GP-TCM Monthly Newsletter October 2009

The Chinese National Day and Mid-Autumn Festival Special Edition

国庆、中秋快乐！

Consortium News

Appointment of GP-TCM Advisors:

1. Welcome Prof Brian F C Clark, Professor Emeritus at the University of Aarhus, Denmark, to join GP-TCM as an Advisory Board Member. Brian is Coordinator of the EU Integrated Project PROTEOMAGE, Chairman of the Task Group on International Relations of the European Federation of Biotechnology (EFB), and Vice President of EFB**.** He was awarded BA, MA, PhD and ScD at Cambridge University, UK, and his main fields of interest are: (i) protein engineering of factors involved in protein synthesis and explanation of function in terms of 3D structure; (ii) macromolecular mimicry and molecular mechanism of protein syntheses; (iii) molecular and cellular mechanism of ageing; (iv) use of phage display to identify differential cellular gene expression and to characterise mutant proteins; (v) molecular mechanism of cancer and age-related diseases. He has published 5 books and ~200 papers, and he is a founding member of the Editorial Boards of the *EMBO J*ournal and *Nucleic Acids Research,* besides *memberships in* the Editorial Boards of *RNA Biology*, *PEDS*, and *Molecular Aspects of Medicine*. Brian's main achievements include discovery of the Initiation Codon for protein synthesis, and hence start of protein coding; crystallisation of tRNA; determination of the first structure of a GTP-binding protein and structural determination of the ternary complex, etc. Due to excellence in research, he has been awarded memberships of the Royal Danish Academy of Sciences and Letters, the Danish Academy of Natural Sciences, the Hellenic Biochemical and Biophysical Society; Honorary Doctorates from the Engelhardt Institute of Molecular Biology (Russia) and University of Athens (Greece); Gold Medal for Peace and Science, Albert Schweitzer International University; Copernicus Medal from the Polish Academy of Sciences; Honorary Professorship, Chinese Academy of Sciences, etc. http://www.mbio.au.dk/~clark/

2. Welcome Prof Gerhard Franz, Professor Emeritus at the University of Regensburg, Germany, to join GP-TCM as an Advisory Board Member. Gerhard is Professor of Pharmacy and Chairman of the European Pharmacopoeia TCM-Working Party. He studied Pharmacy at the University of Karlsruhe (Germany), obtained his PhD in Biochemistry at the University of Fribourg (Switzerland), and had his postdoc positions at the University of California (USA). After a long academic career at the Faculty of Pharmacy and Chemistry at the University of Regensburg, as Director and Chair of Pharmacognosy, Dean of the Faculty, member of the Senate and other University positions, he is now actively working for the German European Health Authorities. He is a Past President of the International Society of Medicinal Plant Research (GA) and Vice President of the Deutsche Pharmazeutische Gesellschaft (Bavaria). His research is related to natural compounds, in particular, carbohydrates and their pharmacologically active derivatives. He has trained more than 50 PhD students and has a record of more than 250 peer-reviewed papers and several books. He is an awardee of many honours, e.g. the Egon Stahl Award, the Kneipp Award, the E. Thomms Medal, an honorary membership of GA, corresponding memberships of the Belgian Medicinal Society and the Academie Francaise de Pharrmacie.
http://www.uni-regensburg.de/Universitaet/Forschungsbericht/Bericht_6/f-Prof-252.html

3. Welcome Prof Vivian Taam Wong, Past Chief Executive and currently Advisor in Integrative Medicine at the Hospital Authority (Hong Kong) to join GP-TCM as an Advisory Board Member. At HA Chinese Medicine Ltd., Vivian is steering research, education and knowledge transfer to support collaboration among Chinese and western medicine practitioners. Besides being an Honorary Fellow, she is Honorary Professor at the School of Chinese Medicine of the University of Hong Kong and Adjunct Professor at the Baptist University, Hong Kong. She is, *inter alia*, president of the Hong Kong Association for Integration of Chinese-Western Medicine, council member of the Chinese Association of Integrative Medicine, council member of Modernised Chinese Medicine International Association, Co-chair of the database group in Consortium for Globalisation of Chinese Medicine and Council Member of the Cross-strait Scientific Collaboration Center for Chinese Medicine being Deputy Head of the research co-operation group. Vivian's career spans the specialties of obstetrics & gynecology, internal medicine and public health, being Fellow of the respective Royal Colleges in the UK. Her documentation of perinatal transmission of Hepatitis B led to her landmark study on the use of immunoglobulin and vaccine to prevent neonatal infection. Her research in acupuncture started in the 1970s and her studies on Qigong and Taichi complement recent work on herb-

drug interaction, the use of Chinese Medicine on major disease burden, prevention and rehabilitation. She has wide research interests, having served on the editorial board of 6 journals, with 89 publications, 99 presentations and co-edited a book on SARS.

Appointments of New Non-beneficiary Members:

1. Welcome Prof Rudolf Bauer (University of Graz, Austria) to join GP-TCM as a non-beneficiary member devoted to WP1 (quality control) and WP10 (management), lead scientists of which are Prof Monique Simmonds and Dr Qihe Xu. Rudi studied pharmacy and received his PhD at the University of Munich, Germany. He was Associate Professor of Pharmaceutical Biology at University of Düsseldorf from 1993-2002; now he is Head of the Institute of Pharmaceutical Sciences and of the Department of Pharmacognosy at University of Graz, Austria. As a Co-founder and Head of the TCM Research Center Graz, he has a long experience in natural product chemistry, in particular, analysis and bioassay-guided isolation of constituents from medicinal plants. In addition, Rudi has been active in developing methods for quality control of Chinese herbs for 18 years. He is a member of the expert group 13A and of the Working Group on TCM of the European Pharmacopoeia Commission; he is actively involved in the development of monographs of Chinese herbs for the European Pharmacopoeia and is also a member of the TCM Advisory Board of the Austrian Ministry of Health. In addition to more than 250 research papers, he has worked together with Prof. Hildebert Wagner on editing the book series *Chinese Drug Monographs and Analysis*. Rudi is a co-editor of Planta Medica, serves the editorial boards of several other journals and has been involved in FP6 and FP7 projects.
https://online.uni-graz.at/kfu_online/visitenkarte.show_vcard?pPersonenId=CA5B831B496B872B&pPersonenGruppe=3

2. Welcome Dr Enzo Tramontano (University of Cagliari, Italy) to join GP-TCM as a non-beneficiary member devoted to WP10 (Management Team), coordinated by Dr Qihe Xu. Enzo is an Associate Professor at the Department of Applied Sciences in Biosystems, with a long-standing expertise in the field of anti-viral drug development. He took his PhD degree at the University of Cagliari in 1990 and was appointed a Visiting Research Scientist at Yale University Medical School (USA) in 1990-1992 and 1996-1998. Enzo's research interest is currently focused on the development of anti-viral agents with innovative targets. He has been involved in several national and international research programmes, and in particular, he has been the PI of 4 research projects on the development of new anti-viral drugs granted by the Bank of Sardinia Foundation (Italy) and EU-INTAS*. Enzo has published 36 papers in international journals and has been awarded a couple of honours e.g. a Young Investigator Presentation to the 17th International Conference on Antiviral Research in 2004, Tucson, Arizona, and 2 post-doctoral awards granted by the Istituto Superiore di Sanità (the Italian equivalent of the NIH) for research on HIV and international collaboration. http://people.unica.it/enzotramontano/
* INTAS refers to *the International Association for the promotion of co-operation with scientists from the New Independent States of the Former Soviet Union*.

3. Welcome Dr Rajendra Kumari (University of Nottingham, UK) to join GP-TCM as a non-beneficiary member devoted to WP5 (animal studies), lead scientists of which are Prof Javier Lucio-Cazana and Prof Sue Watson. Rajendra is a university lecturer and Project Manager of PRECOS, a University of Nottingham business unit, which performs pre-clinical cancer research for Industry. Her research interests include the development and validation of pre-clinical cancer models, with a specific focus on cancer stem cells and tumour microenvironment, to mimic the patient situation as closely as possible, allowing optimal screening of anti-cancer agents and better predictivity of efficacy in the clinic. Along with numerous collaborations with industry, she is also a co-investigator of a Cancer Research UK project grant, a NC3Rs* grant and an industry-funded *Ex Vivo* Research Centre grant. She is also the *in vivo* project manager for the Innovation China UK grant *Pharmaceutical and commercial development of a purified phytochemical extract from the Chinese fungus, Ganoderma lucidum, for use in prostate cancer chemoprevention.* http://www.nottingham.ac.uk/dpco/Personnel.htm
* NC3Rs refers to *The National Centre for the Replacement, Refinement and Reduction of Animals in Research* (UK)

Consortium Events and Labour Division:

1. Congratulations to Prof Pierre Duez for being appointed a WP3 Co-Coordinator: As requested by Prof. Xinmin Liu, in view of the increasingly important roles Pierre is playing in the WP, Pierre has been appointed a Co-Coordinator of WP3. Xinmin remains a Co-Coordinator.

2. The Joint 6th Coordination Office Teleconference and Management and Science Meeting: The joint sixth Coordination Office (CO) and second Management and Science meeting (MSM) teleconferences of the GP-TCM project took place on 28th September 2009 as a Skype meeting. The meeting gathered 18 GP-TCM members including CO members, Literature Review Standard Operating Procedure (SOP) Panel Co-Chairs and WP Coordinators (and/or their representatives).

As part of the 2nd MSM, each WP coordinator (or their representative) presented current status of their WP, i.e., progress, achievements, and problems that they have encountered during the first 6 months of the project, and also summarised their future plans. After each WP summary, the CO members and all other meeting

attendees were given opportunity to ask questions and make suggestions. During this joint event, the attendees also had the opportunity to present and discuss various project related issues such as FP7 and GP-TCM internal reporting, project website, new FP7 grant bidding, and the 4th MSM plans.

3. News on WP1 and WP2 Joint Kick-off meeting:

The Kick-off meeting of WP2 (Extraction and component analysis of CHM) was held on 13th and 14th September 2009 in Jodrell-Laboratory, Kew Gardens, London, as a joint meeting with the closely related WP1. The meeting was hosted by the WP1 coordinator Monique Simmonds. Eight WP2 members attended the meeting: Helen Sheridan (Ireland), Werner Knöss (Germany), Monique Simmonds (UK), Derek Fisher (UK), Alberto Dias (Portugal), Mirko Bayer (Germany), Kirsten Knapp (Germany) and Jandirk Sendker (Germany). After the attendees had introduced themselves, Monique Simmonds gave an overview of the GP-TCM project. General strategy and specific aims of WP2 were presented by Jandirk Sendker. During the afternoon sessions the selection of priority species was discussed in conjunction with WP1, including a presentation about medical plants produced under GAP by Zhongzhen Zhao. Tasks related to the early deliverables of WP2 were allocated and the organisation of the imminent deliverable D2.4 was decided. Finally, the important issue of web-based communication and data consolidation was discussed with Halil Uzuner, who joined the meeting together with Qihe Xu on the second day.

4. New local appointments: Dr Xiaole Kong (KCL, UK) and Dr Jue Zhou (known as Julie; KCL, UK) have been appointed to join GP-TCM as local assistants to the WP4 Coordinator Prof Peter Hylands.

Recent papers and products news in focus

***Pharmacogenomics* emphasizes its links with TCM**

The August issue of "*Parmacogenomics*", has dedicated its editorial to the role of traditional Chinese medicine and bioinformatics in pharmacogenomics (authors: Jing-Fang Wang, and Dong-Qing Wei, from Shanghai Jiaotong University). Pharmacogenomics investigates the genetic basis of individual variations in response to drugs and plays a key role in the emerging field of personalized medicine, empowering physicians to make right decisions for the treatment. An effective approach to pharmacogenomics requires the integration of interdisciplinary sciences and in order to exploit its full clinical potential, genomic information must be viewed with a systems biology approach.

The paper focuses on two subjects that should be integrated with genomic data: structural bioinformatics and TCM. Structural bioinformatics mainly investigates the roles that biological molecules play in the context of complicated pathways and interactions, thus giving a significant contribution to the understanding of key issues in pharmacogenomics at the molecular level.
The editorial then gives a quick description of TCM and its practice, emphasizing its holistic approach and stressing its value in the quest for novel pharmacological strategies. In particular, an increasing number of new drugs have been derived from herbs used in TCM, and therefore the construction of TCM databases is impending, where the effective components are organized in terms of chemical informatics protocols, and include the relevant gene and disease information. Such databases can be used to build systematic correlations between multiple targets and molecules from TCM. The authors then indicate two such databases [*Chen X, Zhou H, Liu YB et al.: Database of traditional Chinese medicine and its application to study of mechanism and to prescription validation. Br. J. Pharmacol.149,1092–1103 (2006); Fang YC, Huang HC, Chen HH, Juan HF: TCMGeneDIT: a database for associated traditional Chinese medicine, gene and disease information using text mining. BMC Complement. Altern. Med.8,58–69 (2008)*].

The editorial thus proposes a link between pharmacogenomics, structural bioinformatics and TCM, stressing the need to further merge the three fields. In the end, the approach suggested by the authors seems more reductionistic than what it could have been, and suggests the use of TCM simply to identify new drugs acting as single molecules on multiple targets, leaving behind the known therapeutic value of the molecular complexity of the TCM approach. The reader indeed could have expected a step further towards a really holistic view, the understanding of multiple actions by multiple molecules contained in phytocomplexes or other medications.

The most interesting aspect of the editorial though, is represented by the importance given to the issue of TCM by the journal, one of the leading publications dealing with pharmacogenomics and an opinion leader for the scientific community in the field. With this opening editorial the journal is thus giving an important contribution in bridging together functional genomics and TCM. [Alessandro Buriani]

Jing-Fang Wang, Dong-Qing Wei **Role of structural bioinformatics and traditional Chinese medicine databases in pharmacogenomics** *Pharmacogenomics,* August 2009, Vol. 10, No. 8, 1213-1215. http://www.futuremedicine.com/doi/pdf/10.2217/pgs.09.81

Marketing authorization for Veregen®

Germany has officially granted marketing authorization for Veregen®, the standardized green tea extract, as an prescription drug for genital warts. As reported in the last issue of GP-TCM Newsletter, the marketing authorization application for Veregen® was assessed

positively in a decentralized approval procedure by the German, Austrian, and Spanish national regulatory authorities. The formal issue of marketing authorization in Germany is the first implementation of the assessment by a national regulatory authority. Marketing authorization of Veregen® in Germany, the reference member state in this decentralized procedure, will now provide a basis for additional marketing authorization applications to be submitted in additional European countries. The issuance of formal marketing authorizations in Austria and Spain are expected within the next few months. [You Ping Zhu]

Funding opportunities from the European Science Foundation [Annelies Schulte]

http://www.esf.org/activities/research-networking-programmes/life-earth-and-environmental-sciences-lesc/current-esf-research-networking-programmes-in-life-earth-and-environmental-sciences/european-networking-summer-school-plant-genomics-bioinformatics-enss/call-for-proposals.html

Open Call for Summer School Proposals

The ENSS Research Networking Programme invites proposals from the scientific community to organise summer schools to be held between 2011 and 2012.

While schools can have a thematic focus on e.g. technology and biodiversity, imaging technologies, protein interactions, systems biology etc., ENSS strongly encourages the submission of new topics of relevance to the Programme. The school should ideally target groups of approx. 20-50 young researchers from all over Europe, and combine the latest theoretical knowledge with practical lessons.

The deadline for submission of Summer School proposals is **15 December 2009.**

For further information please contact: Mrs Cindy Hury E-Mail Administrator - EUROCORES Coordination

Application procedure: All Summer School proposals should be submitted online. Applicants are required to upload **one** document* containing the following information:

1) Scientific summary (max. 1000 words) and abstract (max. 50-70 words)
2) Details of venue
3) Draft meeting programme
4) Curriculum Vitae of the Scientific Organiser including list of five most relevant publications over the last five years
5) Provisional list of proposed speakers/participants
6) Budget breakdown with justification costs

For information: Guidelines for Proposals and Organisers of Science Meetings (PDF - 206 KB)

From the Innovative Medicine Initiative

Calls IMI 2nd Call 2009

Announcement of the Topics to be included in the IMI JU 2nd Call

The IMI JU announces, following approval by the Governing Board, the topics for the IMI JU second Call for Proposals. These Topics are based on IMI's research priorities for 2009 and include research in the two strategic pillars:

IMI Efficacy Pillar:

- Oncology-target validation
- Oncology – molecular biomarkers
- Oncology – imaging biomarkers
- Infectious disease – diagnostic tools
- Inflammation – aberrant adaptive immunity
- Inflammation – translational research

IMI Knowledge Management Pillar

- Knowledge management – drug/disease modeling
- Knowledge management – open pharmacological space
- Knowledge management – electronic health records

This announcement is to inform the scientific community already in advance about the Topics that will be subject of the IMI JU 2nd Call. The actual launch of the IMI JU 2nd Call is foreseen for the 30th October 2009 with a deadline expected to be in January 2010.

SW China TCM Inward Mission visited UK universities on 13-19 Sept. 2009

Organised by British Consulate General Chongqing, representatives from Chengdu University of TCM, Guangzhou University of TCM, Tai Ji Group, Chengdu Kanghong Pharmaceutical Group, Chengdu Zhonghui Pharmaceutical Co., Ltd visited King's College London, University of Cambridge, University of Nottingham and University of Warwick.

PRESS RELEASE (22 September 2009)

Chinese plant-based medicine mission forges links with Cambridge

A delegation of twelve leading scientists and industrialists from South West China specialising in traditional Chinese plant-based medicines has forged

links and shared their expertise with leading academics at the University of Cambridge.

The visit, arranged by the British Consulate in Chongqing, China, in conjunction with EEI - the region's inward investment agency - enabled the group to explore new ways of researching and developing plant-based pharmaceutical and/or botanical products.

The delegation met with local companies including Global Regulatory Services, Biotica and Phytopharm as well as hearing presentations from several University departments. The delegates also visited Professor Duncan Maskell (the University's Veterinary School), Professor Kay-Tee Khaw (Clinical Gerontology) and Dr Anthony Davenport (Clinical Pharmacology Unit) in addition to touring Addenbrooke's Centre for Clinical Investigation and Cancer Research UK Cambridge Research Institute at the Li Ka Shing Centre. Professor Fan Xin-jian (President of Chengdu University of Traditional Chinese Medicine) said "We are particularly honoured to visit Cambridge and share our knowledge in this burgeoning field as part of its 800th Anniversary Campaign. We are very eager to join forces with the University and become a partner of the 2020 Vision of the Cambridge Biomedical Campus"

Hosting the group, Nykki Rogers of East of England International said: "Our region is a world leader in health and life sciences research and development. Building closer links with Chinese expertise in this way will lead to the potential for future inward investment into the region for R&D and manufacturing companies operating in this specialised area. I am delighted that EEI has been able to partner with the University on this initiative."

Professor Ian Leslie (Pro-Vice Chancellor of Research) and Professor Christopher Gilligan (Head of School of Biological Sciences) welcomed the opportunity of long-term collaborations with Chinese academics, clinicians and pharmaceutical companies who are committed to the high standards of scientific research on which Cambridge prides itself. With an exciting talk on *Engineered Biosynthesis of Natural Product Drugs - Nature's Chemistry Set and the Science behind Biotica,* Professor Peter Leadlay (Department of Biochemistry) highlighted that natural products are an outstanding source of effective medicines, and that biosynthetic engineering means that IP and business opportunity can be created to meet important medical needs.

Chairing the seminar, Dr Tai-Ping Fan, Head of the University's Angiogenesis & Chinese Medicine Laboratory, an Honorary Professor of Chinese Academy of Medical Sciences and a member of Chinese Ministry of Science & Technology Expert Committee on Traditional Chinese Medicine, said: "Basic research and clinical studies in China have already shown that traditional Chinese medicine (TCM) holds the potential for therapies to treat leukaemia, eczema, diabetic foot, diabetic retinopathy and endometriosis, as well as neurodegenerative diseases such as Alzheimer's. As a key member of the three-year FP7 Programme 'Good Practice in TCM Research in the Post-genomic Era (GP-TCM)' funded by the European Commission, Cambridge is very well placed to become an international centre for validating these old medicines and developing them into new therapies."

The arrival of the delegation signifies the world-wide importance of Cambridge and the wider region in the research, development and manufacture of plant-based medicines. The University's global prominence in the field will be significantly enhanced by a new £89 million research facility for the study of plant science, funded by the Gatsby Charitable Foundation, which will open in 2010.

Meeting report

2009 Shanghai International Conference on Traditional Chinese Medicine and Natural Medicines (S-TCM 2009) 17-18 October 2009.

This conference was attended by a significant number of GP-TCM members (e.g., Xinsheng Yao, Brian Clark, Qihe Xu, De-an Guo, Xin-miao Liang, Verena Dirsh, Brigitte Kopp) enabling them to discuss WP-related matters in addition to interacting with experts from other fields of natural products.

Drug discovery from natural sources: **Han-dong Sun (*Kunming Institute of Botany, China)*** New drug R&D based on the rich resources of medicinal plants in China; **Kurt Hostettmann** (University of Geneva, Switzerland) Importance of medicinal plants and natural medicine in Europe; **Norman Lewis** (Washington State University, USA) Plant phenol biosynthesis and historical relevance to human health/nutrition; **Verena Dirsh** (University of Vienna, Austria) Leads and Lessons from Nature. **Simon Gibbons** (University of

London, UK) Phytochemicals for bacterial resistance: opportunities for new anti-infectives.

Systems biology of traditional Chinese medicine: **Xi-jun Wang** (Heilongjiang University of TCM, China) Metabonomics based biomarker discovery for the therapeutics of Chinese medical formula with LC-MS.

Quality and safety of traditional Chinese medicine: **Zhong-zhi Qian** (Chinese Pharmacopoeia Commission, China) Highlights of Chinese Pharmacopoeia 2010 Edition. **Michael Wierer** (European Directorate for the Quality of Medicines, France) European Pharmacopoeia Monographs on Herbal drugs used in TCM.

Modern approaches to traditional Chinese medicine: **Xin-miao Liang** (Dalian Institute of Chemical Physics, China) presented Herbalome, a programme for elucidating the compositions, structures and functions of TCM herbs and establishing a resource library of TCM; **Tai-Ping Fan** (University of Cambridge, UK) Dissecting the angio- and immuno-modulatory properties of *Angelica sinenesis in vitro*; **Svetlana Ignatova** (Brunel University, UK) High performance & high throughput countercurrent chromatography for the isolation of active principles from TCM; **Yan-huai Liu** (Eastlinden Co. Ltd., China) The application of patent information in traditional medicine innovation.

Regulatory issues: **Werner Knöss** (Federal Institute for Drugs and Medical Devices, Germany) Regulation of traditional herbal medicinal products in Europe: current status and options for traditional medicines. **Michael Popp** (Bionorica Co. Ltd., Germany) How to make a successful registration for herbal products from Asia to Europe – explained by the Phytoneering concept.

Bioactive natural products: **Werner Müller** (University of Mainz, Germany) Porifera a reference phylum for evolution and bioprospecting: the power of marine genomics; **Heinz Schröder** (University of Mainz, Germany) Sponge biosilica: novel applications of enzymes and proteins involved in biosilica formation in nanobiotechology and nanomedicine; **Sangkil Nam** (City of Hope Comprehensive Cancer Center, USA) Indirubin derivatives induce apoptosis of chronic myelogenous leukemia cells via inhibition of Stat5 signaling.

Phytochemical analysis of herbal medicines: **Yuan-chun Ma** (Canadian Phytopharmaceuticals Co. Ltd., Canada) Prospects in the quality control of formulated botanical products; **Ping Li** (China Pharmaceutical University, China) Analysis and screening of bioactive components in herbal medicines by HPLC and hyphenated techniques; **Günther Bonn** (University of Innsbruck, Austria) New analytical technologies for quality control in phytopharmacy; **Kate Yu** (Waters Corporation, USA) Small molecule sample profiling strategy using UPLC/oa-TOF MSE/Ion Mobility MS as the analytical tool.

Acknowledgements

Thanks to Prof **Brian Clark** (Denmark), Prof **Gerhard Franz** (Germany), Prof **Vivian Taam Wong** (Hong Kong), Prof **Rudolf Bauer** (Austria), Dr **Enzo Tramontano** (Italy), Dr **Rajendra Kumari** (UK), Dr **Alessandro Buriani** (Italy), Dr **You-Ping Zhu** (the Netherlands), Dr **Annelies Schulte** (the Netherlands), Dr **Qihe Xu** (UK) and Dr **Halil Uzuner** (UK) for their contributions.