

KHALED ABASS

SPECIALIZATION:

Human health and climate change; Epidemiology; Environmental Toxicology

RESEARCH INTERESTS:

Endocrine-disrupting chemicals, New emerging contaminants, Environmental pollution; Human exposure and health outcomes, Toxicokinetics and Toxicodynamics. Gene modulations, Prenatal exposure. Micro and nano plastics

CONTACT

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Google scholar: <https://scholar.google.com/citations?user=X9wykPwAAAAJ>

EDUCATION

- Certified European Registered Toxicologist, Federation of European Toxicologists (EUROTOX), Basel, Switzerland
- PhD in Toxicology, Faculty of Medicine, University of Oulu, Finland

EMPLOYMENT HISTORY

- 2017 – 2023: Senior Research Fellow (Environmental Toxicology) Faculty of Medicine, University of Oulu, Finland
- 2014 – Present: Associate Professor (Docent), Faculty of Veterinary Medicine, University of Helsinki, Finland
- 2015-2016: Toxicologist, Institute of Biomedicine, University of Oulu, Finland
- 2011-2014 Postdoctoral Fellow, Center for Arctic Medicine, University of Oulu, Finland
- 2011 Postdoctoral Fellow, Pharmacology & Toxicology Unit, University of Oulu, Finland
- 2007-2010 Researcher, Pharmacology & Toxicology department, University of Oulu, Finland
- 2005 – 2006 Research assistant, Pharmacology & Toxicology department, University of Oulu, Finland
- 2001-2005 Instructor/Teaching, Department of Pesticides, Menoufia University, Egypt

PROFESSIONAL ACTIVITIES

- US-Food Drug Administration (FDA) - GRAS (Generally Recognized as Safe) Expert Panelist
- Designated Toxicologist from Finland to the Arctic Monitoring and Assessment programme Mercury

Expert Group of the Arctic Council.

- Designated Toxicologist from Finland to Human Health Assessment working group and Arctic Monitoring and Assessment Programme of the Arctic Council since 2014.
- Multiple deliverables, milestones and reports for several EU-funded projects and national projects.
- Lead author in human health assessment reports within Arctic Monitoring and Assessment program 2015 and 2021
- Performed toxicological assessment of herbal medicines and botanical products in connection with European Medicine Agency, Committee of Herbal Medicinal Products, London, United Kingdom

Journal Reviewer

- Toxicology Letters, ISSN: 0378-4274, Publisher: Elsevier
- Pesticides Biochemistry and Physiology, ISSN: 0048-3575, Publisher: Elsevier
- Food and Chemical Toxicology, ISSN: 0278-6915, Publisher: Elsevier
- Chemosphere, ISSN: 0045-6535, Publisher: Elsevier
- Environmental Toxicology, ISSN: 1522-7278, Publisher: Wiley
- Journal of Hazardous Materials, ISSN: 0304-3894, Publisher: Elsevier
- Journal of Pharmacy and Pharmacology, ISSN: 2042-7158, Publisher: Elsevier
- Xenobiotica, ISSN: 0049-8254, Publisher: Taylor & Francis

Invited speaker (last 5 years)

- The 4th International Electronic Conference on Environmental Research and Public Health — Climate Change and Health in a Broad Perspective, 2022
- One Health - One Future Fairbanks, USA 2021
- 2019, 10th NUNAMED – Conference on Medicine and Health in Greenland. Nuuk, Greenland
- AMAP-Human Health expert group meeting & Problems of health maintenance and sanitary-epidemiological wellbeing provision of Arctic populations, St. Petersburg, Russia, 2019
- One Arctic - One Health Conference, Oulu, Finland, 2019
- 2019, 12th Symposium on Cold Regions Development ISCORDER. Oulu, Finland
- In vitro comparative metabolism studies in Regulatory Pesticide Risk Assessment" European Food Safety Authority, Parma, Italy. 2018
- Human Toxicology & Environmental Medicine Symposium; Centre for Arctic Health, Aarhus University, Aarhus, Denmark, 2018

Additional training

- Health risk assessment of reproductive toxicity and endocrine disruptors, Karolinska Institute, Stockholm, Sweden,
- 2018.
- Computational toxicology - methods and applications, Karolinska Institute, Stockholm, Sweden, 2018
- Environmental Toxicology, Chulabhorn institute, Bangkok, Thailand, 2017
- International Training Course on Environmental and Human Health Risk Assessment and Risk Management of Toxic Chemicals, Chulabhorn institute, Bangkok, Thailand, 2016
- Juvenile Toxicity Studies, Defining, and Overcoming the Challenges, American College of Toxicology, USA, 2015

- Selection and Use of Non-Rodent Species for Nonclinical Safety Assessment—Benefits, Pitfalls, and Caveats American College of Toxicology, USA, 2015
- Computer modeling of toxicokinetics and cellular signaling pathways, Karolinska Institute, Stockholm, Sweden, 2013
- Health Risk Assessment – principles and applications, Karolinska Institute, Stockholm, Sweden, Karolinska Institute, Stockholm, Sweden, 2012
- Modelling the impact of global climate change on the environmental fate of organic substances Stockholm University, Sweden, 2012
- Competence to perform animal experiments in Finland according to Finnish legislation on animal experiments and the recommendations of the Federation of European Laboratory Animal Science Association (FELASA)- Finland, Oulu University, Finland, 2010

Formal University and pedagogical training

- Training for tutor teacher; Oulu University, Finland
- Basics of University Pedagogy; Oulu University, Finland

PROFESSIONAL MEMBERSHIPS

- Member of American college of Toxicology, USA
- Member of European Society of Toxicology in vitro (ESTIV)
- Member of Finnish Society of Toxicology (FST)
- Member of International Society for the study of Xenobiotics (ISSX)
- Member of The American Association for the Advancement of Science

RESEARCH PROJECTS

- EU Horizon2020 Project825762 -Metabolic effects of endocrine disrupting chemicals: novel testing methods and adverse outcome pathways, total budget: 6 Million euro, WP4: Population studies (2019-2023)
- EU Horizon2020 Project773421- Nunataryuk (Permafrost thaw and the changing Arctic coast), total budget: 11,5 Million euro, WP5 Health and Pollution (2017-2021)
- One Health project: Animal and human health in the changing climate- Arctic Council's Sustainable Development Working Group and Finland Ministry of Foreign affairs, total budget: 0,3 Million euro (2017-2019)
- Finnish Ministry of Environment- Environmental and human exposure to mercury in the Arctic project Budget: 140.000 euro (2019-2021)
- EU-FP7; Arctic Health Risks: Impacts on health in the Arctic and Europe owing to climate-induced changes in contaminant cycling. Budget: 4.7 Million euro, WP4: Human Health effects of contaminants and the influence of climate change. (2009-2014).
- From in vitro studies of environmental pollutants towards human health risk assessment; Awarded by Kone Foundation, Finland (2011)
- Food-drug interactions: exploring and pre-empting intricate health risks, Funded by Academy of Finland, Finland,
- Drug metabolizing genes and contaminants – modulation, mechanistic and health consequences, Funded by Institute of Biomedicine, University of Oulu, Finland, 2010

- Metabolism and interactions of pesticides in human and animal in vitro hepatic models, Funded by Finnish Ministry of Education, Finland (Khaled Abass, PhD project)

SCIENTIFIC PUBLICATIONS

1. Sripada K., Wierzbicka A., Abass K., Grimalt J., Erbe A., Röllin H., Weihe P., Díaz G. J., Singh R., Visnes T., Rautio A., Odland J. Ø., Wagner M., A Children's Health Perspective on Nano- and Microplastics. *Environmental Health Perspectives*, (2022). Vol. 130, No. 1 .
2. Basu N., Abass K., Dietz R., Kruemmel E., Rautio A., Weihe P. The impact of mercury contamination on human health in the Arctic: A state of the science review. *Science of The Total Environment* 831.
3. Abass K., Reponen P., Rautio A., Pelkonen O. Characterization of furathiocarb metabolism in in vitro human liver microsomes and recombinant cytochrome P450 enzymes. *Toxicology Reports* 9 (2022) 679–689.
4. Abass K., Reponen P., Rautio A., Pelkonen O. Metabolic profiling and in vitro-in vivo extrapolation of furathiocarb in mammalian hepatic microsomes. *Toxicology Reports* 9 (2022) 750–758.
5. Emelyanova A, Savolainen A, Oksanen A, Nieminen P, Loginova O, Abass K, Rautio A. Research on Selected Wildlife Infections in the Circumpolar Arctic-A Bibliometric Review. *Int J Environ Res Public Health*. 2022 Sep 7;19(18):11260.
6. Abass K., Unguryanu T., Junqué E., Mazej D., Tratnik S.J., Horvat M., Grimalt J.O., Myllynen P., Rautio A., Pilot study on the concentrations of organochlorine compounds in pregnant women and local food items from the Finnish Lapland. *Environmental research*, (2022), Volume 211.
7. Abass K., Dudarev A., Khoury C., Human health risks associated with contaminants in the Arctic. In *Arctic Monitoring and Assessment Programme AMAP 2021: Human Health in the Arctic*. (2022) Oslo, Norway. 978-82-7971-200-8
8. Adlard B, Bonefeld-Jorgensen EC, Dudarev A., Olafsdottir K., Byrne S., Berner J, Laird B, Ratelle M., Lemire M., Ayotte P, Long M., Toft G., Petersen MS, Weihe P., Berg V., Averina M, Wennberg M., Nordstrom K, Rautio A., Abass K. Levels and trends of contaminants in human. In *Arctic Monitoring and Assessment Programme AMAP 2021: Human Health in the Arctic*. (2022) Oslo, Norway. 978-82-7971-200-8
9. Berner J., Rautio A., Abass K., Jore S. Arctic and global contexts In *Arctic Monitoring and Assessment Programme AMAP 2021: Human Health in the Arctic*. Oslo, Norway. (2022) Oslo, Norway. 978-82-7971-200-8
10. Weihe P., Basu N., Krummel E. Abass K., Rautio A., What is the Impact of Mercury Contamination on Human Health in the Arctic? 2021 Update. In *Arctic Monitoring and Assessment Programme AMAP 2021: Mercury in the Arctic*. (2022) Oslo, Norway. 978-82-7971-200-8.
11. Palaniswamy S., Abass K., Rysä J., Odland J. Ø., Grimalt J. O., Rautio A., Järvelin M. R. Non-occupational exposure to pesticides and health markers in general population in Northern Finland: Differences between sexes. *Environment international*, (2021). 156, 106766. (IF: 9.6).
12. Xu, S., Hansen, S., Rautio, A., Järvelin, M. R., Abass, K., Rysä, J., Palaniswamy, S., Huber, S., Grimalt, J. O., Dumas, P., & Odland, J. Ø. Monitoring temporal trends of dioxins, organochlorine pesticides and chlorinated paraffins in pooled serum samples collected from Northern Norwegian women: The MISA cohort study. *Environmental research*, (2021), 111980.
13. Abass K., Pelkonen O., Rautio A. Chloro-s-triazenes - toxicokinetic, toxicodynamic, human exposure, and regulatory considerations. *Current Drug Metabolism*, (2021), 22(8): 645 - 656.
14. Audouze K., Zgheib E., Abass K., Baig A. H., Forner-Piquer I., Holbech H., Knapen D., Leonards P. E. G., Lupu D. I., Palaniswamy S., Rautio A., Sapounidou M., Martin O. V. evidenced-based approaches to support the development of endocrine-mediated adverse outcome pathways: challenges and opportunities. *Frontiers in Toxicology* (2021), 3.

15. Larsen JN, Schweitzer P, Abass K, Doloisio N, Gartler S, Ingeman-Nielsen T, Ingimundarson JH, Jungsberg L, Meyer A, Rautio A, Scheer J, Timlin U, Vanderlinden J-P, Vullierme M. Thawing Permafrost in Arctic Coastal Communities: A Framework for Studying Risks from Climate Change. *Sustainability*. (2021); 13(5):2651.
16. Küblbeck J, Vuorio T, Niskanen J, Fortino V, Braeuning A, **Abass K**, Rautio A, Hakkola J, Honkakoski P, Levonen AL. The EDCMET Project: Metabolic Effects of Endocrine Disruptors. *Int J Mol Sci*. (2020) Apr 24;21(8):3021.
17. Palaniswamy S., Piltonen T., Koironen M., Mazej D., Järvelin MR., **Abass K.**, Rautio A., Sebert S., The association between blood copper concentration and biomarkers related to cardiovascular disease risk–analysis of 206 individuals in the Northern Finland Birth Cohort 1966. *Journal of Trace Elements in Medicine and Biology*, (2019) 51, 12-18.
18. Abass A., Waits A., Emelyanova A., Miettinen I., Lavikainen A., Rautio A., Oksanen A., One Arctic- One Health project report. Finnish Food Authority Research Reports (2019). ISSN 2490-1180. ISBN 978-952-358-005-3 (pdf).
19. Abass A., Emelyanova A., Rautio A., Temporal trends of contaminants in Arctic human populations. *Environmental Science and Pollution Research*, (2018) 1-17. (
20. Waits A., Emelyanova A., Oksanen A., *Abass K., Rautio A., Human infectious diseases and the changing climate in the Arctic. *Environment international* (2018) 121, 703-713.
21. Adlard B., Donaldson SG., Odland JO., Weihe P., Berner J., Carlsen A., Bonefeld-Jorgensen EC., Dudarev AA., Gibson JC., Krümmel EM., Olafsdottir K., Abass K., Rautio A., Bergdahl IA., Mulvad G. Future directions for monitoring and human health research for the Arctic Monitoring and Assessment Programme. *Global Health Action* (2018) 11, (1).
22. Carlsson P., Breivik K., Brorström-Lundén E., Cousins I., Christensen J., Grimalt JO., Halsall C., Kallenborn R., Abass K., Lammel G., Munthe J., MacLeod M., Odland JØ., Pawlak J., Rautio A., Reiersen LO., Schlabach M., Stemmler I., Wilson S., Wöhrnschimmel H. Polychlorinated biphenyls (PCBs) as sentinels for the elucidation of Arctic environmental change processes: a comprehensive review combined with ArcRisk project results. *Environmental Science and Pollution Research*, (2018) 1-30.
23. Abass K., Huusko A., Knutsen HK., Nieminen P., Myllynen P., Meltzer HM., Vahakangas A., Rautio A., Quantitative estimation of mercury intake by toxicokinetic modelling based on total mercury levels in humans, *Environment International* (2018), 114, 1-11.
24. Abass K., Koironen M., Mazej D., Snoj J., Tratnik J., Horvat M., Hakkola J., Järvelin MR., Rautio A., Arsenic, cadmium, lead and mercury levels in blood of Finnish adults and their relation to diet, lifestyle habits and sociodemographic variables. *Environmental Science and Pollution Research*, (2017) 24: 1347.
25. Abass K., Carlsen A., Rautio A., New approaches in human health risk assessment. *International Journal of Circumpolar Health*, (2016), 75: 33845.
26. Abass K., An investigation into the formation of tebufenozide's toxic aromatic amine metabolites in human in vitro hepatic microsomes, *Pesticides Biochemistry and Physiology*, 1333, (2016) pp. 73-78.
27. Elsebai M., Abass K., Hakkola J., Atawia A., Farag M., The wild Egyptian artichoke as a promising functional food for the treatment of hepatitis C virus as revealed via UPLC-MS and clinical trials. *Food & Function*, 13(7) (2016) pp. 3006-16.
28. Pelkonen O., Pasanen M., Tolonen A., Koskinen M., Hakkola J., Abass K., Laine J., Hakkinen M., Juvonen R., Auriola S., Storvik M., Huuskonen P., Rousu T., Rahikkala M., Reactive metabolites in early drug development: predictive in vitro tools, *Current Medicinal Chemistry*. 22(4) (2015), pp. 538-550.
29. Nieminen P., Abass K., Vähäkangas K., Rautio A., Statistical significance and number of outcome variables in environmental health studies., *Biomedical and Environmental Sciences*, 28 (9) (2015) pp. 666-673.
30. Abass K., Calsen A., Rautio A., Approches to describe risks and future needs, In Arctic Monitoring and Assessment Programme AMAP 2015, Oslo, Norway, ISBN: 978-82-7971-093-6

31. Abass K., Abd-El-Razik M., Abouelghar G., Fate and disposition of chlorpyrifos in human, In Chlorpyrifos: Technical properties, uses and effect on human health and the environment. (2015) Nova Science Publishers, New York, USA. ISBN: 978-1-63482-111-7
32. Abass K., Reponen P., Mattila S., Rautio A., Pelkonen O. Human variation and CYP enzyme contribution in benfuracarb metabolism in human in vitro hepatic models. *Toxicology Letters*, 224 (2014), pp. 300-309.
33. Abass K., Reponen P., Mattila S., Rautio A., Pelkonen O. Comparative metabolism of benfuracarb in in vitro mammalian hepatic microsomes model and its implications for chemical risk assessment. *Toxicology Letters*, 224 (2014), pp. 290-299.
34. Abass K., Huusko A., Nieminen P., Myllynen P., Pelkonen O., Vahakangas K., Rautio A. Estimation of health risk by using toxicokinetic modelling: A case study of polychlorinated biphenyl PCB153. *Journal of Hazardous Materials*. 261 (2013) 1-10.
35. Abass K. From in vitro hepatic metabolic studies towards human health risk assessment: A case study of diuron and carbosulfan. *Pesticides Biochemistry and Physiology*, 107 (2013) 258–265.
36. *Abass K., Pelkonen O. The inhibition of major human hepatic cytochrome P450 enzymes by 18 pesticides: Comparison of the N-in-one and single substrate approaches. *Toxicology In vitro*. 27 (2013) 1584-1588.
37. Pelkonen O., Abass K., Wiesner J. Thujone and thujone-containing herbal medicinal and botanical products: Toxicological assessment. *Regulatory Toxicology and Pharmacology*. 65 (2013) 100–107.
38. Pelkonen O., Turpeinen M., Hakkola J., Abass K., Pasanen M., Raunio H. How to preserve, induce or incorporate metabolism into the in vitro cellular system, *Toxicology in vitro*. 27 (2013) 1578–1583.
39. Abass, K., Lämsä, V., Reponen, P., Küblbeck, J., Honkakoski, P., Mattila, S., Pelkonen, O., Hakkola, J. Characterization of human cytochrome P450 induction by pesticides, *Toxicology*. 294 (2012) 17-26.
40. Abass K., Turpeinen M., Rautio A., Hakkola J., Pelkonen O. (2012). Metabolism of pesticides by human cytochrome P450 enzymes in vitro – survey. In: *Insecticides - Advances in Integrated Pest Management*–Farzana Perveen (Ed.) ISBN 979-953-307-667-5, pp. 165-194., Rijeka, Croatia
41. Abass K., Reponen P., Mattila S., Pelkonen O. Metabolism of α -thujone in human hepatic preparations in vitro. *Xenobiotica*. 14 (2011) 101-111.
42. Seviar D., Hokkanen J., Tolonen A., Abass K., Tursas L., Pelkonen O., Ahokas J. Rapid screening of commercially available herbal products for the inhibition of major human hepatic cytochrome P450 enzymes using the N-in-one cocktail. *Xenobiotica*, 40 (2010) 245-254.
43. Reponen P, Abass K., Sampo M, Pelkonen O. Overview of the metabolism and interactions of pesticides in hepatic in vitro systems. *International Journal of Environmental Analytical Chemistry*, 90 (2010) 429-437.
44. Abass K., Reponen P., Sampo M., Pelkonen O. Metabolism of Carbosulfan II. Human interindividual variability in the *in vitro* hepatic biotransformation and the identification of cytochrome P450 isoforms involved. *Chemico-Biological Interactions*, 185 (2010) 163-173.
45. Abass K., Reponen P, Turpeinen M, Sampo M, Pelkonen O. (2010). Do cytochrome P450 enzymes contribute to the metabolism of xenobiotics in human? In: *Fungicides (Carisse O., Eds)*, ISBN: 978-953-307-266-1, pp. 441-468. Rijeka, Croatia
46. Abass K., Reponen P., Sampo M., Pelkonen O. Metabolism of carbosulfan. I. Species differences in the *in vitro* biotransformation by mammalian hepatic microsomes including human. *Chemico-Biological Interactions*. 181 (2009), 210-219.
47. Abass K., Reponen P, Pelkonen O. (2009) Metabolic and interaction properties of selected fungicides, In *Fungicides: Chemistry, Environmental, Impact and Health Effects (P. De Costa and Bezerra, Eds.)*, pp. 25-62. Nova Science Publishers, New York, USA.
48. Abass K., Turpeinen M., Pelkonen O. An evaluation of the cytochrome P450 inhibition potential of selected pesticides in human hepatic microsomes. *Journal of environmental Science and Health, Part B*, 44 (2009) 553 – 563.

49. Abass K., Reponen P., Turpeinen M., Jalonen J., Pelkonen O. Characterization of diuron N-demethylation by mammalian hepatic microsomes and cDNA-expressed human cytochrome P450 enzymes. *Drug Metabolism and Disposition*, 35 (2007) 1634-1641.
50. Abass K., Reponen P., Jalonen J., Pelkonen O. In vitro metabolism and interaction of profenofos by human, mouse and rat liver preparations. *Pesticides Biochemistry and Physiology*, 87 (2007) 238–247.
51. Abass K., Reponen P., Jalonen J., Pelkonen O. In vitro metabolism and interactions of the fungicide metalaxyl in human liver preparations. *Environmental Toxicology and Pharmacology*, 23 (2007) 39–47.

Doctoral dissertation

Khaled M. Abass.: Metabolism and interactions of pesticides in human and animal in vitro hepatic models. University of Oulu, Acta Universitatis Ouluensis, D Medica 1071 (2010). ISBN 978-951-42-6299-9. <http://herkules.oulu.fi/isbn9789514262999/isbn9789514262999.pdf>

AWARDS AND RECOGNITIONS

- 2016 and 2017 Thailand international development cooperation agency fellowship award
- 2016 Society of Toxicology IUTOX/SOT Endowment Fund/ Travel Award
- 2015 American College of Toxicology 2015 International Travel Award
- 2011 Granted the title of European Registered Toxicologist ‘ERT’ by EUROTOX
- 2009 Orion Pharma research Foundation, Finland
- 2008, 2009 and 2010 Foundation of Economic Association in the Oulu, Finland.
- 2008 Oulu University Scholarship Foundation grant, Finland

TEACHING PHILOSOPHY

I am passionate about my field of research and my lectures have always been aimed at making audience share that passion. Knowledge cannot be transferred directly from the teacher to the learner, so the teacher must call on the totality of his or her own experience to inspire and facilitate learning in each student.

My teaching modules include recent supplementary reading from peer reviewed original and review articles so students can explore topics in more detail. Effective teaching requires combination between lectures, laboratory work, small projects and group discussions and seminars. I use quizzes regularly and provide rapid feedback to reward students for their preparation. This approach has helped students gain confidence in their understanding of the course material, ability to creatively and critically solve problems, and inspired them to continue their own intellectual development beyond the classroom. The feedback from student helps to improve my teaching. Surely comments and questions are welcome during and after the lectures.