



Current affiliations

Laboratory of Biomedical Analysis and Metabolomics,
School of Pharmaceutical Sciences, University of Geneva,
Switzerland

Institute of Pharmaceutical Sciences of Western
Switzerland (ISPSO), University of Geneva, Switzerland

Contact

isabel.meister@unige.ch

WORK EXPERIENCE

Scientist and lecturer in metabolomics applied to human toxicology

August 2021 – present

Geneva, Switzerland

- LC-MS-based untargeted metabolomics for toxicology studies

Scientist (postdoc) in molecular phenotyping of non-communicable diseases

April 2017 – February 2021

Maebashi, Japan

- High-throughput LC-MS-based untargeted metabolomics methods for human urine
- Urine and serum metabolomics measurements, analysis and interpretation in a broncho-pulmonary dysplasia clinical cohort from Karolinska Hospital, Stockholm
- Serum metabolomics in mice investigating the effects of high-fat diet
- Longitudinal health monitoring using untargeted metabolomics of urine and dried blood spots in combination with digital health tracker data (prospective study, 1-year weekly monitoring of 3 healthy volunteers)

Scientist (postdoc) in pharmacokinetics of antiparasitic drugs at SwissTPH

July 2015 – March 2017

Basel, Switzerland

- Data analysis of a phase II clinical trial of tribendimidine in Laos in collaboration with Mahidol University, Thailand, for PK-PD modelling (Meister *et al.* 2019, Antimicrob Agents Chemother)
- Data analysis of a phase II clinical trial of praziquantel in Laos in collaboration with Certara® for PK modelling (2 articles in preparation)

PhD student in drug development against infectious diseases at SwissTPH

January 2012 – June 2015

Basel, Switzerland

- Method development of targeted LC-MS analysis of praziquantel and its main metabolites in plasma, whole blood and dried blood spots (Meister *et al.*, J Pharmaceut Biomed, 2016)
- Method development of targeted LC-MS analysis of peroxide derivatives in sheep plasma and bile (Meister *et al.*, 2013, Vet Parasitol)
- Non-compartmental pharmacokinetic analyses (Meister *et al.*, PLoSNTDs, 2016)
- *In vitro* and *in vivo* pharmacological assays for the development of anti-parasitic drugs (Meister *et al.*, 2014, Antimicrob Agents Chemother)

Scientific assistant in molecular parasitology at Humboldt Universität zu Berlin

September 2010 – July 2011

Berlin, Germany

Immunological studies with the parasite *Eimeria falciformis* in the mouse

Scientific assistant at the Natural History Museum of Lausanne

July 2007 (1 month)

Lausanne, Switzerland

Identification of aquatic insects for the collections of the Museum

EDUCATION

2012 – 2015 **PhD in Biology** Unit of Helminth Drug Development, Dpt. Medical Parasitology and Infection Biology, SwissTPH and University of Basel, Switzerland

Pharmacological and pharmacokinetic studies on trematocidal drugs: praziquantel and two synthetic peroxide candidates (supervision Prof. J. Keiser)

2008 – 2011 **MSc in Biology of Parasites and Ecoethology** University Neuchâtel, Switzerland, research project at the University of Los Andes, Bogota, Colombia

*Fluctuating asymmetry to assess developmental stability and modularity in *Rhodnius prolixus* wings: response to infection with *Trypanosoma cruzi* and comparison with a temperature stress* (supervision Profs. F. Guhl and B. Betschart)

2005 – 2008 **BSc in Biology** University of Lausanne, Switzerland

SKILLS

Project management skills

- Scientific: study design, data handling, reporting results (manuscripts, talks)
- Financial: grant writing, budget, financial reports
- Collaborative: working in international and pluri-disciplinary teams (scientific, medical, industrial), organization of scientific events
- Other: supervision/education of junior staff, set-up of a new lab

Lab skills

- untargeted metabolomics data acquisition (implementation of LC-MS methods)
- untargeted metabolomics data processing (spectral libraries, MS drift correction)
- data analysis (data cleaning/visualisation, uni/multivariate analyses, kinetic analyses)
- LC-MS sample preparation techniques (e.g. urine, blood, dried blood spots, bile)
- LC-MS analyte quantification methods (following FDA regulations)
- technical maintenance of LC-MS systems
- parasite culture / life cycle maintenance (medium preparation, sterile work)
- *in vivo* experiments in rodents (animal experiment permit)

Languages

French and Spanish: native

English: full professional proficiency

German: good professional proficiency

Japanese : basic level

Others

Superior certificate of piano (acceptance in professional level, June 2013)

PUBLICATIONS

2020

I. Meister, P. Zhang, A. Sinha, C. M. Sköld, Å. M. Wheelock, T. Izumi, R. Chaleckis, C. E. Wheelock. *High-Precision Automated Workflow for Urinary Untargeted Metabolomic Epidemiology*, *Analytical Chemistry*, 2020, <https://doi.org/10.1021/acs.analchem.1c00203>

R. Adbalkder, R. Chaleckis, I. Meister, P. Zhang, C. E. Wheelock, K. Kamei, Untargeted LC-MS metabolomics for the analysis of micro-scaled extracellular metabolites from hepatocytes, *Analytical Sciences*, 2020, 20N032

I. Tada, R. Chaleckis, H. Tsugawa, I. Meister, P. Zhang, N. Lazarinis, B. Dahlén, C. E. Wheelock, and M. Arita, *Correlation-based Deconvolution (CorrDec) to generate high quality MS2 spectra from data independent acquisition in multi-sample studies*, *Analytical Chemistry*, 2020, 92 (16)

2019

I. Meister*, P. Assawasuwannakit*, F. Vanobberghen, M. A. Penny, P. Odermatt, S. Sayasone, J. Huwyler, J. Tarning, J. Keiser, *Pooled population pharmacokinetic analysis of tribendimidine for the treatment of *Opisthorchis viverrini* infections*, *Antimicrobial agents and chemotherapy*, 2019, 63 (4) *co-first authors

R. Chaleckis, I. Meister, P. Zhang, C. E. Wheelock, *Challenges, progress and promises of metabolite annotation for LC-MS-based metabolomics*, *Current opinion in biotechnology*, 2019, 55, 44-50

I. Tada, H. Tsugawa, I. Meister, P. Zhang, R. Shu, R. Katsumi, C. E. Wheelock, M. Arita, R. Chaleckis, *Creating a Reliable Mass Spectral-Retention Time Library for All Ion Fragmentation-Based Metabolomics*, *Metabolites*, 2019, 9 (11)

P. Zhang, M. Arora, R. Chaleckis, T. Isobe, M. Jain, I. Meister, E. Melén, M. Perzanowski, F. Torta, M. R. Wenk, C. E. Wheelock, *Tackling the Complexity of the Exposome: Considerations from the Gunma University Initiative for Advanced Research (GIAR) Exposome Symposium*, *Metabolites*, 2019, 9 (6)

R. Chaleckis, K. Ohashi, I. Meister, S. Naz, C. E. Wheelock, *Metabolomic analysis of yeast and human cells: latest advances and challenges*, *Yeast Systems Biology*, 2019, 233-245

2018

S. Sayasone, J. Keiser, I. Meister, Y. Vonghachack, S. Xayavong, K. Sengngam, K. Phongluxa, J. Hattendorf, P. Odermatt, *Efficacy and safety of tribendimidine versus praziquantel against *Opisthorchis viverrini* in Laos: an open-label, randomised, non-inferiority, phase 2 trial*, *The Lancet Infectious Diseases*, 2018, 18 (2), 155-161

R. Chaleckis, S. Naz, I. Meister, C. E. Wheelock, *LC-MS-Based Metabolomics of Biofluids Using All-Ion Fragmentation Acquisition*, *Clinical Metabolomics*, 2018, 45-58

J. Kovač, I. Meister, A. Neodo, G. Panic, J. T. Coulibaly, C. Falcoz, J. Keiser, *Pharmacokinetics of praziquantel in *Schistosoma mansoni*- and *Schistosoma haematobium*-infected school- and preschool-aged children*, *Antimicrobial agents and chemotherapy*, 2018, 62 (8)

J. Kovač, G. Panic, A. Neodo, I. Meister, J. T. Coulibaly, J. D. Schulz, J. Keiser, *Evaluation of a novel micro-sampling device, Mitra™, in comparison to dried blood spots, for analysis of praziquantel in *Schistosoma haematobium*-infected children in rural Côte d'Ivoire*, *Journal of pharmaceutical and biomedical analysis*, 2018, 151, 339-346

2016

I. Meister, J. Kovac, U. Duthaler, P. Odermatt, J. Huwyler, F. Vanobberghen, S. Sayasone, J. Keiser, *Pharmacokinetic study of praziquantel enantiomers and its main metabolite R-trans-4-OH-PZQ in plasma, blood and dried blood spots in Opisthorchis viverrini-infected patients*, *PLoS neglected tropical diseases*, 2016, 10 (5)

I. Meister, A. Leonidova, J. Kovač, U. Duthaler, J. Keiser, J. Huwyler, *Development and validation of an enantioselective LC-MS/MS method for the analysis of the anthelmintic drug praziquantel and its main metabolite in human plasma, blood and dried blood spots*, *Journal of pharmaceutical and biomedical analysis*, 2016, 118, 81-88

S. Sayasone, I. Meister, J. R. Andrews, P. Odermatt, Y. Vonghachack, S. Xayavong, K. Sengnam, K. Phongluxa, J. Hattendorf, I. I. Bogoch, J. Keiser, *Efficacy and Safety of Praziquantel Against Light Infections of Opisthorchis viverrini: A Randomized Parallel Single-Blind Dose-Ranging Trial*, *Clinical Infectious Diseases*, 2017, 64 (4), 451-458

I. I. Bogoch, S. Sayasone, Y. Vonghachack, I. Meister, J. Utzinger, P. Odermatt, J. R Andrews, J. Keiser, *Diagnosis of Opisthorchis viverrini Infection with Handheld Microscopy in Lao People's Democratic Republic*, *The American journal of tropical medicine and hygiene*, 2016, 94 (1), 158-160

2013-2015

O. Braissant, J. Keiser, I. Meister, A. Bachmann, D. Wirz, B. Göpfert, G. Bonkat, I. Wadsö, *Isothermal microcalorimetry accurately detects bacteria, tumorous microtissues, and parasitic worms in a label-free well-plate assay*, *Biotechnology journal*, 2015, 10 (3), 460-468

I. Meister, K. Ingram-Sieber, N. Cowan, M. Todd, M. N Robertson, C. Meli, M. Patra, G. Gasser, J. Keiser, *Activity of praziquantel enantiomers and main metabolites against Schistosoma mansoni*, *Antimicrobial agents and chemotherapy*, 2014, 58 (9), 5466-5472

I. Meister, U. Duthaler, J. Huwyler, L. Rinaldi, A. Bosco, G. Cringoli, J. Keiser, *Efficacy and pharmacokinetics of OZ78 and MT04 against a natural infection with Fasciola hepatica in sheep*, *Veterinary parasitology*, 2013, 198 (1-2), 102-110

In preparation

I. Meister, P. Zhang, C. Gómez, A. Checa, R. Chaleckis, T. Izumi, P. Um-Bergström, E. Berggren-Broström, E. Melén, M. Sköld, A. Wheelock, C. E. Wheelock, *Metabolomics integration reveals molecular signatures associated with bronchopulmonary dysplasia (BPD) and birth-term*

I. Meister, J. Kovač, J. Brussee, J. Coulibaly, S. Sayasone, J. Keiser, *Pharmacokinetics of praziquantel enantiomers and its main metabolite R-trans-praziquantel in Preschool- and School-Aged African Children Infected with Schistosoma mansoni and S. haematobium and Lao Adults Infected with Opisthorchis viverrini*

C. Falcoz*, I. Meister*, J. Kovač*, S. Guzy, J. Coulibaly, S. Sayasone, D. Wesche, J. Keiser, *R-Praziquantel Integrated Population Pharmacokinetics in Preschool- and School-Aged African Children Infected with Schistosoma mansoni and S. haematobium and Lao Adults Infected with Opisthorchis viverrini* *co-first authors

P. Zhang, C. Carlsten, R. Chaleckis, J. Martin, I. Meister, K. Hanhineva, M. Huang, V. Koistinen, H. Tsugawa, T. Woodruff, D. Walker, R. Wright, C. E. Wheelock, *Proceedings of the 2nd Gunma Initiative for Advanced Research (GIAR) Exposome Symposium: Defining the Scope and Research Needs for Incorporating Exposomics into Human Health*

RESEARCH GRANTS AND FELLOWSHIPS

Japan Society for the Promotion of Science Postdoctoral fellowship

Funding of my postdoc project at KI-Gunma University (Nov. 2017- Nov. 2019)

- JPY 8'688'000.- (maintenance allowance) + 2'400'000.- (research funds)

Marie Skłodowska Curie Individual Fellowship (IDRAM 747676)

Rejected in favor of the JSPS fellowship

Novartis University Basel Excellence Scholarship for Life Sciences

Funding of my postdoc project at SwissTPH (Nov. 2015)

- CHF 67'000.-

The Janggen-Pöhn Foundation and The Werenfels Fonds of the University of Basel

Contributions to my PhD thesis expenses (2014-2015)

- CHF 12'000.- and 4'000.- respectively

The Swiss Occidental Leonardo

Support of my living expenses during Humboldt Universität internship (Sept. 2010)

- CHF 7'500.-

The Fonds Wuthrich et Mathey-Dupraz

Contribution to my Master thesis expenses (Sept. 2009)

- CHF 2'000.-

TEACHING / MENTORING EXPERIENCE

Protein chemistry course for PhD students

Oct 2017, Oct. 2018, Oct. 2019, Oct. 2020 (3 x 3 days)

Maebashi, Japan

Lab practice coordination (task shared with R. Chaleckis, N. Ohshima and P. Zhang)

Basic Research Training Course for medical students

July 2017 (1 month)

Maebashi, Japan

Supervision of short research projects for 2 students (task shared with R. Chaleckis)

Bachelor block course in Infection Biology at Swiss TPH

Nov. 2016 (2 weeks)

Basel, Switzerland

Lab practice coordination (task shared with V. Pasche, in German/English)

Bachelor block course in Infection Biology at Swiss TPH

Nov. 2015 (1.5 h lecture)

Basel, Switzerland

Lecture for Master students : *Medikamente gegen Schistosomiasis* (in German)

Bachelor block course in Infection Biology at Swiss TPH

Nov. 2014 (2 weeks)

Basel, Switzerland

Lab practice coordination (task shared with G. Panic, in German/English)

Substitute high-school teacher

Oct. – Nov. 2011 (2 months)

Vevey, Switzerland

Teaching French, History and German (in French)

Substitute high-school teacher

Feb. 2009 (1 month)

Vevey, Switzerland

Teaching Latin, French and History (in French)

SERVICE AND OUTREACH

Organizer

23 – 24 Oct. 2018 and 12 – 14 Nov. 2019

Maebashi, Japan

1st and 2nd GIAR International Exposome Symposium

Member of the postdoc exchange platform at SwissTPH

Jan. 2016 – Dec.2016

Basel, Switzerland

creation of a postdoc handbook

Organizer

6 – 10 Sept. 2015

Basel, Switzerland

9th European Congress on Tropical Medicine and International Health

Reviewer

July 2015 – current

Acta Tropica (4 manuscripts reviewed), Molecules (2 manuscripts reviewed)

PhD student representative at SwissTPH

Jan. 2013 – Dec.2014

Basel, Switzerland

welcome/support, organisation of student sitting space, meetings and tasks at institutional events

PRESENTATIONS

Oral presentations

I. Meister et al., *An automated high-precision workflow for untargeted LC-MS-based urinary metabolomic epidemiology*, **Metabolomics Society Meeting**, Beijing, China (28 Oct. 2020)

I. Meister et al., *Urinary metabolomics identifies molecular signatures associated with bronchopulmonary dysplasia (BPD) and birth-term*, **1st LUNAPRE workshop**, Stockholm, Sweden (5 Sept. 2019)

I. Meister, S. Sayasone, K. Phongluxa, P. Odermatt, J. Huwyler, J. Keiser, *Praziquantel: novel insights from bench and field*, **24. Annual Meeting of the Paul-Ehrlich Society**, Weimar, Germany (16-18 Oct. 2014)

I. Meister, S. Sayasone, K. Phongluxa, P. Odermatt, J. Huwyler, J. Keiser, *Praziquantel against Opisthorchis viverrini: the dried blood spot advantage*, **Monday Seminar of the SwissTPH**, Nov. 2014, Basel Switzerland

Poster Presentations

I. Meister et al., *Urinary metabolomics identifies molecular signatures associated with bronchopulmonary dysplasia and birth-term*, **Metabolomics Society Meeting**, The Hague, The Netherlands (23-27 June 2019)

I. Meister, R. Chaleckis, P. Zhang, T. Izumi, M. Sköld, A. Wheelock, C. E. Wheelock, *Urine metabolomics of Lung Obstruction in Adulthood of Prematurely born (LUNAPRE cohort)*, **Gunma Female Researcher Assembly**, Maebashi, Japan (27 Sept. 2018)

R. Chaleckis, I. Meister, P. Zhang, C. E. Wheelock, *Defining health baseline through metabolomics*, **Vita Scientia**, Vilnius, Lithuania (3 Jan. 2018)

R. Chaleckis, I. Tada, I. Meister, P. Zhang, C. E. Wheelock, *Metabolomics platform for population phenotyping*, **12th Metabolome Symposium**, Tsuruoka, Japan (17-19 Oct. 2018)

I. Meister et al., *Population pharmacokinetics of praziquantel in patients infected with the liver fluke Opisthorchis viverrini in Lao PDR*, **Annual Research Meeting of the Department of Pharmaceutical Sciences**, Basel, Switzerland (10 Feb. 2016)

I. Meister et al., *Population Pharmacokinetics of the Novel Anthelmintic Tribendimidine in Opisthorchis viverrini Infected Patients in Lao PDR*, **9th European Congress on Tropical Medicine and International Health**, Basel, Switzerland (6-10 Sept. 2015)

J. Kovač, A. Leonidova, I. Meister, G. Panic, J. Coulibaly, J. Huwyler, J. Keiser, *Praziquantel dose-finding and pharmacokinetic studies in school- and preschool-aged children infected with S. mansoni*, **9th European Congress on Tropical Medicine and International Health**, Basel, Switzerland (6-10 Sept. 2015)

I. Meister et al., *Population Pharmacokinetics of the Novel Anthelmintic Tribendimidine in Opisthorchis Viverrini Infected Patients in Lao PDR*, **7th Swiss Pharma Day**, Bern, Switzerland (20 Aug. 2014)