中药全球化联盟
CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

Regional Report

European Chapter

Report by Prof. Dr. Rudolf Bauer,
Chairman of the European Chapter of CGCM
and Past President of GP-TCM Research Association

中药全球化联盟
CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

European Chapter

Member Institutes

Austria		
#06	Medical University of Vienna	Prof. Ma Yan
#07	TCM Research Center Graz, University of Graz and Medical University of Graz	Prof. Bauer Rudolf Prof. Litscher Gerhard
Germany		
#34	German-Chinese Research Foundation of TCM (Deutsch-Chinesische Forschungsgemeinschaft)	Prof. Greten Johannes
#35	HanseMerkur Center for TCM at the University Medical Center Hamburg Eppendorf	Dr. Salchow Roland
#36	University of Munich	Prof. Wagner Hildebert
Italy		
#54	University of Cagliari	Prof. Tramontano Enzo
#55	Sardegna Ricerche	Prof. Biggio Giovanni
#56	The University of Florence	Prof. Bilia Anna Rita
Denmark		
#31	The University of Aarhus	Prof. Clark Brian ✞
The Netherlands		
#	Sino-Dutch Center for preventive and personalized Medicine	Prof. Van der Greef Jan

The GP-TCM Research Association
中医药规范研究学会

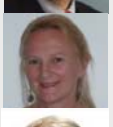
Board of Directors (2015-2016)
学会领导机构选举和主要任命

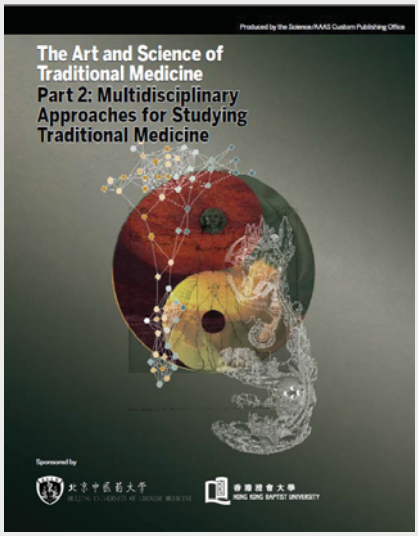


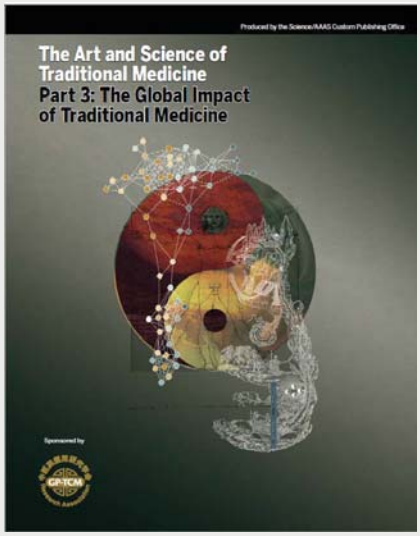



- Prof. De-an Guo, Shanghai, China, President
- Prof. Rudolf Bauer, Graz, Austria, Past President
- Dr. Tai-Ping Fan, Cambridge, UK, President Elect
- Prof. Peter Hylands, London, UK, Treasurer
- Prof. Kelvin Chan, Sydney, Australia
- Prof. Pierre Duez, Bruxelles, Belgium
- Prof. Aiping Lu, Beijing/Hong Kong, China
- Prof. Nicola Robinson, London, UK
- Prof. Monique Simmonds, London, UK
- Prof. Rob Verpoorte, Leiden, The Netherlands
- Prof. Vivian Taam Wong, Hong Kong, China
- Prof. Thomas Efferth, Mainz, Germany







香港浸會大學
HONG KONG BAPTIST UNIVERSITY

HKBU

School of 中醫藥學院
Chinese Medicine

The 5th Annual Meeting of GP-TCM Research Association-cum-Summit on *Compendium of Materia Medica* and Innovative Drug Discovery in Chinese Medicine

FIRST ANNOUNCEMENT

9-10 August 2016

Room 103, Dr. Hari Harilela Lecture Theatre, The Wing Lung Bank Building for Business Studies
Hong Kong Baptist University (Shaw Campus), 34 Renfrew Road, Kowloon Tong, Hong Kong

"The 5th Annual Meeting of GP-TCM Research Association-cum-Summit on *Compendium of Materia Medica* and Innovative Drug Discovery in Chinese Medicine", jointly organised by GP-TCM Research Association, School of Chinese Medicine of Hong Kong Baptist University, and TCM Chemistry Specialty Committee and TCM Pharmaceutical Analysis Specialty Committee of WFCMS, will be held on 9–10 August 2016 on the campus of Hong Kong Baptist University, Hong Kong.

This international academic event is hosted by the School of Chinese Medicine to celebrate the 60th anniversary of the Hong Kong Baptist University. The details are set out below.

All activities
are published in the

Newsletters

(Editor in Chief: Taiping Fan,
assisted by Qihe Xu)

http://www.gp-tcm.org/news-list/

The June-July 2016 Newsletter of
The GP-TCM Research Association

Editorial

After the Nobel Prize – What Next?

Professor Dr. Thomas Efferth,
Member of the Board of Directors, The GP-TCM Research Association
Department of Pharmaceutical Biology
Institute of Pharmacy and Biochemistry
Johannes Gutenberg University, Mainz, Germany
E-mail: efferth@uni-mainz.de

The Nobel Prize for Physiology or Medicine 2015 was not only a pleasing honour to Youyou Tu herself for her life-time achievements on artemisinin and malaria therapy, but also to the entire scientific community working on traditional Chinese medicine (TCM) and phytotherapy. Therefore, it did not come as a surprise that the Nobel Prize to Youyou Tu was anticipated with much enthusiasm.

Now, when the celebrations are over and the grey everyday work reality is returning back, it is the right time to address the question what is coming next and how to continue from here. In other words, which sustainable actions are needed to come to long-lasting and significant improvements in TCM and phytotherapy in general for the sake of patients?

It has to be frankly confessed that research and development on artemisinin as malaria medication followed more the rules and strategies of classical pharmacological drug development than the development of a typical phytotherapeutic drug. The process ended with a chemical substance rather than with a standardized herbal product.

The same is true for many other drugs which became established parts of modern pharmacopeias. We all know and like to frequently cited papers of Newman and Cragg [1] stating that a majority of modern drugs are derived in one or the other way from natural sources. Again, these drug developments were inspired by nature, but not phytotherapies in the strictest sense.

At this point, it should be mentioned that detractors emphasize that the Nobel Award Committee in Stockholm did not honour TCM, but the fight against parasitic diseases in tropical countries. We in the field of TCM and phytotherapy should, hence, ask ourselves *"quo vadis, phytotherapy?"*

As a matter of fact, traditional medicine is being applied million times on this globe, and therefore the general conditions are basically different from those of synthetic chemical drugs. This may be an advantage, but represents a disadvantage at the same time, because there is less burning economic pressure to fulfill the strict regulations of the drug-approval authorities. If an herbal preparation is not marketed as drug by a pharmaceutical company, it can be either sold over the counter as dietary supplement without fulfilling any quality control measures or it can be used as therapeutic drug for individual compassionate uses. These practices demonstrate that herbal medicines are popular among patients, but they frequently do not provide sufficient evidence that they are safe and efficacious.

As popular TCM and herbal medicines are among physicians, practitioners and patients all over Asia, as critical they are considered among the medical community in the West. Several reasons can be discussed to explain this contradiction. One problem is certainly that herbal medicine does not belong to the standard repertoire of knowledge that is taught in our medical schools to the students. This is a fatal situation to my point of view. Another critical issue is, however, that the safety and quality of herbal products has still not been proven to the same extent, as it is routinely done for synthetic drugs.

European Directorate for the Quality of Medicines & HealthCare

COUNCIL OF EUROPE CONSEIL DE L'EUROPE

Elaboration of Monographs for TCM herbs by the European Pharmacopoeia

TCM-Working Party
建立传统中药研究团队
Chairman: Gerhard FRANZ

Name	First Name	Country
BAUER	Rudolf	Austria
BILIA	Anna Rita	Italy
DUEZ	Pierre	Belgium
ERDOGAN ORHAN	Ilkay	Turkey
FOURASTE	Isabelle	France
GASSER	Uwe Michael	Germany
GLOWNIAK	Kazimierz	Poland
GUO	De-An	China
HARPUT	Sebnem	Turkey
LAENGER	Reinhard	Austria
LEHMANN	Thomas	Switzerland
REICH	Eike	Switzerland
SOUSSAIN	Robert	France
STOEGER	Erich Andreas	Germany
WANG	Mei	The Netherlands
WANG-TSCHEN	Shu-Yuan	Switzerland
WHALEY	Michael	United Kingdom
WUTHOLD	Kim	Germany

European Directorate for the Quality of Medicines & HealthCare

COUNCIL OF EUROPE CONSEIL DE L'EUROPE

Elaboration of Monographs for TCM herbs for the European Pharmacopoeia
欧洲药典的中草药专著的确立和发展

- >60 Monographs adopted by the Eur. Pharmacopoeia Commission
  欧洲药典委员会已接纳>60篇专著
- Ca. 30 attributed to Specialists
  约30人取得专家资格认证
- Monographs published as drafts in *PHARMEUROPA*
  篇论文作为草案在欧洲药典官网上发表
- Monographs for *General Methods* *通用方法论著:*
  - Chapter on processing: published 加工制作：已发表
  - Test for asristolochic acids: published 马兜铃酸的检测：已发表
  - Test for pyrrolizidine alkaloids: pending 咯烷类生物碱的测试：待定

中药全球化联盟
CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

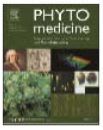
University of Cagliari | **Prof. Enzo Tramontano**

Phytomedicine 23 (2016) 1383–1391

Contents lists available at ScienceDirect

Phytomedicine

journal homepage: www.elsevier.com/locate/phymed



Original article

Sennoside A, derived from the traditional chinese medicine plant *Rheum L.*, is a new dual HIV-1 inhibitor effective on HIV-1 replication

Francesca Esposito[a], Ilaria Carli[b,1], Claudia Del Vecchio[b,1], Lijia Xu[c], Angela Corona[a], Nicole Grandi[a], Dario Piano[a], Elias Maccioni[a], Simona Distinto[a], Cristina Parolin[b,2,**], Enzo Tramontano[a,d,*]

[a] Department of Life and Environmental Sciences, University of Cagliari, Cittadella di Monserrato SS554, 09042, Monserrato, Cagliari, Italy
[b] Department of Molecular Medicine, University of Padova, via Gabelli 63, 35121 Padova, Italy
[c] Institute of Medicinal Plant Development (IMPLAD), 151 Maliamwa North Road Haidian District, 100193 Beijing, China
[d] Genetics and Biomedical Research institute, National Research Council (CNR), Cittadella di Monserrato SS554, 09042, Monserrato, Cagliari, Italy

ARTICLE INFO

Article history:
Received 26 April 2016
Revised 19 July 2016
Accepted 9 August 2016

Keywords:
Sennoside A
HIV-1
Reverse transcriptase
Antiviral activity
Plant extracts
Dual inhibitor

ABSTRACT

Background: Despite the availability of effective antiretroviral therapies, drugs for HIV-1 treatment with new mode of action are still needed. An innovative approach is aimed to identify dual HIV-1 inhibitors, small molecules that can inhibit two viral functions at the same time. Rhubarb, originated from *Rheum palmatum* L. and *Rheum officinale* Baill., is one of the earliest and most commonly used medicinal plants in Traditional Chinese Medicine (TCM) practice. We wanted to explore TCM for the identification of new chemical scaffolds with dual action abilities against HIV-1.

Methods: *R. palmatum* L. and *R. officinale* Baill. extracts along with their main single isolated constituents anthraquinone derivatives were tested on both HIV-1 Reverse Transcriptase (RT)-associated DNA Polymerase (RDDP) and Ribonuclease H (RNase H) activities in biochemical assays. Active compounds were then assayed for their effects on HIV-1 mutated RTs, integrase (IN) and viral replication.

Results: Both *R. palmatum* L. and *R. officinale* Baill. extracts inhibited the HIV-1 RT-associated RNase H activity. Among the isolated constituents, Sennoside A and B were effective on both RDDP and RNase H RT-associated functions in biochemical assays. Sennoside A was less potent when tested on K103N, Y181C, Y188L, N474A and Q475A mutated RTs, suggesting the involvement of two RT binding sites for its antiviral activity. Sennoside A affected also HIV-1 IN activity in vitro and HIV-1 replication in cell-based assays. Viral DNA production and time of addition studies showed that Sennoside A targets the HIV-1 reverse transcription process.

Conclusion: Sennoside A is a new scaffold for the development of HIV-1 dual RT inhibitors.

Sino-Dutch Center for Preventive and Personalized Medicine	Prof. Jan Van der Greef

Publications:

Jan van der Greef, Herman van Wietmarschen, Yan Schroen, Nathalie Babouraj, and Marion Trousselard. Systematic Approaches to Evaluation and Integration of Eastern and Western Medical Practices **Medical Acupuncture** ,Volume 27, Number 5, 2015

Min He, Eduard Van Wijk, Ruud Berger, Mei Wang, Katrin Strassburg, Johannes C. Schoeman, Rob J Vreeken, Herman Van Wietmarschen, Amy C Harms, Thomas Hankemeier, Jan van der Greef. Collagen Induced Arthritis in DBA/1J Mice Associates with Oxylipin Changes in Plasma. **Mediators Inflamm**. 2015;2015:543541. doi: 10.1155/2015/543541.

Min He, Mengmeng Sun, Eduard van Wijk, Herman van Wietmarschen, Roeland van Wijk, Zhihong Wang, Mei Wang, Thomas Hankemeier, Jan van der Greef. A Chinese literature overview on ultra-weak photon emission as promising technology for studying system-based diagnostics. **Complementary Therapies and Medicine** 2016; 25: 20-26

Yan Schroën, Mei Wang, Herman A. van Wietmarschen, Renger Witkamp, Thomas Hankemeier, Tai-Ping Fan, Jan van der Greef. Bridging the seen and the unseen—A systems pharmacology view of the bioactivity of rhizoma Dioscorea nipponica Mankino. **Science** 2015; 350 (6262 Suppl): S66-69

Delayed luminescence: an experimental protocol for Chinese herbal medicines. Sun M, van Wijk R, van Wijk E, Wang M, van Wietmarschen H, Hankemeier T, van der Greef **J. Luminescence**. 2016 Jan 28. doi: 10.1002/bio.3094.

Activities: made major progress in using ultra-low photon emission (UPE) as a new methodology to characterize TCM diagnosis and TCM herbal medicine in the last period.

中药全球化联盟
CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

TCM Research Center Graz, Herbal Medicine, University of Graz	Prof. Rudolf Bauer

Published papers on TCM related topics in 2015 and 2016:

1. Lohberger, B., Kretschmer, N., Bernhart, E., Rinner, B., Stuendl, N., Kaltenegger, H., Kahl, S., Bauer, R., Leithner, A. **25-O-acetyl-23,24-dihydro-cucurbitacin F induces cell cycle G2/M arrest and apoptosis in human soft tissue sarcoma cells.** J Ethnopharmacology 164(2): 265 - 272 (2015)
2. Zhao, Q., Kretschmer, N., Bauer, R., Efferth, T. **Shikonin and its derivatives inhibit the epidermal growth factor receptor signaling and synergistically kill glioblastoma cells in combination with erlotinib.** Int. J. Cancer 137(6): 1446-56 (2015) doi: 10.1002/ijc.29483
3. Leliebre-Lara V, Pferschy-Wenzig EM, Widowitz U, Ortmann S, Lima CN, Bauer R. **Influence of *Navisporus floccosus* (Higher Basidiomycetes) n-Hexane Extract on Arachidonate Metabolism in Vitro.** Int J Med Mushrooms 17(5): 463-9 (2015)
4. Liu R, Heiss EH, Sider N, Schinkovitz A, Gröblacher B, Guo D, Bucar F, Bauer R, Dirsch VM, Atanasov AG. **Identification and characterization of [6]-shogaol from ginger as inhibitor of vascular smooth muscle cell proliferation.** Mol Nutr Food Res. 59(5): 843-52 (2015). doi: 10.1002/mnfr.201400791.
5. Pferschy-Wenzig, E.-M., Bauer, R. **The relevance of pharmacognosy in pharmacological research on herbal medicinal products** Epilepsy Behav. 52: 344-362 (2015) doi: 10.1016/.j.yebeh 2015.05.037.
6. Nikles, S., Heuberger, H., Hilsdorf, E., Schmücker, R., Seidenberger, R., Bauer, R. **Influence of Processing on the Content of Toxic Carboxyatractyloside and Atractyloside and the Microbiological Status of *Xanthium sibiricum* Fruits (Cang'erzi)** Planta Medica 81(12-13): 1213-1220 (2015) DOI: 10.1055/s-0035-1546207
7. Lajter, I., Pan, S.-P., Nikles, S., Ortmann, S., Vasas, A., Csupor-Löffler, B., Forgó, P., Hohmann, J., Bauer, R. **Inhibition of COX-2 and NF-kB1 Gene Expression, NO Production, 5-LOX, and COX-1 and COX-2 Enzymes by Extracts and Constituents of *Onopordum acanthium***
   Planta Medica 81(14): 1270 - 1276 (2015) DOI: 10.1055/s-0035-1546242
8. Hummelsberger, J., Friedl, F., Gaus, W., Kohnen, R., Heuberger, H., Seidenberger, R., Aidelsburger, P., Bauer, R., Heubl, G. **Traditionelle chinesische Arzneitherapie bei Patienten mit chronischer Rhinosinusitis - eine Therapie-beobachtung mit Berücksichtigung der Arzneimittelherkunft** Forsch Komplementärmed. 22(5): 312-319 (2015) DOI:10.1159/000440658
9. Zhao, Q., Assimopoulou, A.N., Klauck, S.M., Damianakos, H., Chinou, I., Kretschmer, N., Rios, J.-L., Papageorgiou, V.P., Bauer, R., Efferth, T. **Inhibition of c-MYC with involvement of ERK/JNK/MAPK and AKT pathways as a novel mechanism for shikonin and its derivatives in killing leukemia cells.** Oncotarget. 6(36): 38934 - 38951 (2015) doi: 10.18632/oncotarget.5380
10. Zou, H.-Q., Lu, G., Liu, Y., Bauer, R., Tao, O., Gong, J.-T., Zhao, L.-Y., Li, J.-H., Ren, Z.-Y., Yan, Y.-H. **Is it possible to rapidly and**

中药全球化联盟
CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

TCM Research Center Graz, Herbal Medicine, University of Graz | Prof. Rudolf Bauer

Published papers on TCM related topics in 2015 and 2016:

1. Lohberger, B., Kretschmer, N., Bernhart, E., Rinner, B., Stuendl, N., Kaltenegger, H., Kahl, S., Bauer, R., Leithner, A. **25-O-acetyl-23,24-dihydro-cucurbitacin F induces cell cycle G2/M arrest and apoptosis in human soft tissue sarcoma cells.** J Ethnopharmacology 164(2): 265 - 272 (2015)
2. Zhao, Q., Kretschmer, N., Bauer, R., Efferth, T. **Shikonin and its derivatives inhibit the epidermal growth factor receptor signaling and synergistically kill glioblastoma cells in combination with erlotinib.** Int. J. Cancer 137(6): 1446-56 (2015) doi: 10.1002/ijc.29483
3. Leliebre-Lara V, Pferschy-Wenzig EM, Widowitz U, Ortmann S, Lima CN, Bauer R. **Influence of *Navisporus floccosus* (Higher Basidiomycetes) n-Hexane Extract on Arachidonate Metabolism in Vitro.** Int J Med Mushrooms 17(5): 463-9 (2015)
4. Liu R, Heiss EH, Sider N, Schinkovitz A, Gröblacher B, Guo D, Bucar F, Bauer R, Dirsch VM, Atanasov AG. **Identification and characterization of [6]-shogaol from ginger as inhibitor of vascular smooth muscle cell proliferation.** Mol Nutr Food Res. 59(5): 843-52 (2015). doi: 10.1002/mnfr.201400791.
5. Pferschy-Wenzig, E.-M., Bauer, R. **The relevance of pharmacognosy in pharmacological research on herbal medicinal products** Epilepsy Behav. 52: 344-362 (2015) doi: 10.1016/.j.yebeh 2015.05.037.
6. Nikles, S., Heuberger, H., Hilsdorf, E., Schmücker, R., Seidenberger, R., Bauer, R. **Influence of Processing on the Content of Toxic Carboxyatractyloside and Atractyloside and the Microbiological Status of *Xanthium sibiricum* Fruits (Cang'erzi)** Planta Medica 81(12-13): 1213-1220 (2015) DOI: 10.1055/s-0035-1546207
7. Lajter, I., Pan, S.-P., Nikles, S., Ortmann, S., Vasas, A., Csupor-Löffler, B., Forgó, P., Hohmann, J., Bauer, R. **Inhibition of COX-2 and NF-kB1 Gene Expression, NO Production, 5-LOX, and COX-1 and COX-2 Enzymes by Extracts and Constituents of *Onopordum acanthium*** Planta Medica 81(14): 1270 - 1276 (2015) DOI: 10.1055/s-0035-1546242
8. Hummelsberger, J., Friedl, F., Gaus, W., Kohnen, R., Heuberger, H., Seidenberger, R., Aidelsburger, P., Bauer, R., Heubl, G. **Traditionelle chinesische Arzneitherapie bei Patienten mit chronischer Rhinosinusitis - eine Therapie-beobachtung mit Berücksichtigung der Arzneimittelherkunft** Forsch Komplementärmed. 22(5): 312-319 (2015) DOI:10.1159/000440658
9. Zhao, Q., Assimopoulou, A.N., Klauck, S.M., Damianakos, H., Chinou, I., Kretschmer, N., Rios, J.-L., Papageorgiou, V.P., Bauer, R., Efferth, T. **Inhibition of c-MYC with involvement of ERK/JNK/MAPK and AKT pathways as a novel mechanism for shikonin and its derivatives in killing leukemia cells.** Oncotarget. 6(36): 38934 - 38951 (2015) doi: 10.18632/oncotarget.5380
10. Zou, H.-Q., Lu, G., Liu, Y., Bauer, R., Tao, O., Gong, J.-T., Zhao, L.-Y., Li, J.-H., Ren, Z.-Y., Yan, Y.-H. **Is it possible to rapidly and noninvasively identify different plants from Asteraceae using applying electronic nose with multiple mathematical algorithms?** Journal of Food and Drug Analysis 23(4): 788–794 (2015) doi:10.1016/j.jfda.2015.07.001
11. Atanasov AG, Waltenberger B, Pferschy-Wenzig EM, Linder T, Wawrosch C, Uhrin P, Temml V, Wang L, Schwaiger S, Heiss EH, Rollinger JM, Schuster D, Breuss JM, Bochkov V, Mihovilovic MD, Kopp B, Bauer R, Dirsch VM, Stuppner H. **Discovery and resupply of pharmacologically active plant-derived natural products: A review** Biotechnol Adv. 33(8): 1582-614 (2015) doi:10.1016/j.biotechadv.2015.08.001
12. Wagner H., Bauer R., Melchart D. **New Analytical Monographs on TCM Herbal Drugs for Quality Proof .**Forsch Komplementmed 23(Suppl 2):16-20 (2016) DOI:10.1159/000444730
13. Waltenberger B, Atanasov AG, Heiss EH, Bernhard D, Rollinger JM, Breuss JM, Schuster D, Bauer R, Kopp B, Franz C, Bochkov V, Mihovilovic MD, Dirsch VM, Stuppner H. **Drugs from nature targeting inflammation (DNTI): a successful Austrian interdisciplinary network project.** Monatshefte für Chemie. 147: 479-491 (2016) doi:10.1007/s00706-015-1653-y.
14. Leliebre-Lara V, Monzote Fidalgo L, Pferschy-Wenzig EM, Kunert O, Nogueiras Lima C, Bauer R. **In Vitro Antileishmanial Activity of Sterols from *Trametes versicolor* (Bres. Rivarden)** Molecules 21(8) pii: E1045 (2016) doi: 10.3390/molecules21081045.

HMPPA
Herbal Medicinal Products Platform Austria

TCM Research Cluster Austria

中國中醫科學院 CHINA ACADEMY OF CHINESE MEDICAL SCIENCES

BUNDESMINISTERIUM FÜR GESUNDHEIT

bmwfw
Bundesministerium für Wissenschaft, Forschung und Wirtschaft

EURASIA-PACIFIC UNINET

3rd Phase of Sino-Austrian TCM Research Projects

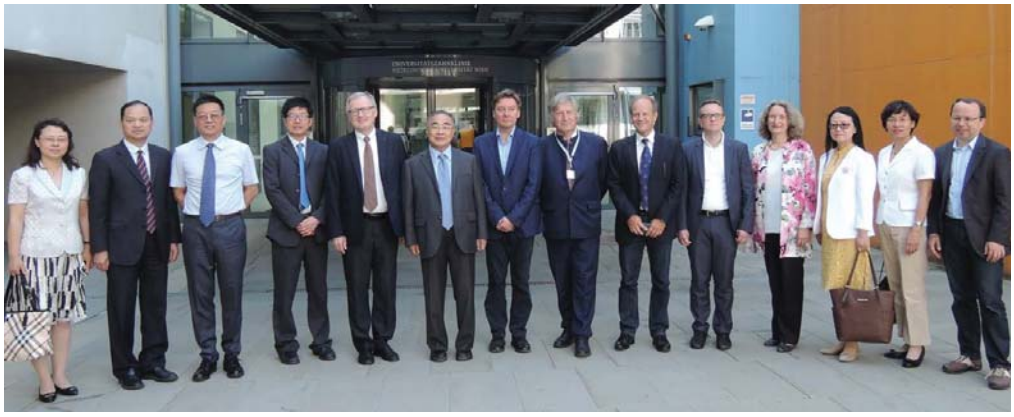
- Overall topic discussed within Austrian partners during a meeting in Vienna on 18. March 2015, and subsequently negotiated with CACMS
- 3. August 2015: Confirmation letter by CACMS to support 3rd Phase
- end of 2015: Application forms and project proposals finalized by Austrian partners and jointly submitted to BMWFW
- 16./17. October 2016: 2nd Phase Final Meeting and Preparatory Meeting for 3rd Phase at CACMS, Beijing

HMPPA
Herbal Medicinal Products Platform Austria

TCM Research Cluster Austria

3rd Phase of Sino-Austrian TCM Research Projects

- 25. April 2016: Confirmation letter by the Austrian Federal Ministry of Science, Research and Economy that 3rd Phase projects will be funded
- 26. April 2016: Cooperation Agreement on Sino-Austrian TCM Research on Lifestyle Related Diseases between China Academy of Chinese Medical Sciences and Herbal Medicinal Products Platform Austria
- 5. Juli 2016: Kick-off Meeting in Vienna



BUNDESMINISTERIUM FÜR GESUNDHEIT

bmwfw
Bundesministerium für Wissenschaft, Forschung und Wirtschaft

EURASIA-PACIFIC UNINET

HMPPA
Herbal Medicinal Products Platform Austria

TCM Research Cluster Austria

3rd Phase of Sino-Austrian TCM Research Projects

Aims of the project

- to investigate and evaluate TCM plants, formulas and treatments for lifestyle related diseases
- nine subprojects with different aspects of TCM research on lifestyle related diseases
- research on quality assessment, as well as metabolic, immune related, and neuromodulatory effects of acupuncture and Chinese herbs

BUNDESMINISTERIUM FÜR GESUNDHEIT

bmwfw
Bundesministerium für Wissenschaft, Forschung und Wirtschaft

EURASIA-PACIFIC UNINET

HMPPA
Herbal Medicinal Products Platform Austria

TCM Research Cluster Austria

BUNDESMINISTERIUM FÜR GESUNDHEIT

bmwfw
Bundesministerium für Wissenschaft, Forschung und Wirtschaft

EURASIA-PACIFIC UNINET

Theory, Methodology, and Structure of TCM in Respect to Lifestyle Related Diseases

Anti-inflammatory potential of TCM drugs – new bioactive compounds and quality issues

Sino-Austrian TCM Research on Lifestyle-Related Diseases – Innovative Acupuncture Research

Sino-Austrian TCM research on lifestyle related diseases

Life Style Associated Diseases - the Potential of TCM and MM for the treatment of colo-rectal cancer

Interaction of Chinese herbal medicine with the human intestinal microbiome in order to treat and prevent lifestyle related diseases

Evaluation of Chinese herbal medicine therapy of lifestyle related diseases: Myocardial infarction, prostate cancer and depression - from biomedical research to translational medicine

Novel analytical tools for the quality assessment of Chinese herbs with metabolic, immune related neuromodulatory effects

Identification of natural products from Paridis rhizoma (Chonglou) as liver X receptor (LXR) and farnesoid X receptor (FXR) ligands

Sino-Austrian TCM research on lifestyle related diseases: Research on the ancient Chinese medicinal formula Fang Feng Tong Sheng as modern therapeutic against gout

HMPPA
Herbal Medicinal Products Platform Austria

TCM Research Cluster Austria

BUNDESMINISTERIUM FÜR GESUNDHEIT

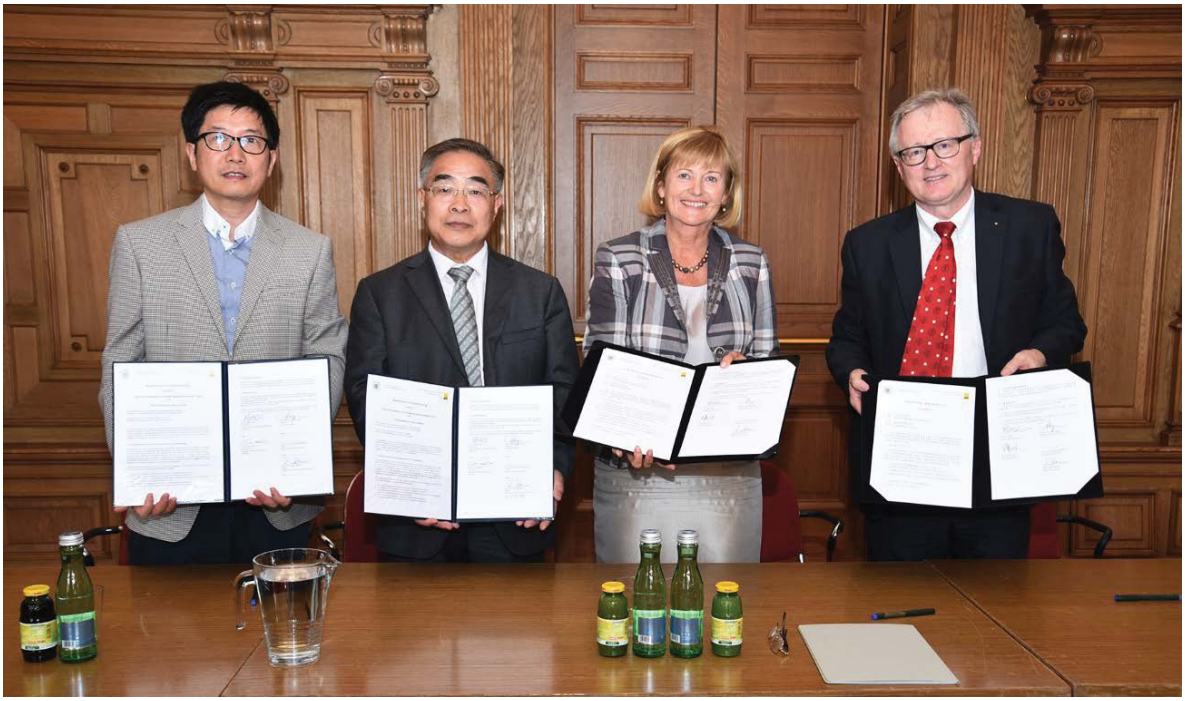
bmwfw
Bundesministerium für Wissenschaft, Forschung und Wirtschaft

EURASIA-PACIFIC UNINET

Sino-Austrian TCM research on lifestyle related diseases

PP	Principal Investigator (Austria)	PI and Project Partners in China	Topic
01	Univ.-Prof. Dr. Friedrich **Wallner**, Sigmund-Freud-University, Vienna	Prof. Jingqing **Hu**, Institute of Basic Theory for Chinese Medicine, CACMS, Prof. Shijie **Xu**, CAMS, Prof. Xiaotong **Ma**, CAMS, Dr. Song **Du**, CAMS	Theory, Methodology, and Structure of TCM in Respect to Lifestyle Related Diseases
02	Univ.-Prof. DDr. Gerhard **Litscher**, TCM Research Center Graz, Medical University of Graz	Peijing **RONG**, Prof. D.C.M. Ph.D., Institute of Acupuncture and Moxibustion, CACMS, Xinyan **GAO**, Assoc.Prof. M.D. Ph.D., Department of Physiology, Institute of Acupuncture and Moxibustion, CACMS, Xiaochun **YU**, Prof. M.D. Ph.D., Institute of Acupuncture and Moxibustion CACMS, Bing **ZHU**, Prof. M.D. Ph.D., Institute of Acupuncture and Moxibustion, CACMS; Hua **WANG**, Prof. M.D. Ph.D., Hubei University of Chinese Medicine, Wuhan, Fengxia **LIANG**, Prof. Ph.D., Institute of Acupuncture and Moxibustion, Hubei University of Chinese Medicine, Wuhan	Sino-Austrian TCM Research on Lifestyle-Related Diseases – Innovative Acupuncture Research
03	Univ.-Prof. Dr. Rudolf **Bauer**, Institute of Pharmaceutical Sciences, TCM Research Center Graz, University of Graz	Prof. Dr. **TONG** Xiaolin, Endocrinology, Guang'anmen Hospital, CACMS, Dr. **TIAN** Jiaxing, Endocrinology, Guang'anmen Hospital, CACMS, Academician Prof. Dr. **HUANG** Luqi, Institute of Chinese Materia Medica, CACMS, Dr. Yanqin **Bian**, Institute of Basic Research in Clinical Medicine, CACMS, Prof. Dr. Xijun **WANG**, Heilongjiang University of Chinese Medicine, Harbin, Prof. Dr. Yong **Liu**, Beijing University of Chinese Medicine	Interaction of Chinese herbal medicine with the human intestinal microbiome in order to treat and prevent lifestyle related diseases
04	Assoc. Univ.-Prof. Dr. Adelheid H. **Brantner**, Institute of Pharmaceutical Sciences / Pharmacognosy, University of Graz	Prof. Baolin **Bian**, Institute of Chinese Materia Medica, CACMS	Sino-Austrian TCM research on lifestyle related diseases: Research on the ancient Chinese medicinal formula Fang Feng Tong Sheng as modern therapeutic against gout
05	Univ.-Prof. Dr. Verena **Dirsch**, Department of Pharmacognosy, University of Vienna	Prof Dr. Huimin **Gao**, Institute of Chinese Material Medica, CACMS	Identification of natural products from Paridis rhizoma (Chonglou) as liver X receptor (LXR) and farnesoid X receptor (FXR) ligands
06	Univ.-Prof. Dr. Christian **Huck**, O. Univ.-Prof. Dr. Günther **Bonn**; Institute of Analytical Chemistry and Radio-chemistry, CCB-Center of Chemistry and Biomedicine, University of Innsbruck	Prof. Dr. Bin **Yang**, Institute of Chinese Materia Medica, CACMS	Novel analytical tools for the quality assessment of Chinese herbs with metabolic, immune related neuromodulatory effects
07	Assoc. Prof. Dr. Yan **Ma**, Division of Comparative Immunology and Oncology, Department of Pathos- physiology and Allergy Research, Center of Pathophysiology, Infectiology & Immunology, Vienna General Hospital, Medical University of Vienna	Prof. Dr. Jiping **Fan**, CACMS , Prof. Dr. Dazhuo **Shi**, Xiyuan Hospital, CACMS , Assoc. Prof. Lixia **Lou**, Beijing Dongzhimen Hospital, Beijing University of Chinese Medicine, Dr. Lu **Liu**, Beijing Traditional Chinese Medicine Hospital, Beijing Capital Medical University	Evaluation of Chinese herbal medicine therapy of lifestyle related diseases: Myocardial infarction, prostate cancer and depression - from biomedical research to translational medicine
08	Assoc. Prof. Dipl. Ing. Dr. Wolf Dieter **Rausch**, Institute for Chemistry and Biochemistry, University of Veterinary Medicine, Vienna	Dr. Shanshan **Guo**, Institute of Chinese Materia Medica, CACMS , Prof. Cai Peking University Health Center, Prof. Weimin **Tong**, Department of Pathology, Center for Experimental Animal Research, Institute of Basic Medical Sciences, CACMS and Peking Union Medical College, Prof. Baoquan **Bao**, Inner Mongolian Medical University, Hohot	Life Style Associated Diseases - the Potential of TCM and MM for the treatment of colorectal cancer
09	Univ.-Prof. Dr. Hermann **Stuppner**, Institute of Pharmacy/ Pharmacognosy, CCB-Center of Chemistry and Biomedicine University of Innsbruck	Prof. Dr. Jiannong **Wang**, Xiyuan Hospital, CACMS	Anti-inflammatory potential of TCM drugs – new bioactive compounds and quality issues

5. Juli 2016: University of Graz signed MoU with China Academy of Chinese Medical Sciences



The International Society of Ethnopharmacology organized its 16th congress under the chairmanship of Prof. Rudi Bauer in Yulin, Guangxi Zhuang Autonomous Region, China during May 16-18, 2016

中药全球化联盟
CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

TCM Research Center Graz, Herbal Medicine, University of Graz | Prof. Rudolf Bauer

SUMMER SCHOOL FOR CHINESE HERBAL MEDICINE
尊重·合作
China, Nanning
2016
中国-奥地利中草药
夏令营
SINO-AUSTRIAN

中药全球化联盟
CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

HanseMerkur Center for TCM at the University Medical Center Hamburg Eppendorf

Activities since August 2015

Besides the participation in the Science TCM supplement we were able to publish the verification of the neuroprotective effects of Huang Lian, Rhizoma coptidis in a MPP+/MPTP cell and mouse model.

Furthermore we could finalize the experiments on Chinese herbs for the regulation of brown fat activity and on herbal extracts for cutaneous wound healing. We are now working on the first draft of papers for both projects.

In the acupuncture field, we finished the clinical research on adheseive capsulitis (frozen shoulder) and just recently submitted the paper.

The large ACUDIN and ACUCIN studies have been finished. In the ACUDIN study 3x60 patients with diabetic neuropathy were treated in three groups (needle acupuncture, laser-acupuncture, laser placebo). In the ACUCIN study 60 patients with Chemotherapy induced neuropathy were treated in a cross over design. We are now working on the first drafts of papers for both projects.

An experimental acupuncture study was performed with healthy volunteers using press tack acupuncture for a double blind design. We measured the temporal dynamics of acupuncture induced analgesia against artificial pain. Beside clinical outcomes, Heart rate variability and EEG patterns were measured. We are now working on the first draft of a paper.

汉堡大学附属埃彭多夫医院之汉萨美安中医中心

HanseMerkur Versicherungsgruppe | Universitätsklinikum Hamburg-Eppendorf | Freie und Hansestadt Hamburg

中药全球化联盟
CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

HanseMerkur Center for TCM
at the University Medical Center Hamburg Eppendorf

Neuroprotective Effect of Coptis chinensis in MPP+ and MPTP-Induced Parkinson's Disease Models

The American Journal of Chinese Medicine · July 2016

Neuroprotective effect of Coptis chinensis in MPP+ induced in-vitro PD model

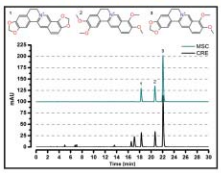


Fig 2: High-performance liquid chromatogram of CRE and mixed standard compounds (MSC). 1 coptisine, 2 palmatine, 3 berberine.

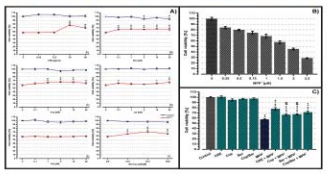


Fig 3: Effect of CRE and CRE main alkaloids on cell viability in SH-SY5Y cells. Cells were pretreated for 24 h with (0-50 µg/ml) CRE, (0-20 µM) of Ber, Cop, Jat, Pal or a combination of Ber and Cop (Ber/Cop) before the cells were exposed for 24 h either to medium or 1.5 mM MPP^+ A). B) shows the effect of 24 h treatment with different concentrations of MPP^+. A summary for the most effective treatments is given in C). Results represent mean cell viability ± SEM of four independent experiments conducted in quadruplicates. *P<0.05, **P<0.01 vs. medium (C) – or MPP^+ control (A). ## indicates P<0.01 vs. CRE.

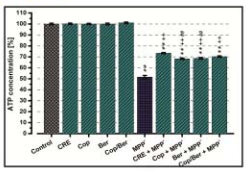


Fig 4: Effect of CRE and CRE main alkaloids on ATP concentration in SH-SY5Y cells. Cells were pretreated for 24 h with 25 µg/ml CRE, 5 µM Ber, 10 µM Cop or a combination of Ber and Cop (5 µM Ber + 10 µM Cop) before the cells were exposed for 24 h either to medium (control) or 1.5 mM MPP^+. Results were normalized to the medium control which was set to 100 %. Each bar shows mean ATP concentration ± SEM of four independent experiments conducted in quadruplicates. **P<0.01 vs. medium control. ++P<0.01 vs. MPP+ control and ##P<0.01 vs. CRE.

Neuroprotective effect of Coptis chinensis in MPTP induced in-vivo PD model

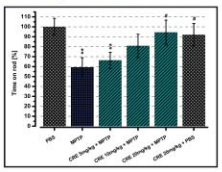


Fig 5: Effect of CRE on MPTP induced movement disorder. Results represent the mean percentage ± SEM of the time the mice spend on the rod. Data normalized to the PBS control. Note that CRE significantly attenuated MPTP induced movement disorders with strong dose dependency. **P<0.01 vs. PBS control and # indicates P<0.05 vs MPTP control.

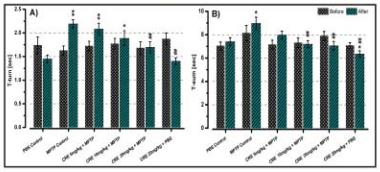


Fig 6: Effect of CRE on movement disorders measured by the pole test. Results represent the mean time the mice needed to turn completely (t-turn, A) and the total time the animal required to climb down the pole (t-sum, B). Gray bars represent mean time ± SEM before MPTP or PBS control treatment and the blue bars show the results after treatment. Data shows that treatment with CRE significantly improves t-turn and t-sum compared to the MPTP control. * and ** indicates significant differences vs PBS control (P<0.05 and 0.01, respectively). ## indicates P<0.01 vs MPTP control

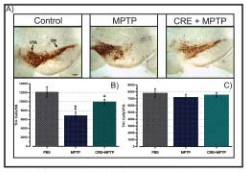


Fig 7: Effect of CRE on TH+ cells in the substantia nigra (SN) and ventral tegmental area (VTA). A) representative pictures of brain slices. Brown stained cells are TH+. Results represent the mean TH+ cells in the SN (B) and VTA (C) ± SEM. ** indicates significant differences vs PBS control (P<0.01). + indicates P<0.05 vs MPTP control.

汉堡大学附属埃彭多夫医院之汉萨美安中医中心

HanseMerkur Versicherungsgruppe · Universitätsklinikum Hamburg-Eppendorf · Freie und Hansestadt Hamburg

中药全球化联盟
CONSORTIUM FOR GLOBALIZATION OF CHINESE MEDICINE

HanseMerkur Center for TCM
at the University Medical Center Hamburg Eppendorf

Publications and ongoing Projects since August 2015

Publications:

- **Neuroprotective Effect of Coptis chinensis in MPP+ and MPTP-Induced Parkinson's Disease Models** The American Journal of Chinese Medicine · July 2016
- **Hypothesis-driven screening of Chinese herbs for compounds that promote neuroprotection**. Science 350(6262 Suppl):S69-S71 · November 2015

Ongoing projects:

- **Immediate pain relief in adhesive capsulitis by acupuncture using press-tacks**. A randomized controlled double-blinded study - submitted
- **ACUDIN**: 3x60 patients with diabetic neuropathy, needle acupuncture, laser-acupuncture, laser placebo. First draft of paper.
- **ACUCIN** 60 patients with Chemotherapy induced neuropathy. Needle acupuncture. First draft of paper.
- **Chinese herbal extracts and the regulation of brown fat activity**. First draft of paper
- **Chinese herbal extracts for cutaneous wound healing.** First draft of paper
- **Temporal dynamics of acupuncture induced analgesia**. Press-Tack Acupuncture, double blind experimental study with artifical pain, EEG. First draft of paper

汉堡大学附属埃彭多夫医院之汉萨美安中医中心

HanseMerkur Versicherungsgruppe · Universitätsklinikum Hamburg-Eppendorf · Freie und Hansestadt Hamburg

Outlook

The 6th GP-TCM RA Annual Meeting will be held in **Kew Gardens** at the beginning of July 2017.