

GP-TCM Newsletter - The 2010 New Year Edition

Consortium News:

1. TEST-GP application submitted on the 22nd December 2009! As we reported in the November 2009 issue of the GP-TCM Newsletter, the Consortium had been exerting a group exercise entitled “*Train EU Scientists Towards Good Practice in TCM Research*” (TEST-GP), which is an FP7 Marie Curie Initial Training Network programme grant application for ~€3.5m aiming at training 14 PhD and junior postdoctoral scientists specialised in Chinese medicine research. We are pleased to update here that this application, involving 37 GP-TCM partners and 21 partners not involved in GP-TCM yet, has been submitted! The Coordination Office (CO) of the GP-TCM Consortium sincerely thanks all GP-TCM members who have contributed to this group exercise in one way or another and will warmly invite those TEST-GP partners who are not GP-TCM members yet to join us either as GP-TCM Newsletter Recipients, Non-beneficiary Members, or Advisers. Invitations will be issued individually in the coming weeks and they will be introduced to the GP-TCM Community in our future Newsletters. Should you have any queries about the TEST-GP bid, please send your inquiry to Dr Qihe Xu: qihe.xu@kcl.ac.uk.

2. The 8th CO Teleconference: The meeting was held at 11:00-12:30 GMT on 14th December 2009 and was attended by Kelvin Chan, Alberto Dias, Pierre Duez, Hani El-Nezami, Tai-Ping Fan, Peter Hylands, Ron Irwin, Halil Uzuner, and Qihe Xu. Minutes: (i) Halil briefly reviewed the minutes of the last teleconference; (ii) Tai-Ping briefed the progress and plans for the GP-TCM website; (iii) Qihe updated the progress of the TEST-GP application; (iv) Halil updated the venue arrangement for the 4th Management & Science Meeting; (v) Halil informed the progress of WP deliverable reports and the CO approved the quality control procedure for consortium deliverable reports; (vi) Functions of the Steering Committee, Technical Advisory Committee, and Ethics Panel are reviewed and members of the committees/panel will be elected soon.

3. The 9th CO Teleconference and the 3rd Management & Science Meeting (MSM) will be held as a Skype online meeting on Friday, 29th January 2010. The meeting will review reports from each WP, give feedback and coordinate activities. All WP Coordinators will be invited to join the teleconference and present their WP (no more than 200 words, as bullet-points) by summarising

their WP's progress, three-year plan, deliverables, kick-off meeting and web-page details, problems, etc for the period of **November 2009 - January 2010**.

4. The Venue and Dates of the 4th Management & Science Meeting: Review progress and pitfalls of the 1st year; plans for the 2nd year. The meeting will be held in the UK.

- **Venue:** Henley Business School, p.4 of this Issue (<http://www.henleyconferences.co.uk/>)
- **Attendees:** At least one representative per beneficiary partner and all WP leads will be invited to attend the meeting. By invitation only.
- **Dates:** 28th-30th July 2010 (arrival on the evening of 27th July; departure on 30th July).
- **Meeting Co-Chairs:** Dr. Qihe Xu (KCL, UK) and Prof Elisabeth M Williamson (Reading University, UK)

5. Appointment of Dr Tai-Ping Fan (University of Cambridge, UK) as a GP-TCM Deputy Coordinator: In view of the increasingly important role Tai-Ping has been playing in WP7 (Co-Lead), WP9 (Deputy), WP10 (Assistant Coordinator; Website and Newsletter Editor-in-Chief), as well as his efforts in the preparation of the TEST-GP bid (Deputy Coordinator and WP7 Lead), the GP-TCM Coordination Office has collectively decided to promote Tai-Ping as a GP-TCM Deputy Coordinator, along side with our existing Deputy Coordinators Dr Alberto Dias (University of Minho, Portugal) and Prof De-an Guo (Chinese Academy of Sciences, China). **Warmest congratulations Tai-Ping!**

6. Free access to World Traditional Medicine Patent Database (WTMPD) of East Linden! In recognition of our support to a grant application led by East Linden, the company has kindly decided to provide the GP-TCM Consortium up to 30 usernames and passwords for free access to their World Traditional Medicine Patent Database (WTMPD). The database covers all patent literature related to natural medicines issued by 22 countries and 2 international organisations since 1985. All patents, both in Chinese and English, totaling 110,000 (more than 200,000 family patents), are high-quality manually processed, deeply indexed and translated. WTMPD has several auxiliary databases, such as natural medicine database, chemical substance database, Chinese medicine formula database. Based on the

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above rich resources, professional searching functions are provided to facilitate the efficient utilizing of patent information, including quick search, form search, advanced search, IPC search, chemical structure search, natural medicine search, Chinese medicine formula search, as well as Chinese medicine formula similarity search have been designed. In addition, this database provide over 30 search entries and support multi-language search, synonym expansion search and cross-database search. Any GP-TCM members who are interested in this database please contact Dr Halil Uzuner (halil.uzuner@kcl.ac.uk), who will send you more details about this database by e-mail soon.

<http://www.eastiinden.com.cn/english.asp>

Brief update on WP matters

WP4 and WP5 are making good progress in the review of published articles regarding TCM and functional genomic studies using *in vitro* models (WP4) and *in vivo* models (WP5).

Following the work flow agreed in the WP4 kick-off meeting in London (October 2009), 11 TCM articles were kindly selected by Prof Monique Simmonds and distributed among WP4 members and a trial of article analysis following the criteria agreed during the meeting is now taking place. Criteria for bibliography analysis include review of methodology, scope, results, conclusion, etc.... Score for any analysed task will be given and WP4 members will establish a ranking of the articles based on the total score. This trial has the purpose to fix the criteria of analysis for the available literature in functional genomic studies using *in vitro* models. It will also help to set up criteria for writing reviews as WP4 deliverable. Results of this analysis will be discussed in the Second WP4 meeting to be held next February in London.

Following the programme established for WP5 in its Kick-off meeting in June 2009 in Alcalá, the members of this WP are also reviewing literature to analyse the current status of Functional Genomic studies using *in vivo* models. It was agreed to deliver a first review, "TCM in cancer", in the kick-off meeting. Thus, WP5 members (Dr G Olmos and Dr ML Garcia Bermejo) have selected more than a thousand papers for the period (2000-2009) relevant for TCM and *in vivo* cancer models. The papers have been distributed among all the WP5 members and they are under review at this moment. For this review, a list of criteria was agreed in the kick-off meeting.

Editor's choice

Interactions between gut microbiota, host genetics and diet relevant to development of metabolic syndromes in mice. Zhang C, Zhang M, Wang S, Han R, Cao Y, Hua W, Mao Y, Zhang X, Pang X, Wei C, Zhao G, Chen Y, Zhao L. *The ISME Journal advance online publication*, 29 October 2009; doi:10.1038/ismej.2009.112.

Laboratory of Molecular Microbial Ecology and Ecogenomics, Department of Biological Sciences, School of Life Sciences and Biotechnology, Shanghai Jiao Tong University, Shanghai, PR China.

Both genetic variations and diet-disrupted gut microbiota can predispose animals to metabolic syndromes (MS). This study assessed the relative contributions of host genetics and diet in shaping the gut microbiota and modulating MS-relevant phenotypes in mice. Together with its wild-type (Wt) counterpart, the *Apoa-I* knockout mouse, which has impaired glucose tolerance (IGT) and increased body fat, was fed a high-fat diet (HFD) or normal chow (NC) diet for 25 weeks. DNA fingerprinting and bar-coded pyrosequencing of 16S rRNA genes were used to profile gut microbiota structures and to identify the key population changes relevant to MS development by Partial Least Square Discriminate Analysis. Diet changes explained 57% of the total structural variation in gut microbiota, whereas genetic mutation accounted for no more than 12%. All three groups with IGT had significantly different gut microbiota relative to healthy Wt/NC-fed animals. In all, 65 species-level phylotypes were identified as key members with differential responses to changes in diet, genotype and MS phenotype. Most notably, gut barrier-protecting *Bifidobacterium* spp. were nearly absent in all animals on HFD, regardless of genotype. Sulphate-reducing, endotoxin-producing bacteria of the family, *Desulfovibrionaceae*, were enhanced in all animals with IGT, most significantly in the Wt/HFD group, which had the highest calorie intake and the most serious MS phenotypes. Thus, diet has a dominating role in shaping gut microbiota and changes of some key populations may transform the gut microbiota of Wt animals into a pathogen-like entity relevant to development of MS, despite a complete host genome.

Editor's note: This article clearly shows that there is a distinct possibility in the future to re-engineer diet-disrupted gut microbiota with Traditional Chinese medicinal foods for early prevention of metabolic syndromes. Watch this space!!

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Soy consumption reduces mortality and recurrence of breast cancer. Shu XO, *et al.* JAMA 2009;302:2437-2443.

Soy foods are rich in isoflavones, a major group of phytoestrogens that have been hypothesized to reduce the risk of breast cancer. However, the estrogen-like effect of isoflavones and the potential interaction between isoflavones and tamoxifen have led to concern about soy food consumption among breast cancer patients.

The Shanghai Breast Cancer Survival Study, a large, population-based cohort study of 5042 female breast cancer survivors in China, evaluated the association of soy food intake after diagnosis of breast cancer with total mortality and cancer recurrence.

Women aged 20 to 75 years with diagnoses between March 2002 and April 2006 were recruited and followed up through June 2009. Information on cancer diagnosis and treatment, lifestyle exposures after cancer diagnosis, and disease progression was collected at approximately 6 months after cancer diagnosis and was reassessed at 3 follow-up interviews conducted at 18, 36, and 60 months after diagnosis. Annual record linkage with the Shanghai Vital Statistics Registry database was carried out to obtain survival information for participants who were lost to follow-up. Medical charts were reviewed to verify disease and treatment information.

Total mortality and breast cancer recurrence or breast cancer-related deaths. Cox regression analysis was carried out with adjustment for known clinical predictors and other lifestyle factors. Soy food intake was treated as a time-dependent variable.

Results: During the median follow-up of 3.9 years (range, 0.5-6.2 years), 444 deaths and 534 recurrences or breast cancer-related deaths were documented in 5033 surgically treated breast cancer patients. Soy food intake, as measured by either soy protein or soy isoflavone intake, was inversely associated with mortality and recurrence. The hazard ratio associated with the highest quartile of soy protein intake was 0.71 (95% confidence interval [CI], 0.54-0.92) for total mortality and 0.68 (95% CI, 0.54-0.87) for recurrence compared with the lowest quartile of intake. The multivariate-adjusted 4-year mortality rates were 10.3% and 7.4%, and the 4-year recurrence rates were 11.2% and 8.0%, respectively, for women in the lowest and highest quartiles of soy protein intake. The inverse association was evident among women with either

estrogen receptor-positive or -negative breast cancer and was present in both users and nonusers of tamoxifen.

Conclusion: Among women with breast cancer, soy food consumption was significantly associated with decreased risk of death and recurrence.

Editor's note: In 1993, Fotsis *et al* reported that genistein (a dietary-derived inhibitor of angiogenesis, known to inhibit receptor tyrosine kinase) concentrations in urine of subjects consuming a plant-based diet are in the micromolar range, while those of subjects consuming a traditional Western diet are lower by a factor of > 30. The high excretion of genistein in urine of vegetarians and their experimental results suggest that genistein may contribute to the preventive effect of a plant-based diet on chronic diseases, including solid tumors, by inhibiting neovascularisation. <http://www.pnas.org/content/90/7/2690.abstract> This Shanghai Breast Cancer Survival Study is probably the first human study to confirm the various studies in animal models.

Recent Press Releases:

1. Cambridge University partners with Hutchison Chi-Med to find active ingredients in traditional medicines. The PI at Cambridge is Dr Tai-Ping Fan, Deputy Coordinator of GP-TCM.

<http://www.guardian.co.uk/business/2009/dec/22/hutchison-chi-med-cambridge-university>
<http://www.guardian.co.uk/business/2009/dec/22/chi-med-nils-pratley>

2. CAMBrella, an FP7 research network for complementary and alternative medicine, kick-started on 1 January 2010. GP-TCM member Prof George Lewith is one of the participants of CAMBrella.

http://ec.europa.eu/research/headlines/news/article_10_01_08_en.html
<http://cambrella.eu/ca.html>

3. "Golden Flower" of TCM: China hails the successful development of a Chinese herbal formula against swine flu

http://www.chinadaily.com.cn/world/2009-12/17/content_9196095.htm
<http://blogs.wsj.com/chinarealtime/2009/12/17/old-formulas-to-treat-a-new-flu/>

4. A British study published in the JBC: A drug derived from a mushroom used in TCM and first identified in the 1950s could be made more effective in the fight against cancer.

http://cordis.europa.eu/fetch?CALLER=EN_NEWS&ACTION=D&SESSION=&RCN=31619
<http://www.jbc.org/content/early/2009/11/23/jbc.M109.071159.full.pdf>

5. After long march, scientists create 'Chinese NIH'

<http://www.sciencemag.org/cgi/content/short/327/5962/132-a>

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Other issues:

1. **The Wellcome Trust Policy on Complementary and Alternative Medicine (Research) – Ten years have passed; Is it time for an update?** <http://www.wellcome.ac.uk/About-us/Policy/Policy-and-position-statements/WTD002760.htm>

2. **Life Sciences in China:** <http://www.the-scientist.com/supplements/china/toc.jsp>

Meetings:

4th ESF Conference on Functional Genomics and Disease April 14-17, 2010, Dresden, Germany Topics include: Comparative genomics, RNomics & miRNA, Proteomics, Epigenetics, Regulatory networks, Systems biology, Personalised medicine, Neurogenomics, Ageing, Bioinformatics, High throughput technologies, Affinity proteomics, Biobanking

9th CGCM Meeting, Aug 23-25, 2010

The 9th Meeting of Consortium for Globalization of Chinese Medicine (CGCM) will be held at Hong Kong Baptist University, Hong Kong. The Meeting provides 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. The details and preliminary programme of the meeting will be announced ASAP.

Acknowledgements

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