and **traditional Chinese medicines**.

https://www.ukro.ac.uk/authoring/researcher/Documents/171220_eu_china_partnerships_briefing.pdf

3. Nature News: Chinese medicines: The China Food and Drug Administration has ordered companies to stop using ambiguous, non-scientific, exaggerated or superstitious names for traditional Chinese medicines (TCMs). Instead, the agency encourages names based on literary or cultural references that, by analogy, help to explain the medicine's use. The aim of the policy, announced on 28 November, is to have terms that are scientific and reflect Chinese culture. An example of proper naming would be *Yu Ping Feng San*, which means 'jade shield' and is claimed to shield users from allergies and respiratory-tract infections. The agency will soon publish a list of commercialized TCMs that are in violation of the naming guidelines. Companies will have two years to transition to the new names.

http://www.nature.com/articles/d41586-017-07843-z?WT.ec_id

4. Marchant J. Nature News: Acupuncture in cancer study reignites debate about controversial technique. *Nature* 2017;552:157-8. Oncologists who conducted a trial of real and sham acupuncture in 226 women at 11 cancer centres across the United States say their results — presented on 7 December at the San Antonio Breast Cancer Symposium in Texas — conclude that the treatment significantly reduces pain in women receiving hormone therapy for breast cancer. They suggest it could help patients stick to life-saving cancer treatments, potentially improving survival rates. But sceptics say it is almost impossible to conduct completely rigorous double-blinded trials of acupuncture. For Hershman, the sceptics' concerns risk losing sight of what's best for patients. "To say that something that is pharmacologic is better, when it causes horrible toxicities, is also problematic," she says. With acupuncture, "we tried to do the most rigorous study we could. At the end of the day, if it keeps somebody on their medication or improves the quality of their life, then it's worth it."



<https://www.nature.com/magazine-assets/d41586-017-08309-y/d41586-017-08309-y.pdf>

5. Report on the Scientific Competitiveness of Big-Seller TCM Drugs (2017) published.

<http://www.worldtcm.org/171201/O23416006.shtml?from=groupmessage&isappinstalled=0> (中文)

6. Vasohome, a seven-herb TCM drug 乐脉颗粒, approved as a non-prescription drug in Canada.

<http://mp.weixin.qq.com/s/Qr7jnXDLnuiCywz0mxGS8Q> (中文)

<https://www.youtube.com/watch?v=PEnn7h3PMwI> (中文电视, CCTV)

https://vasohome.com/welcome_e/

7. Xiao S. Genomic research of TCM drug metabolism *in vivo*. *Chinese Journal of Chinese Materia Medica*. 10.4268/cjcmm20162204

http://mp.weixin.qq.com/s/kpRFcSVxS8wGFz03hNm_bg (中文)

8. Ningxian Li: In a scientific perspective, what're the main differences between TCM and conventional medicine? http://mp.weixin.qq.com/s/pLONLw_OHOSbk_3vSJU44w (中文)

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9. David Mainenti. A New Clinical Reasoning Paradigm: State-of-the-art TCM. A First-Year Doctoral Report, Long Island University
https://www.researchgate.net/publication/322007612_A_New_Clinical_Reasoning_Paradigm_State_of_the_Art_TCM

Omics in Progress

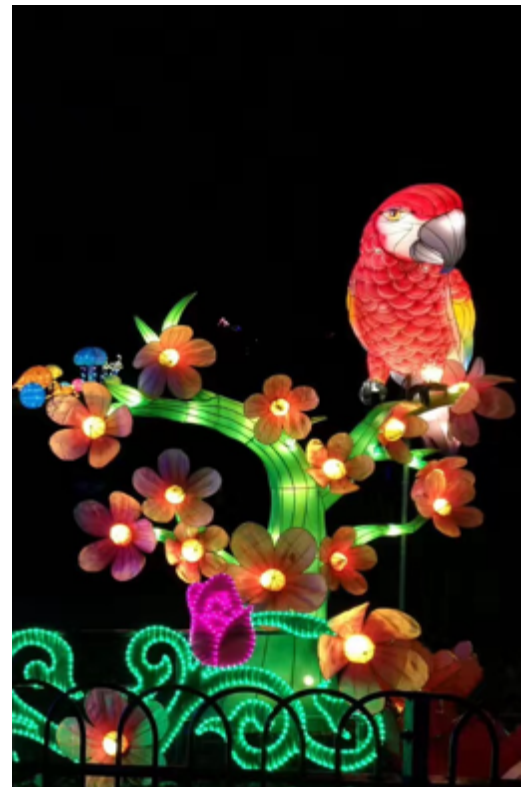
1. Liao H-K et al. In Vivo Target Gene Activation via CRISPR/Cas9-Mediated Trans-epigenetic Modulation. *Cell* 2017; <http://dx.doi.org/10.1016/j.cell.2017.10.025>. Current genome-editing systems generally rely on inducing DNA double-strand breaks (DSBs). This may limit their utility in clinical therapies, as unwanted mutations caused by DSBs can have deleterious effects. CRISPR/Cas9 system has recently been repurposed to enable target gene activation, allowing regulation of endogenous gene expression without creating DSBs. However, *in vivo* implementation of this gain-of-function system has proven difficult. Here, we report a robust system for *in vivo* activation of endogenous target genes through *trans*-epigenetic remodeling. The system relies on recruitment of Cas9 and transcriptional activation complexes to target loci by modified single guide RNAs. As proof-of-concept, we used this technology to treat mouse models of diabetes, muscular dystrophy, and acute kidney disease. Results demonstrate that CRISPR/Cas9-mediated target gene activation can be achieved *in vivo*, leading to measurable phenotypes and amelioration of disease symptoms. This establishes new avenues for developing targeted epigenetic therapies against human diseases.

<https://www.sciencedirect.com/science/article/pii/S0092867417312473>

2. Rutter H et al. The need for a complex systems model of evidence for public health. *Lancet* 2017;390:2602-4. Despite major investment in both research and policy, many pressing contemporary public health challenges remain. To date, the evidence underpinning responses to these challenges has largely been generated by tools and methods that were developed to answer questions about the effectiveness of clinical interventions, and as such are grounded in linear models of cause and effect. Identification, implementation, and evaluation of effective responses to major public health challenges require a wider set of approaches and a focus on complex systems...

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)31267-9/fulltext?elsca1=etoc](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)31267-9/fulltext?elsca1=etoc)

3. Hauser AS, et al. Pharmacogenomics of GPCR Drug Targets. *Cell* 2017; Published Online: December 14, 2017. Publication stage: In Press Corrected Proof. Natural genetic variation in the human genome is a cause of individual differences in responses to medications and is an underappreciated burden on public health. Although 108 G-protein-coupled receptors (GPCRs) are the targets of 475 (~34%) Food and Drug Administration (FDA)-approved drugs and account for a global sales volume of over 180 billion US dollars annually, the prevalence of genetic variation among GPCRs targeted by drugs is unknown. By analyzing data from 68,496 individuals, we find that GPCRs targeted by drugs show genetic variation within functional regions such as drug- and effector-binding sites in the human population. We experimentally show that certain variants of μ -opioid and Cholecystokinin-A receptors could lead to altered or adverse drug response. By analyzing UK National Health Service drug prescription and sales data, we suggest that characterizing GPCR




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variants could increase prescription precision, improving patients' quality of life, and relieve the economic and societal burden due to variable drug responsiveness.

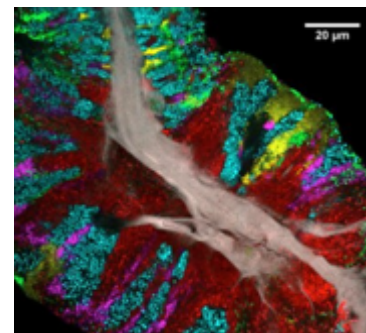
[http://www.cell.com/cell/fulltext/S0092-8674\(17\)31384-3](http://www.cell.com/cell/fulltext/S0092-8674(17)31384-3)


Other Recommended Readings.


 1. Klaeger S, et al. **The target landscape of clinical kinase drugs.** *Science* 2017; 358:eaan4368. Kinase inhibitors are important cancer therapeutics. Polypharmacology is commonly observed, requiring thorough target deconvolution to understand drug mechanism of action. Using chemical proteomics, we analyzed the target spectrum of 243 clinically evaluated kinase drugs. The data revealed previously unknown targets for established drugs, offered a perspective on the “druggable” kinome, highlighted (non)kinase off-targets, and suggested potential therapeutic applications. Integration of phosphoproteomic data refined drug-affected pathways, identified response markers, and strengthened rationale for combination treatments. We exemplify translational value by discovering SIK2 (salt-inducible kinase 2) inhibitors that modulate cytokine production in primary cells, by identifying drugs against the lung cancer survival marker MELK (maternal embryonic leucine zipper kinase), and by repurposing cabozantinib to treat FLT3-ITD-positive acute myeloid leukemia. This resource, available via the ProteomicsDB database, should facilitate basic, clinical, and drug discovery research and aid clinical decision-making.

http://science.sciencemag.org/content/358/6367/eaan4368?utm_campaign


 2. Chakradhar S. **Drugs that made headlines in 2017.** *Nat Med* 2017;23:1392-3. In 2017, cancer drugs once again dominated the news, with many of these medications making headlines for being the first of their kind to gain approval. Beyond cancer, drugs for inflammatory diseases also received attention, for both their successes and their failures. https://www.nature.com/articles/nm1217-1392?WT.ec_id



 3. Bondar T et al. **Notable advances in 2017.** *Nat Med* 2017;23:1388-9. This past year included numerous research studies that broke the mold and elucidated new biology and drug targets. Here are some of the exciting papers from 2017 that moved biomedicine forward. https://www.nature.com/articles/nm1217-1387?WT.ec_id

 4. Grens K. **Microbes of the Human Tongue Form Organized Clusters.** *The Scientist.* December 5, 2017. Bacteria on the tongue's surface reside in clumps distinguished by genus, unlike the intermingled communities observed in other tissues.

Legend of Figure on the right-hand-side: Microbial communities scraped from a human tongue. Each color represents a different genus. Cyan: *Rothia*, Red: *Actinomyces*, Yellow: *Neisseria*, Magenta: *Veillonella*, Green: *Streptococcus*, White: host epithelial material. STEVEN WILBERT, GARY BORISY, FORSYTH INSTITUTE, CAMBRIDGE, MA.

 5. **Notable papers in 2017 as per NEJM Editor-in-chief.** He wrote: “2017 was the year of big data. One study took data from 61 million Americans and looked at the association between air pollution and mortality. The trial found that for every increase of 10 µg per cubic meter in fine particulate matter (PM_{2.5}), there was an associated 7.3% increase in all-cause mortality. These findings stress the need for tighter regulation of air-pollutant levels, and make the point that we still have time to make a difference. Another study analyzed data from 68.5 million people from 195 countries to find the trends in the prevalence of overweight and obesity among children and adults between 1980 and 2015. This study found that the global obesity epidemic is worsening in most parts of the world, but — as with the air pollution study — our future is not immutable.”

<http://www.nejm.org/doi/full/10.1056/NEJMoa1702747>

<http://www.nejm.org/doi/full/10.1056/NEJMoa1614362#t=article>

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6. Worldwide trends in body-mass index, underweight, overweight, and obesity from 1975 to 2016: a pooled analysis of 2416 population-based measurement studies in 128.9 million children, adolescents, and adults. *Lancet* 2017; 390: 2627-2642

Data interpretation: The rising trends in children's and adolescents' BMI have plateaued in many high-income countries, albeit at high levels, but have accelerated in parts of Asia, with trends no longer correlated with those of adults.

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)32129-3/fulltext?elsca1=etoc](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)32129-3/fulltext?elsca1=etoc)

7. Lear SA et al. The effect of physical activity on mortality and cardiovascular disease in 130 000 people from 17 high-income, middle-income, and low-income countries: the PURE study. *Lancet* 2017;390: 2643–2654.

Data interpretation: Higher recreational and non-recreational physical activity was associated with a lower risk of mortality and CVD events in individuals from low-income, middle-income, and high-income countries. Increasing physical activity is a simple, widely applicable, low cost global strategy that could reduce deaths and CVD in middle age.

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)31634-3/fulltext?elsca1=etoc](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)31634-3/fulltext?elsca1=etoc)

8. Woolston C. Top ten tips to kick-start your career in 2018. *Nature* 2017; 552:431-2.

Scientists and career experts reveal how to take your job to the next level. One interviewee advised: “Put yourself first. Don't sacrifice your health and well-being for your career. Especially early in your career, it's easy to say: “I shouldn't do this long-term, but if I work really long hours now, I can make up for it in the future.” That's a very common mindset, but it's dangerous. I know people who had to leave academia after getting tenure because they didn't address their mental-health issues during training. On Twitter, people will say: “Things are pretty bad but I'll deal with it later.” They should deal with it now. That means: keep working hours under control, make time to exercise, spend time with friends and family and generally enjoy life. And if they need professional help, they shouldn't wait.”



https://www.nature.com/articles/d41586-017-08663-x?WT.ec_i

9. Top 10 Retractions of 2017 (The Scientist)

<https://www.the-scientist.com/?articles.view/articleNo/51195/title/Top-10-Retractions-of-2017/&utm>

10. Greene JA, Loscalzo J. Putting the Patient Back Together — Social Medicine, Network Medicine, and the Limits of Reductionism. *N Engl J Med* 2017;377:2493-2499. In the 21st century, the framework of biomedical research and clinical practice has begun to shift away from universal models of disease that generalize from close examination of diseased parts (organs, tissues, cells, or molecules) toward an approach that celebrates “personalized medicine” and focuses, at least nominally, on the whole person as a unit of analysis. Superficially, this transition appears to mark a return to the early modern conception of the patient as “sick person,” whose disease was considered inseparable from his or her complex constitutional inheritance and lived experience. Yet in practice, personalized medicine still tends to reduce the patient to a collection of precise molecular sequences with detailed clinical phenotyping (“precision medicine”). As biomedical research and clinical practice try to assemble these atomized pieces into meaningful wholes, the process of putting the patient back together again has proven to be highly complex...

<http://www.nejm.org/doi/full/10.1056/NEJMms1706744?query=TOC>

11. Nature's 10: Ten people who mattered in this year. These include David Liu, a biologist developed gene-editing tools that are new to nature, and that could one day save lives, and Jianwei Pan, a physicist took quantum communication to space and back... David Liu's groundbreaking work entitled *Treatment of autosomal dominant hearing loss by in vivo delivery of genome editing agents*

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was reported in the latest issue of Nature. In the study, CRISPR–Cas9 genome editing was used to correct a dominant-negative mutation in a mouse model of inherited deafness, resulting in improvements in cochlear function and hearing.

http://www.nature.com/immersive/d41586-017-07763-y/index.html?WT.ec_id

<https://www.nature.com/articles/nature25164>

12. Science's 2017 Breakthroughs of the Year. The first observation of a neutron-star merger, cryo–electron microscopy, gene editing, etc.

<http://vis.sciencemag.org/breakthrough2017/>

<https://mp.weixin.qq.com/s/pO-69O4zWIEdLMb3jT8qJg> (中文)

13. Editorial. So You're Writing a Paper. *Nat Methods* 2017; 14:1115. Writing a clear, accurate and convincing scientific paper is both an art and a skill. It is one well worth mastering... As editors, we read a lot of manuscripts and have spent some time thinking about what makes a good paper. Here we share some observations, whether you're writing your first manuscript or already have a few under your belt.

<https://www.nature.com/articles/nmeth.4532>

Future Meetings & Events

1. The 6th Annual Meeting of the GP-TCM Research Association will be held at Royal Botanic Gardens, Kew, UK on 4-6 July 2018. More details will be announced later.



The 6th Annual Meeting of Good Practice in Traditional Chinese Medicine Research Association First Announcement



2. International celebration of the 500 anniversary of Li Shizhen's birth to be held in Li's hometown Jichun County, Hubei Province, China, on 26th May, 2018.

<http://mp.weixin.qq.com/s?biz=MzAxMjMyMTEwNA==&mid=2660692447&idx=1&sn=3895e03e994d2f1c98befd9f4beb8eca&chksm> (中文)

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3. The 15th World Congress of Chinese Medicine and Belt and Road TCM Culture Week to be held in Rome, Italy, 16-20 November 2018.

http://c.eqxiu.com/s/O8xACe2w?eqrcode=1&share_level=4&from_user=a294a700-73b5-4d95-9d8b-dc428813e7cd&from_id (中文)

Invitation from Journals

1. World Journal of Traditional Chinese Medicine: Season's greetings, publication of the 3rd issue of 2017 and sincere invitation for submissions. WJTCM, ISSN 2311-8571, a peer-reviewed journal (quarterly) launched in 2014, is the official journal of the World Federation of Chinese Medicine Societies (WFCMS) and the GP-TCM RA. **Aim & Scope:** Introduce clinical efficacy and mechanism of TCM to doctors and biomedical researchers around the world, so as to provide new ideas and methods for solving the complicated and difficult cases.

- WJTCM includes reviews and original articles focused on four aspects:
- Modern Research on Chinese Materia Medica: theories of processing, property, and compatibility of Chinese materia medica; safety of Chinese materia medica; active principles and mechanism and efficacy of crude drugs and Chinese compound formulas
- Research on TCM Theory: scientific connotation and biological foundation of TCM basic theories
- TCM clinical Research: disease and syndrome, TCM safety, efficacy evaluation, evidence-based and systematic evaluation
- Acupuncture and Moxibustion: effect mechanism of acupuncture and moxibustion, specificity of acupoint effect, acupoints compatibility, efficacy evaluation of acupuncture and moxibustion.

In 2017, a cooperation agreement on co-publishing WJTCM was signed between the WJTCM Press and Wolters Kluwer Group (WK). The two sides reached consensus on international publication of WJTCM and they promised that they would be jointly endeavored to promote the international dissemination of WJTCM, and make it into the top international academic journal worldwide. The cooperation agreement will greatly standardize the international publication of WJTCM. With the platform of WK Group, the international influence of WJTCM will be greatly enhanced. Up to now, 11 issues have been published. The journal has been indexed by DOAJ, Google Scholar, Wanfang Med online. From the 3rd issue of 2017, WJTCM has been indexed by OVID database.

Submission: Articles can be submitted via ScholarOne: <https://mc03.manuscriptcentral.com/wjtc>, Detailed information about requirements of manuscript and format can be found in "Instruction&Forms" by the above URL, or by accessing WJTCM home page www.wjtc.org.

New articles list for the 3rd issue in 2017

- *The Effects of Different Compatibilities of Qing'e Formula on Scopolamine-induced Learning and Memory Impairment in the Mouse*
- *Traditional Chinese Herbal Medicine for Perimenopausal Depression of Chinese Women: A Meta-analysis*
- *Interactions Between Traditional Chinese Medicine and Anticancer Drugs in Chemotherapy*
- *Xiao Chai Hu Tang for Liver Diseases: A Literature Review*
- *Progress of Studies on Traditional Chinese Medicine Based on Complex Network Analysis*
- *Monoclonal Antibody Usage Strategies for Natural Products in Traditional Chinese Medicine*
- *New Orally Active Artemisinin Dimer Antimalarials*

All WJTCM articles are published online (www.wjtc.org) and are freely available to global readers.



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2. **CALL FOR PAPERS** from *Frontiers in Physiology Vascular Physiology* “Traditional Chinese/Asian Medicine and Cardiovascular/ Complex Disease”. Topic Editors: Professor Jing-Yan Han, Peking University, Beijing, China, and Professor Gerald A Meininger, University of Missouri, Columbia, United States. Submission Deadline: 5th January 2018. Manuscripts can be submitted to the journal directly: <http://journal.frontiersin.org/researchtopic/6490/traditional-chinese-and-asian-medicine-and-cardiovascular-disease>.

Or you can contact Prof. Jing-Yan Han: hanjingyan@bjmu.edu.cn

Sounding Board.

This column is reserved for comments, personal views, proposals for collaborations or any other features from our readers across the world. We look forward to hearing from you! Please get in touch with your editors: Dr Qihe Xu (qihe.xu@kcl.ac.uk), Prof. Pierre Duez (pierre.duez@umons.ac.be) and Prof. Yuan Shiun Chang (yschang0404@gmail.com).

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Concluding Note of the Year

The 26th Dec. 2017 was the 124th anniversary of Chairman Mao Zedong's birth. The coming new year, 2018, will see 60th anniversary of Mao's famous quotation '**Chinese medicine and pharmacology are a great treasure house and efforts should be made to explore them and raise them to a higher level**' (below), which was cited by Professor Tu Youyou at her Nobel Prize Awarding Ceremony in 2015.

Season's Greetings and Happy New Year!

中國醫學
一個偉大的寶庫，
應該努力發掘，加
以提高。
毛澤東