

The January 2017 Newsletter of
The GP-TCM Research Association
THE CHINESE NEW YEAR SPECIAL EDITION



Celebrate the Year of the Rooster - Watch 2017 CCTV Spring Festival Gala in HD

1/4: <https://www.youtube.com/watch?v=7424JE1E6Yw>; 2/4: <https://www.youtube.com/watch?v=zr4LCx7xDF8>;
3/4: https://www.youtube.com/watch?v=yEBy8L5Ts_w; 4/4: <https://www.youtube.com/watch?v=Qbt3sGJwITw>;
<http://www.telegraph.co.uk/news/0/chinese-new-year-2017-year-rooster-zodiac-animal/>

Presidential Editorial

TCM Has Arrived at a New Era

Tai-Ping Fan, President of the GP-TCM RA



25 December 2016 witnessed China's first law on traditional Chinese medicine (TCM) being passed by the top legislature to ensure development of the time-honoured medical art and science and enhance the public's ability to access more quality products and related services. This clearly signals that a new era for TCM has arrived!

Looking back at the beginning of the European Commission Framework 7 Programme Coordination Action "Good Practice in TCM Research in the Post-genomic Era" (GP-TCM, 2009-2012), we have come a long way. I feel an immense sense of pride and privilege to be serving you as President of the GP-TCM RA for 2017 and 2018.

Here I would like to offer my debt of gratitude to our Founding President Prof. Rudi Bauer and 2nd President Prof. De-an Guo for their undivided dedication and immense energy in building our Association to what it is today.

In the Christmas 2015 – New Year 2016 edition of our Newsletter <http://www.gp-tcm.org/wp-content/uploads/2016/02/NL-CHRISTMAS-2015-NEW-YEAR-2016.pdf>, I wrote extensively about my journey in turning adversities to opportunities in TCM. Here I would like to share some of my vision for the coming two years and beyond, as summarized below:

**The January 2017 Newsletter of
The GP-TCM Research Association
THE CHINESE NEW YEAR SPECIAL EDITION**



To improve services to our members

- **Benefits of Membership** We will ensure that the Association will deliver all benefits listed on our website (<http://www.gp-tcm.org/about/membership/>) and will strive to provide more tangible benefits in addition.
- **WeChat Rooms for Interest Group, Newsletters and Website** Interest Groups will play more and more important roles in GP-TCM RA. We will develop interactive means of communications via WeChat Room for each of the 5 Interest Groups. Through this channel, our members can expect to have lively discussions, Q&A sessions on various topics. The proceedings of the discussion will be collated, edited and other features relevant to the ten objectives of the GP-TCM RA (<http://www.gp-tcm.org/about/objectives/>) will be reported in the GP-TCM RA Newsletters, which will remain the official communications channel of the Association. Important consensuses of the Interest Groups, activities of the Board of Directors (BoD) and other important features will be regularly posted on the webpages of the Association, which will continue to serve as our online gateway for members, stakeholders and the public.

To establish closer ties with the CGCM and other sister organisations With the advent of the internet, many academic endeavours appear duplicated, competitive and sometimes counter-productive. However, I strongly believe that we need to forge closer ties with other learned societies to strengthen our overall cause, as promoted by the FP7 GP-TCM consortium (<http://www.sciencedirect.com/science/article/pii/S0378874112001110>). For example, Consortium for Globalization of Chinese Medicine (<http://www.tcmmedicine.org/en/default.asp>) was founded in December 2003 with Professor Tommy Yung-Chi Cheng of Yale University School of Medicine as Chairman. He has been very supportive of the FP7 GP-TCM consortium and our young Association, and we share many visions and objectives. To this end, we have appointed Dr. Clara Lau of The Chinese University of Hong Kong Institute of Chinese Medicine as our new Secretary-General. Through her existing role as Deputy Secretary-General of the CGCM, we can expect better communication and stronger collaboration between our two societies!

To bring on board more industrial partners that share our vision TCM is an integral part of the healthcare and pharmaceutical industry in China and worldwide. It is important that we listen to the needs of this important sector and bring on board their expertise to develop our shared cause together. To this end, I am delighted that we have co-opted Mr Abraham Chan, Chairman of PuraPharm International Ltd. (HK), a BoD member. Abraham is a visionary pioneer and international leader in modernisation of TCM. His membership on the BoD should undoubtedly broaden our horizon and help guide GP-TCM RA to a brighter future.

To engage all the 23 TCM universities and colleges in China As featured in the August-October 2016 edition of our Newsletter, Beijing University of Chinese Medicine led an exciting new development in TCM education and R&D by founding an alliance of all the 23 universities and colleges of Chinese Medicine in China with Xinhuanet and China Association of Chinese Medicine (CACM). The purpose is to further integrate the internet new media platform resources and excellent academic resources to create a TCM-specific communication matrix for better promotion of TCM culture, heritage and development. Thus far, we have 5 universities of TCM (Beijing, Chengdu, Guangzhou, Shanghai and Tianjin) as our corporate members. I intend to lead the BoD to engage the other 18 TCM universities and colleges as our corporate members. If successful, this unprecedented platform will generate a united strong voice to be heard worldwide.

To develop new links with Indian sub-continent and Central and Eastern European countries

Here I use two examples to illustrate these on-going activities:

- Under the auspices of Amrita University, India, I represented the GP-TCM RA and gave a talk “Health and Healing Through Evidence-based Applications of Traditional Medicine” at United Nations Headquarters in New York, in a United Nations Academic Impact (UNAI) conference entitled START, Skills and Technology Accelerating Rapid Transformation in July 2015. http://www.gp-tcm.org/wp-content/uploads/2015/09/nl_june-july_2015.pdf

**The January 2017 Newsletter of
The GP-TCM Research Association
THE CHINESE NEW YEAR SPECIAL EDITION**



- Under the auspices of Czech Ministry of Health and the Parliament Health Committee, I have co-organised a forum “Possible Synergies between Western and Traditional Chinese Medicines” (Prague, 23 February 2017) with Dr. Jan Ruzicka, Special Envoy to the Health Minister Dr. Miloslav Ludvik.

To deliver all these ambitious plans, it takes a team I am delighted that, with Prof. Peter Hylands, our founding Treasurer agreeing to continue to be co-opted a BoD member and appointed Treasurer, our BoD is now in full shape! They are (in alphabetical order):

Five BoD and Executive Council Members:

- Dr. Tai-Ping Fan, Cambridge, President
- Prof. De-an Guo, Shanghai, Past-President
- Prof. Peter Hylands, London, Treasurer
- Dr. Clara Lau, Hong Kong, Secretary-General
- Prof. Aiping Lu, Hong Kong, President-Elect

Eight BoD Members:

- Prof. Rudolf Bauer, Graz
- Mr. Abraham Chan, Hong Kong
- Prof. Pierre Duez, Mons
- Prof. Thomas Efferth, Mainz
- Prof. Monique Simmonds, London
- Prof. Rob Verpoorte, Leiden
- Prof. Vivian Wong, Hong Kong
- Dr. Qihe Xu, London

I am also delighted that Prof. Nicola Robinson (London) has accepted the appointment by the BoD to co-chair the Acupuncture Interest Group (AIG) and Prof. Kelvin Chan will co-chair the Quality Control Interest Group (QCIG). Other Interest Group leaders, Newsletter Editors, Webmasters and other important posts will be filled later and appointments will be announced in due course.

Finally, on behalf of the BoD, may I wish you all a Happy Chinese New Year and a Prosperous Year of the Rooster! I hope that you enjoy reading the news and features on the following pages.

Special Features

China and WHO to build 'healthy' Silk Road. President Xi Jinping visited the WHO and gifted an acupuncture bronze statue (习主席访世界卫生组织，赠送针灸铜人，开拓健康丝绸之路)
<http://www.who.int/features/2017/visit-president-china/zh/?from=groupmessage&isappinstalled=0>
<http://www.unmultimedia.org/avlibrary/asset/1816/1816068/>



**The January 2017 Newsletter of
The GP-TCM Research Association
THE CHINESE NEW YEAR SPECIAL EDITION**



European Reports

Now 1. The European Commission pledged to invest €8.5 billion into research and innovation during 2017, following an update to the Work Programme of Horizon 2020 - the main EU's research and innovation funding programme.

Updated Work Programme introduces important novelties, such as:

- The introduction of open research data in all new Horizon 2020 calls.
- The EU's response to the refugee crisis - € 11 million will be dedicated to new research to understand migration and develop effective policies for managing the influx and integrating migrants in society (research into migration).

European Commission will invest in 50 calls for 2017 in Horizon 2020, structured in the classic three pillars:

- **Science Excellence:**
 - Almost €1.8 billion – corresponding to around 1000 grants - will be available through European Research Council (ERC) calls, and more than 10.000 fellows will benefit from high-quality training and career development opportunities abroad thanks to Marie Skłodowska-Curie actions.
 - €291 million is available to foster new pan- European Research Infrastructures.
- **Industrial Leadership:**
 - A major ICT call (€625 million) will support Europe's position in key areas such as electronics, computing, networking, robotics and photonics. It includes a special Digital Security call (€56 million), which will allow the implementation of the recently signed public-private partnership on cybersecurity.
 - Calls for several contractual PPPs working in areas such as: factories of the future, energy-efficient buildings, sustainable process industries, green vehicles (with €133 million call including around €20 million for the development of a new generation of cells and their integration in competitive batteries), photonics, robotics, high-performance computing, 5G, big data and also cybersecurity.
 - Public-Private Partnerships (PPPs) in fields such as: innovative medicine, fuel cells and hydrogen, electronics, aeronautics, rail transport and bio-based industries.
 - Around €1.45 billion of the total funding in the Work Programme 2017 will go to Small and Medium-sized Enterprises (SMEs), including €438 million through a dedicated instrument which should benefit over 1000 highly innovative SMEs.
- **Societal Challenges:**
 - A call on personalised medicine (€332 million) will boost European industry and the so-called silver economy.
 - The €280 million sustainable food security call will ensure food and nutrition security. €4 million will support the policy development and implementation of the European Commission's FOOD 2030 initiative.
 - The Energy calls in 2017 will dedicate more than €84 million for developing energy storage systems improving the flexibility of the energy grid to integrate an increasing share of renewables.
 - The Mobility for Growth call (€227 million) will strengthen transport's role as the artery of the single market.
 - The new 'Closing the water gap' topic with a budget of €10 million in the 'Greening the economy' call will reduce fragmentation of water research and innovation efforts across Europe and contribute to the implementation of the Sustainable Development Goals (SDGs) as well as the conclusions of the COP21 Paris Agreement on climate change.
 - The €11 million package of migration actions aims to bring together pertinent research communities to map, assemble and synthesise current migration research studies in Europe.
 - The fight against crime and terrorism part of the Security calls, has a budget of €49 million.

**The January 2017 Newsletter of
The GP-TCM Research Association
THE CHINESE NEW YEAR SPECIAL EDITION**



- International cooperation calls and targeted initiatives will help boost research and innovation cooperation with countries outside Europe and effectively tackle common societal challenges.

This also includes support for a range of cross-cutting initiatives in 2017 such as:

- Industry 2020 in the Circular Economy (€325 million) which will contribute to boosting and renewing Europe's industrial capacities while ensuring sustainability;
- Smart and Sustainable Cities (€115 million) to better integrate environmental, transport, energy and digital networks in the EU's urban environments;
- Technologies and standards for automatic driving (over €50 million);
- Internet of Things (€37 million) to foster the take-up of digital technologies in Europe.

If you want to know more, do not hesitate to consult the Zabala OPEN CALLS CALENDAR 2017 - http://www.zabala.es/newsletters/docs/ZABALA_HORIZONTE2020_fechasdecierre_2016-2017_EN.pdf

2. The European Commission has published scoping papers for the Horizon 2020 work programmes 2018-2020. These papers outline the main priorities over the next three years for each part of Horizon 2020 and will form the basis for the development of the work programmes. 17 thematic scoping papers and one overarching document have been published. The scoping papers are working documents not formally endorsed by the Commission, the adoption and publication of the 2018-2020 work programme is expected in October 2017.

<https://ec.europa.eu/programmes/horizon2020/en/what-work-programme#Article>

3. Cressey D. Brexit by the numbers: the fear of brain drain. doi:10.1038/nature.2016.21142

- Evidence to parliamentary inquiry puts some figures on the uncertainty hanging over EU university staff.
- On average, some 16% of university researchers are from non-UK EU states. If these EU nationals were to leave, basic science research would be hit harder than other disciplines. Statistics sent to the parliamentary inquiry by the UK Department for Education show that 23% of academic staff in biology, mathematics and physics are EU nationals.
- Scotland could be particularly at risk from staff problems. Its universities employ 4,595 EU nationals, who make up 17% of academic staff, and an even higher proportion (almost 25%) of research-only staff, according to Universities Scotland.

<http://www.nature.com/news/brexit-by-the-numbers-the-fear-of-brain-drain-1.21142>

4. Mike Galsworthy, Martin McKee. A plan for U.K. science after the European Union referendum. *Science* 6 Jan 2017: Vol. 355, Issue 6320, pp. 31-32. "The 2016 vote to leave the European Union (EU) shocked British scientists. The European Union enjoys strong support from researchers across United Kingdom academia and industry, with 17% of all U.K. university science contracts now funded by the European Union, accounting for 73% of the growth in U.K. university science budgets in recent years (1). These EU funds support high-value multinational collaborations. Free movement of researchers within the European Union ensures flow of talent to where it is most needed and helps early career researchers acquire scarce skills. U.K. scientists have enjoyed access to EU research infrastructure and strong influence on shared regulatory systems. Facing potential exclusion from a global science powerhouse that it has done so much to shape, how should the United Kingdom disentangle itself from this 40-year old collaboration? We propose an eight-point plan to limit the immediate damage and to put U.K. science on the front foot in the wake of the Brexit vote..." The first and corresponding author is employee of *Scientists for EU*, an organisation based in London. <http://science.sciencemag.org/content/355/6320/31.full>

China and EU-China Cooperation Reports

1. Tu Youyou received China's Top Science Award from President Xi Jinping at a grand ceremony to honour distinguished scientists and research achievements in Beijing on 9th Jan. 2017.

<http://www.globaltimes.cn/content/1027971.shtml>

**The January 2017 Newsletter of
The GP-TCM Research Association
THE CHINESE NEW YEAR SPECIAL EDITION**



http://mp.weixin.qq.com/s?__biz=MjM5ODU5NDgyMg==&mid=2653932752&idx=2&sn=63b65b5ea2344f49f7a912f4f62d1f5e&chksm (中文)

2. TCM-related awards in National S&T Advances Awards 2016: One top award on discovery of artemisinin (Prof. Youyou Tu), one First Prize on integrative Chinese medicine diagnosis and treatment of IgA nephropathy (Prof. Xiangmei Chen, et al), and four Second Prizes on international quality control of Chinese materia medica (De-an Guo et al), DAN barcoding for authentication of Chinese herbs (Shilin Chen, et al), TCM treatment of diabetic nephropathy (Ping Li, et al), and TCM treatment of lung cancer (Hongsheng Lin, et al).

http://mp.weixin.qq.com/s?__biz=MjM5OTU5ODQ5Mw==&mid=2650512436&idx=1&sn=03d88406ef48bacd9c60ebb50c6149d1&chksm=bf363cc68841b5d0ff4da58472b5c7fbbbbb04038656214b6628074cc1083a2753da699b52d&mpshare=1&scene=5&srcid=0110ot0ZUvmcljAcX0CNzLCi#rd (中文)

Second Prize on international quality control of Chinese materia medica (De-an Guo et al)

http://www.simm.cas.cn/xwzx/zhxw/201701/t20170109_4732952.html (中文)

Second Prize on TCM treatment of diabetic nephropathy (Ping Li et al)

<http://app.medtrib.cn/media/phone/post/app/48046/90705a53-7a10-402e-b8f8-16d9f313db78.html?from=groupmessage&isappinstalled=0> (中文)

3. Xiao-RP, et al. Making An Impact on Clinical Practice and Research in China. *N Engl J Med* 2016; 375:2391-2392 (This editorial was online published on November 21, 2016, at NEJM.org). Two weeks ago, NEJM Group launched a collaboration with Jiahui Medical Research and Education (JMRE) of Shanghai: NEJM 医学前沿 (Yi Xue Qian Yan), or NEJM Frontiers in Medicine. This online medical resource, now available at www.nejmqianyan.cn and by mobile app, provides an archive of key *New England Journal of Medicine* and *NEJM Journal Watch* articles fully translated into Chinese, with new articles being added each week. Many of the new *Journal* articles will appear with original commentary from China-based experts.

China has made substantial advances in medical research and patient care in recent decades, but its expanding economy, changes in lifestyle, and rapidly aging population have resulted in a growing burden of non-communicable diseases, including cardiovascular disease and stroke, diabetes, and cancer. Scientific publications such as the *Journal* that contain material of value to Chinese health professionals will best serve that population if the content is easily accessible and delivered in their mother tongue. NEJM 医学前沿 will bring Chinese translations of high-quality medical and scientific content from the *Journal* and from *NEJM Journal Watch* to Chinese medical practitioners, researchers, and educators. Our aim is to improve clinical practice and to strengthen the links between China and the international medical community.

At launch, NEJM 医学前沿 contains over 150 *Journal* articles and over 100 articles from *NEJM Journal Watch* published within the past 5 years, with a focus on cancer, cardiovascular disease, and diabetes, together with about 20 commentaries by Chinese physician-scientists. NEJM 医学前沿 now begins weekly publication of new articles from the *Journal* and from *NEJM Journal Watch*, translated into Chinese and focusing on these three major areas, with the intention of gradually broadening its focus to cover a wider range of medical conditions. Each week, the *Journal's* entire table of contents will be translated, with links to the full articles at NEJM.org. A simple, secure, and no-cost registration is needed for access to NEJM 医学前沿. Links to translated *Journal* articles at NEJMqianyan.cn will also be provided at NEJM.org. We believe that Chinese health professionals will find the content useful as we pursue our common goal: to improve the health of people everywhere through reliable medical information.

4. Precision medicine in China. *Science* 23 Dec 2016:Vol. 354, Issue 6319, pp. 1601. DOI: 10.1126/science.354.6319.1601-b Boiled down to its essence, precision medicine describes the ability to tailor therapies to a patient's individual needs by examining their particular physiology, genome, and environment. The ideal is that individualized treatment will lead to lower costs, fewer side effects, and better outcomes. Precision medicine in China, if not in its infancy, is still a long way from reaching maturity. However, it shows significant promise. The country provides unique

**The January 2017 Newsletter of
The GP-TCM Research Association
THE CHINESE NEW YEAR SPECIAL EDITION**



opportunities for research, including a varied geography and a large population presenting with many different diseases, both common and rare. Furthermore, the government is clearly a strong proponent of precision medicine, supporting it financially through numerous initiatives and also through policy changes at a national level. This supplement takes a deeper look at precision medicine in China, including associated research undertakings and how it is currently being applied in the diagnosis and treatment of disease, with a particular focus on cancer. There is little doubt that China intends to be a leader in this area, investing both money and resources. Should this venture pay off, the country will be well placed to provide top-quality health care for its populace and even to provide advice to other nations with less-advanced health care systems.

<http://science.sciencemag.org/content/354/6319/1601.2.summary>

http://mp.weixin.qq.com/s?__biz=MzA5NTYzMzAyNQ==&mid=2650175616&idx=1&sn=6a9d280c00f157126710a49cde7e2af8&chksm=88beb36ebfc93a78fb5959ed2d023cd88a608a04e9a5a8de974f7f65e64909a0236e6fdc638f&mpshare=1&scene=5&srcid=0111HpUGnKH48OLpg6rNzbYi#rd (中文)

5. Aim high: UK and China signed an MOU agreeing to jointly develop a strategy for future UK China science and innovation collaboration, which will identify key areas, new models and funding mechanisms for collaboration. <http://blogs.fco.gov.uk/hollywhite/2016/12/15/developing-the-first-uk-china-joint-strategy-on-science-and-innovation/>



6. Bridges to the Future: The role of universities in the UK-China relationship: A CBI report.

http://www.cbi.org.uk/index.cfm/_api/render/file/?method=inline&fileID=BBC0D1C0-84C7-43F6-89A72E3C3D46D2B0

7. Chengdu Declaration of International Science and Technology Cooperation on Traditional Chinese Medicine (October 24, 2016) (中文 and English)

http://mp.weixin.qq.com/s?__biz=MzIzMzExNzEwNQ==&mid=2650135337&idx=2&sn=398a4a85ed9912001f3eed786f4d5cc2&chksm

8. EU to set up research and innovation center in Beijing. The European Commission will invest €3million to set up a research and innovation center in China as part of its efforts to deepen EU-China scientific and technological cooperation.

The European Research and Innovation Center of Excellence is the first EC-funded center in China that focuses on research and development. It will be headquartered in Beijing, and have networks in other cities on the mainland.

Its services will range from organizing events to increasing exchanges between Chinese and European researchers, to producing reports about the situation in China on scientific and technological innovation.

It will also help private companies from European Union countries do research and seek development in China and find Chinese partners.

**The January 2017 Newsletter of
The GP-TCM Research Association
THE CHINESE NEW YEAR SPECIAL EDITION**



The project will start working from January 2017 and is expected to come into full operation as early as 2019.

"The aim is to establish a center here in China that can help European researchers on the first step toward the Chinese market, help them contact with Chinese companies and, at the same time, enable Chinese researchers to interact better with the European side," said Sara Medina, member of the board of SPI, a Portugal-based consulting firm which focuses on promoting EU-China scientific and technological cooperation.

http://europe.chinadaily.com.cn/business/2016-11/19/content_27428542.htm

9. In a sign of improving cooperation between the U.S. and China to fight the global drug trade, the Drug Enforcement Administration will open a new office in Guangzhou.

http://www.dddmag.com/news/2017/01/dea-opens-shop-china-help-fight-synthetic-drug-trade?et_cid=5769818&et_rid=45532557&type=cta&et_cid=5769818&et_rid=45532557&linkid=content

10. The Lancet. What to expect for China's health in the future. *Lancet*. 2017;389:226. 2017 will be a crucial year for the future direction of health care in China, not only because of the upcoming reshuffle of the top Chinese leadership—the Politburo Standing Committee—but also because of the [13th 5-year plan on health care](#) (2016–20), which was officially issued by China's State Council on Jan 10. The plan represents the political health manifesto of the Communist Party...
[http://dx.doi.org/10.1016/S0140-6736\(17\)30134-4](http://dx.doi.org/10.1016/S0140-6736(17)30134-4)

Omics in Progress

1. Pawluk A, et al. Naturally Occurring Off-Switches for CRISPR-Cas9. *Cell* 2016;167:1829–1838. CRISPR-Cas9 technology would be enhanced by the ability to inhibit Cas9 function spatially, temporally, or conditionally. Previously, we discovered small proteins encoded by bacteriophages that inhibit the CRISPR-Cas systems of their host bacteria. These “anti-CRISPRs” were specific to type I CRISPR-Cas systems that do not employ the Cas9 protein. We posited that nature would also yield Cas9 inhibitors in response to the evolutionary arms race between bacteriophages and their hosts. Here, we report the discovery of three distinct families of anti-CRISPRs that specifically inhibit the CRISPR-Cas9 system of *Neisseria meningitidis*. We show that these proteins bind directly to *N. meningitidis* Cas9 (NmeCas9) and can be used as potent inhibitors of genome editing by this system in human cells. These anti-CRISPR proteins now enable “off-switches” for CRISPR-Cas9 activity and provide a genetically encodable means to inhibit CRISPR-Cas9 genome editing in eukaryotes. [http://www.cell.com/cell/fulltext/S0092-8674\(16\)31589-6?elsca1](http://www.cell.com/cell/fulltext/S0092-8674(16)31589-6?elsca1)

A commentary on this important milestone paper can be found in *The Scientist*:

http://www.the-scientist.com/?articles.view/articleNo/47762/title/Keeping-CRISPR-in-Check/&utm_source

2. Ledford H. Beyond CRISPR: A guide to the many other ways to edit a genome. *Nature* 2016;536:136–137. The popular technique has limitations that have sparked searches for alternatives. Some useful progresses are: Cas9 alternatives mini-Cas9, Cpf1, C2c2 and a disabled Cas9 and tethered to it an enzyme that converts one DNA letter to another. Although NgAgo has proven controversial, “there is still hope that proteins from the family that NgAgo belongs to — known as Ago or Argonautes — made by other bacteria could provide a way forward. Other gene-editing systems are also in the pipeline,...

http://www.nature.com/news/beyond-crispr-a-guide-to-the-many-other-ways-to-edit-a-genome-1.20388?WT.ec_id

3. Ledford H. Five big mysteries about CRISPR's origins. *Nature* 2017;541:280–282. Where did it come from? How do organisms use it without self-destructing? And what else can it do?

http://www.nature.com/news/five-big-mysteries-about-crispr-s-origins-1.21294?WT.ec_id

4. Parker CG, et al. Ligand and Target Discovery by Fragment-Based Screening in Human Cells. *Cell* 2017;168:1-15. A chemical proteomic strategy for mapping fragment-protein interactions in

**The January 2017 Newsletter of
The GP-TCM Research Association
THE CHINESE NEW YEAR SPECIAL EDITION**



cells is described. This could become the basis for studying the molecular targets of TCM-derived small molecules. [http://www.cell.com/cell/fulltext/S0092-8674\(16\)31745-7](http://www.cell.com/cell/fulltext/S0092-8674(16)31745-7)

5. Ovchinnikov S, et al. Protein structure determination using metagenome sequence data. Science 2017; 355: 294-298. Despite decades of work by structural biologists, there are still ~5200 protein families with unknown structure outside the range of comparative modeling. We show that Rosetta structure prediction guided by residue-residue contacts inferred from evolutionary information can accurately model proteins that belong to large families and that metagenome sequence data more than triple the number of protein families with sufficient sequences for accurate modeling. We then integrate metagenome data, contact-based structure matching, and Rosetta structure calculations to generate models for 614 protein families with currently unknown structures; 206 are membrane proteins and 137 have folds not represented in the Protein Data Bank. This approach provides the representative models for large protein families originally envisioned as the goal of the Protein Structure Initiative at a fraction of the cost.

寻找宏基因组序列结构:

http://mp.weixin.qq.com/s?__biz=MjM5NzE4MDMwMA==&mid=2651907622&idx=3&sn=d03b2b811fe4020ba08689b4f77f3fc7&chksm (中文)

TCM-related Research and Updates

1. On Dec 6 2016 China's State Council Information Office issued a white paper on the development of traditional Chinese medicine (TCM) in China. Entitled *TCM in China*, the document includes 5 parts: (i) Preface; (ii) The Historical Development of TCM II. Policies and Measures on TCM Development; (iii) Carrying Forward the Tradition and Ensuring the Development of TCM; (iv) International Exchanges and Cooperation in TCM; and (v) Conclusion. The full text of the document can be found below.

http://english.gov.cn/archive/white_paper/2016/12/06/content_281475509333700.htm

It has been reported by *China Daily*:

http://www.chinadailyasia.com/nation/2016-12/06/content_15537428.html

Its Chinese version 《中国的中医药》白皮 can be found here:

http://news.xinhuanet.com/politics/2016-12/06/c_1120064848.htm (中文)

2. To 10 TCM news (2016 年中医药十大新闻揭晓) On 9th Jan. 2017, the Top-10 TCM News 2016 were published by the Publicity Office of SATCM and China Chinese Medicine Press.

1月9日, 国家中医药管理局新闻办公室和中国中医药报社共同揭晓2016年中医药十大新闻。

<https://www.bing.com/search?q=Tk5NDY2Nw==%26mid=2247484049%26idx=2%26sn=2cd921e50c3ec54b65010ff1707e5450%26chksm=9ad07855ada7f143e245480811fe3b00b99a2e439b04e21577b90df234719d1a9ec59af53bb5%26mpshare=1%26scene=5%26srcid=01094UK7USjJdr7ZydAelkv%23rd&form=APMCS1&PC=APMC>

3. Citing research findings in two *New Engl J Med.* papers and an *Arch Intern Med.* paper, NIH comment on the health benefits of Tai-Chi:

<https://newsinhealth.nih.gov/issue/dec2016/feature2>

A WeChat report on this can be found here:

http://mp.weixin.qq.com/s?__biz=MzAxMjc1Nzc0NQ==&mid=2650568261&idx=1&sn=eb67fd6533ca53bf06297a03c0358c74&chksm=83a429dbb4d3a0cd48af848e332024fc4a37ff06fe18ad33bc8f84c999117acec78f27f05df1&mpshare=1&scene=5&srcid=1207fKmCrMQaW6vOVaMT6HrP#rd (中文)

4. A WeChat report on the seven ISO international standards (7 项 ISO 中医药国际标准简介):

http://mp.weixin.qq.com/s?__biz=MzAwMTk5NDY2Nw==&mid=2247483961&idx=1&sn=0c4f77103299202e363e6b2937343387&chksm=9ad078fada7f1eb1529fc7b0a07c201e19361c48ad1b616449c44e50f0dba07a9c2ad0d20e6&mpshare=1&scene=5&srcid=1204OIFf15IZbdFp3xVxQbIQ#rd (中文)

**The January 2017 Newsletter of
The GP-TCM Research Association
THE CHINESE NEW YEAR SPECIAL EDITION**



5. A WeChat report on recent progress on WHO classification of diseases in traditional medicine (WHO 传统医学国际疾病分类项目进展简介): http://mp.weixin.qq.com/s?__biz=MzAwMTk5NDY2Nw==&mid=2247483959&idx=1&sn=c5aa959bf30964dffe9fc8c59795ba91&chksm=9ad078f3ada7f1e5e0ff4b2f6b7b3eccc0e4e4882dc09e0780c2f6b8c9b08ea697fa833dbb7&mpshare=1&scene=5&srcid=1204QjcRcLKtbQO7ZOL4ceXM#rd (中文)

6. Baker M. Deceptive curcumin offers cautionary tale for chemists. *Nature* 2017;541:144-5 (姜黄素, 一种欺骗了大量研究者的化学“骗子”): http://www.nature.com/polopoly_fs/1.21269!/menu/main/topColumns/topLeftColumn/pdf/541144a.pdf http://mp.weixin.qq.com/s?__biz=MzAwNTAyMDY0MQ==&mid=2652545029&idx=1&sn=8e0014068c00aab3787fe3fb42c3da0&chksm=80cd (中文)

It's a comment on a mini-review published in *J Med Chem* by Nelsom KM et al. The abstract of this paper is as follows: “Curcumin is a constituent (up to ~5%) of the traditional medicine known as turmeric. Interest in the therapeutic use of turmeric and the relative ease of isolation of curcuminoids has led to their extensive investigation. Curcumin has recently been classified as both a PAINS (pan-assay interference compounds) and an IMPS (invalid metabolic panaceas) candidate. The likely false activity of curcumin in vitro and in vivo has resulted in >120 clinical trials of curcuminoids against several diseases. No double-blinded, placebo controlled clinical trial of curcumin has been successful. This manuscript reviews the essential medicinal chemistry of curcumin and provides evidence that curcumin is an unstable, reactive, nonbioavailable compound and, therefore, a highly improbable lead. On the basis of this in-depth evaluation, potential new directions for research on curcuminoids are discussed.” <http://pubs.acs.org/doi/full/10.1021/acs.jmedchem.6b00975>

7. Li J, et al. Artemisinins Target GABAA Receptor Signaling and Impair α Cell Identity. *Cell*. Published Online: December 01, 2016. [http://www.cell.com/cell/fulltext/S0092-8674\(16\)31531-8](http://www.cell.com/cell/fulltext/S0092-8674(16)31531-8) Type 1 diabetes is characterized by the destruction of pancreatic β cells, and generating new insulin-producing cells from other cell types is a major aim of regenerative medicine. One promising approach is transdifferentiation of developmentally related pancreatic cell types, including glucagon-producing α cells. In a genetic model, loss of the master regulatory transcription factor Arx is sufficient to induce the conversion of α cells to functional β -like cells. Here, we identify artemisinins as small molecules that functionally repress Arx by causing its translocation to the cytoplasm. We show that the protein gephyrin is the mammalian target of these antimalarial drugs and that the mechanism of action of these molecules depends on the enhancement of GABAA receptor signaling. Our results in zebrafish, rodents, and primary human pancreatic islets identify gephyrin as a druggable target for the regeneration of pancreatic β cell mass from α cells.

A WeChat report can be found: <http://mp.weixin.qq.com/s/HW5E42FhxPdMER8r8SNruQ> (中文)

8. Interesting: combinations of anticancer drugs and TCM. “...drugs can be combined in endless ways. Add in treatments such as the herbs and acupuncture of traditional Chinese medicine, and the number of arrangements increases further. How do all of these things work together? Could they work together better? Does this improvement change for different patients?”

http://www.dddmag.com/news/2017/01/problem-and-potential-solution-combining-drugs?et_cid=5777147&et_rid=45532557&type=headline&et_cid=5777147&et_rid=45532557&linkid=content

Other Recommended Readings

1. Science Breakthroughs 2016: Each year, *Science* selects a scientific discovery or advance as the Breakthrough of the Year. The choice for 2016 is the detection of gravitational waves—ripples in spacetime—caused by the collision of two black holes 1.3 billion years ago. Gravitational waves were first predicted by Albert Einstein 100 years ago; their detection by massive, exquisitely sensitive instruments in Louisiana and Washington states caps a 40-year quest to observe the infinitesimal

**The January 2017 Newsletter of
The GP-TCM Research Association
THE CHINESE NEW YEAR SPECIAL EDITION**



signals. Scientists see the breakthrough as the birth of a new field: gravitational wave astronomy. *Science* also invited readers to vote online on candidates for the Breakthrough of the Year. Their choice: an advance that enabled researchers to keep human embryos developing in culture for almost 2 weeks. <http://science.sciencemag.org/content/354/6319/1516>
http://mp.weixin.qq.com/s?__biz=MjM5NzE4MDMwMA==&mid=2651907257&idx=1&sn=3450cba49f0879091ed9209435db6043&chksm (中文)

2. The Scientist Top 10 Innovations 2016: (1) ProteinSimple Milo: Single-cell Western blotting is now available for purchase; (2) Organovo ExVive Human Kidney Tissue, a replica of the kidney proximal tube created using 3-D bioprinting, offers drug developers a reliable means of testing for renal toxicity; (3) Pacific Biosciences PacBio sequencer; (4) Axion BioSystems makes in vitro optogenetics more precise and more replicable than ever, thanks to its new Lumos light-delivery system; (5) Thermo Fisher ScieLentiArray CRISPR Libraries; (6) NanoString Technologies nCounter Vantage 3D Panels; (7) 908 Devices ZipChip; (8) Horizon Discovery Turbo GFP Tagged HAP1 Cells; (9) Photometrics Prime sCMOS Camera; (10) Thermo Fisher Scientific GeneArt Platinum Cas9 Nuclease.

http://www.the-scientist.com/?articles.view/articleNo/47537/title/Top-10-Innovations-2016/&utm_campaign

3. The Scientist Top 5 Technical Advances 2016: The year's most impressive achievements include methods to watch translation in cells, trace cell fates, avoid mitochondrial mutations, edit DNA, and build antibiotics from scratch.

<http://www.the-scientist.com/?articles.view/articleNo/47789/title/Top-Technical-Advances-2016/>

2016 年最令人印象深刻的成就包括观察细胞中的基因表达、追踪细胞命运、避免线粒体突变、编辑 DNA 和从头构建抗生素的方法。<http://mp.weixin.qq.com/s/Ep9M9-MTA70n4YTI4yS7sA> (中文)

4. Nature Medicine Notable Advances 2016: This past year saw breakthroughs in areas ranging from gene editing to eye-tissue repair. Here are a few of the research papers that reported some of the exciting discoveries of 2016.

http://www.nature.com/nm/journal/v22/n12/full/nm1216-1374.html?WT.ec_id

近日，Nature Medicine 盘点了 2016 年生命科学七大领域（基因治疗、免疫疗法、传染病、癌症、再生医学、自身免疫疾病、神经生物学）的 8 大突破性进展：

<http://mp.weixin.qq.com/s/bB9m7pBWFkJunYbOLMRsg> (中文)

5. Nature Medicine Drugs That Made Headlines in 2016: Gene therapies featured prominently among this year's newsworthy drugs, some of which have already received a green light from regulatory agencies for sale or are otherwise surging forward in trials. Other drugs ended the year with a much less rosy efficacy or safety profile.

http://www.nature.com/nm/journal/v22/n12/full/nm1216-1377.html?WT.ec_id

6. Nature Ten people who mattered in 2016: *Nature* profiles ten people who mattered in science this year: from Gabriela Gonzalez, who helped catch the first direct signs of gravitational waves, to AI developer Demis Hassabis, who won a major victory in Go.

<http://www.nature.com/news/nature-s-10-1.21157>

http://mp.weixin.qq.com/s?__biz=MzA3OTgzMzUzOA==&mid=2651226863&idx=2&sn=5030558c3d054f11dd9625edade2efcb&chksm (中文)

7. Nature and Cell “breakthrough” publications selected by BIONNEWS (生物谷年终盘点: 2016 年 Nature and Cell 重磅级突破性研究成果)

Nature: http://mp.weixin.qq.com/s?__biz=MjM5OTAwMzI4MA==&mid=2651450759&idx=1&sn=40866b6eec5796048a5deaec7cd241ae&chksm (中文)

Cell: http://mp.weixin.qq.com/s?__biz=MjM5OTAwMzI4MA==&mid=2651450752&idx=1&sn=deee1c3b697b912064435fbcec956b94&chksm (中文)

The January 2017 Newsletter of
The GP-TCM Research Association
THE CHINESE NEW YEAR SPECIAL EDITION



Future Meetings

Now 1. The 10th International workshop Metabolomics Basics and Applications to Plant Sciences, Leiden, the Netherlands, May 1-5, 2017 www.plantsandmetabolomics.nl

10th International Workshop Metabolomics

Basics and Applications to Plant Sciences

Date:

1.-5. May, 2017

Place:

Leiden, The Netherlands

Pieters Kerkhof 6
Gravensteen building

Costs:

€ 850

Costs includes course material (on USB), tea/coffee, lunches and farewell dinner

Registration deadline:

April 28th, 2017

More information:

www.plantsandmetabolomics.nl
plantsandmetabolomics@gmail.com

Topics:

- Primary and secondary metabolism in plants
- Analytical techniques: chromatography, MS, NMR
- Basics of data analysis
- Applications in plant sciences

Metabolomics is an important tool in Life Sciences. It enables among others studies on plant – environment interactions and the activity of medicinal plants. The Institute of Biology Leiden University (IBL) organises the workshop. It is particularly of interest to researchers having experience with isolation and identification of plant compounds, but who do not use metabolomics yet.

Lectures by:

Y.H. Choi, R. van der Heijden, J. Jansen, H.K. Kim, J. Kopka, S. Kostidis, S. Rudaz, B. Schneider, J. Schripsema, R. Verpoorte, J.-L. Wolfender, E. Wilson, A. Viljoen, F. Mesnard, S. Osorio-Algar, T. Hankemeier, G. van Wezel, D. Overy, M. Bezemer, M. Giera, W. Allwood, B. Teusink, H. van Mil, T. Do,



Now 2. The 16th Meeting of Consortium for Globalization of Chinese Medicine (CGCM) will be held in Guangzhou on August 18 - 20, 2017 (Friday-Sunday). This year's meeting is going to be organized by Guangdong Provincial Hospital of Chinese Medicine. The meeting provide a platform for regulatory-industrial-academic exchanges and potential research collaborations, on various frontiers of Traditional Chinese Medicine among our worldwide CGCM members and guests. You are cordially invited to attend the meetings and submit abstracts. Preliminary programme and more details will soon be announced on the CGCM website www.tcmmedicine.org. Should you have any enquiries, please feel free to contact: centraloffice@tcmmedicine.org

Now 3. *The Lancet*–CAMS Health Summit 2017: a *Lancet* call for abstracts from China. Abstracts are invited from China for *The Lancet*–CAMS Health Summit 2017, to be held on Oct 13–14 2017 in Beijing. Submissions are invited from all aspects of health science including, but not limited to:

**The January 2017 Newsletter of
The GP-TCM Research Association
THE CHINESE NEW YEAR SPECIAL EDITION**



translational medicine, clinical medicine, public health, global health, health policy, the environment and ecological systems and health, health professionalism, and medical education.

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)30130-7/fulltext?elsca1=etoc](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)30130-7/fulltext?elsca1=etoc)

Invitation from Journals

1. **Invitation from, and publication of the four issue of, *World Journal of Traditional Chinese Medicine* (WJTCM).** WJTCM, ISSN 2311-8571, a new 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.

Submission to the Journal: All the articles can be submitted via ScholarOne: <https://mc03.manuscriptcentral.com/wjtcn>, 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.wjtcn.org. All WJTCM articles will be published online via WJTCM website (www.wjtcn.org). PDF articles and electronic/online versions are freely available to global readers.

WJTCM has successfully published 8 issues since 2015. Full-text PDF articles and electronic/online versions are freely available to global readers: www.wjtcn.org

The latest issue, i.e. the fourth issue, volume 2, can be found here: <http://www.wjtcn.org:8080/ch/index.aspx>

Main Articles of Issue 4:

- 1) Zheng-Qun Zhou, et al. **Four New Dicafeoylspermidine Derivatives From *Lycium barbarum*.**
http://www.wjtcn.org:8080/ch/reader/view_abstract.aspx?file_no=20160028&flag=1
- 2) Kelvin Chan. **The Evolutional Development of Traditional Chinese Medicine (TCM) Outside the Chinese Mainland: Challenges, Training, Practice, Research, and Future Development.**
http://www.wjtcn.org:8080/ch/reader/view_abstract.aspx?file_no=20160026&flag=1
- 3) Rui Li, et al. **Metabolites Identification of Curcumin, Demethoxycurcumin and Bisdemethoxycurcumin in Rats After Oral Administration of Nanoparticle Formulations by Liquid Chromatography Coupled with Mass Spectrometry**
http://www.wjtcn.org:8080/ch/reader/view_abstract.aspx?file_no=20160035&flag=1
- 4) Wei Gou, et al. **Tonifying Shen-Yin and -Yang Principles in Treating Osteoporosis: All Roads Lead to Rome.**
http://www.wjtcn.org:8080/ch/reader/view_abstract.aspx?file_no=20160031&flag=1
- 5) Chen Zhao, et al. **Standardizing Individualized Efficacy Evaluation to Optimize Evidence-Using Pattern in Traditional Chinese Medicine—Preliminarily Establishing Traditional Chinese Medicine Evidence-based Case Reporting System**
http://www.wjtcn.org:8080/ch/reader/view_abstract.aspx?file_no=20160012&flag=1

**The January 2017 Newsletter of
The GP-TCM Research Association
THE CHINESE NEW YEAR SPECIAL EDITION**



- 6) Fei Su, et al. **Yiqi-Liangxue Recipe Improves Recovery of Injured Endothelia by Promoting the Proliferation and Migration of Vascular Endothelial Cells and Balancing Damage-associated in Flammatory Mediators**
http://www.wjtcn.org:8080/ch/reader/view_abstract.aspx?file_no=20160007&flag=1
- 7) Yi-Shuang Tang, et al. **Potential Role of EGF and EGFR in Tongue Coating Formation.**
http://www.wjtcn.org:8080/ch/reader/view_abstract.aspx?file_no=20160020&flag=1

2. A Lancet call for papers. In September 2017, *The Lancet* will dedicate a weekly issue to health care and research in China to coincide with the centenary of Peking Union Medical College; it will be the journal's eighth such themed issue since 2008. The editors invite submissions of high-quality research from China—or from research teams working on health in China—for this issue in particular.

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(16\)32584-3/fulltext?elsca1=etoc](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)32584-3/fulltext?elsca1=etoc)

3. Invitation to contribute to an *Acta Pharmacologica Sinica (APS, http://www.nature.com/aps)* Special Issue on Fangjiomics: Co-guest editors Professors Zhong Wang, Dayue Duan, Chunxiang Zhang and Yongyan Wang invite you to contribute to a special issue with the featured topic: “**Fangjiomics: Rational Combination Therapy with Integrated Diverse Drug Profiles and its Implications in Precision Medicine**”. The journal *APS* is published in partnership with Nature Publishing Group (NPG), covering a broad scope of pharmacology and the related life sciences and bringing high-quality and cutting-edge research to international scientific community. All articles published in *APS* are free to access after an embargo period of 12 months (archived in PubMed Central). **Authors in this special issue will NOT be charged publication fees.** The use of combination drug therapy for complexity diseases is a common strategy in both Western and traditional Chinese medicine (TCM) although based on different rationales. The structural complexity of combination therapy is limitless. In clinical practice, however, most combination designs comprise the hierarchy or proportional architectures that lead to combination therapies with spatially homogeneous features. More advanced applications in drug combination therapy in the practice of precision medicine emphasize the integrated consideration of not only patient's health and disease conditions but also influences by environmental variations, which requires adaptive architectures of drug combination. This special issue of *APS* will summarize the application of Fangjiomics strategy for the mechanistical design and identification of hierarchy and proportional combination therapies that exhibit spatially fangji's functionalities, including reviews in theory and methodology of Fangjiomics, research articles of Fangji's architectures, research article on relationship between Fangji and Zhenghou. The progress in combination therapies exhibit holistic holographic order, whereby the multi-dimensional pixilated function dictates the multi-dimensional drugs interior arrangement. Such an integrated combinational design thus opens a new avenue with unusual order and individualized adjustment for precision medicine.

Both reviews and original articles are welcome. Each article should be around 8000 words excluding references, and illustrated with figures. The manuscript should be ready for peer-review by the **15th April 2017**. <https://mc.manuscriptcentral.com/aphs>

Acknowledgements

Contributions from Prof. **Rudolf Bauer** (Graz), Prof. **Pierre Duez** (Mons), Dr. **Tai-Ping Fan** (Cambridge), Prof. **Zhong Wang** (Beijing), Ms **Hui Xu** (Beijing), Prof. **Rob Verpoorte** (Leiden), Dr. **Qihe Xu** (London) and **UK Science and Innovation Network China** (Beijing) are gratefully acknowledged. Any feedbacks please address to Drs Tai-Ping Fan (tpf1000@cam.ac.uk) and Qihe Xu (qihe.xu@kcl.ac.uk).