

CURRICULUM VITAE

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<https://www.gundacker-lab.at/>

<https://exposome.at/>

Academic milestones and relevant positions

- 2016-2019 Member of Habilitation Committee Biomedical Basic Research, Vice Chairman of Curricula Committee Human Medicine
- From 2012 Associate Professor, Institute of Medical Genetics, Medical University of Vienna
- From 2011 Assistant Professor, Institute of Medical Genetics, Medical University of Vienna
- From 2010 Head of teaching staff at Institute of Medical Genetics, organising curriculum (Genetics, Medical Ecology, Biochemistry) and elective courses (Rounds Medical Genetics, Journal Club Medical Genetics, PhD Thesis seminars)
- 2009-2010 University Assistant *post doc*, Inst. Medical Genetics, Medical University of Vienna
- From 2009 Group leader, Institute of Medical Genetics, Medical University Vienna
- 2008 Habilitation (*Venia docendi*) Medical Ecology, Medical University of Vienna
- 2002-2008 University Assistant *post doc*, Center for Public Health, Medical University of Vienna
- 2001-2002 Maternity leave
- 1996-2001 Contract Assistant, Institute of Medical Biology, University of Vienna
- 1996 Dr. rer.nat. (PhD equivalent), Graduation with distinction, University of Vienna
- 1995-1996 Maternity leave
- 1992-1995 Contract Assistant, Institute of Medical Biology, University of Vienna
- 1992 Mag. rer.nat. (MSc equivalent), Graduation with distinction, University of Vienna
- 1985-1990 Diploma Studies of Biology, University of Vienna

Main areas of research

The main area of research is the early life exposome. Our goal is to better understand placental phenotypes and associated risk for disease. Dysfunction of the placenta has both direct and longer-term effects on health. By linking early exposure to heavy metals and perfluorinated compounds (PFAS) to placental physiology and function, we aim to gain new insights into the mechanisms that lead to adverse birth outcomes. Another research interest is the investigation of placental iron metabolism to develop improved therapy for preterm infants with low iron levels.

Research achievements

Partner of **Exposome Austria**, Research Infrastructure, EIRENE (European research infrastructure programme)

Research grants and Prizes

PARC - European Partnership for the Assessment of Risks from Chemicals, EU Horizon Europe, Co-Investigator in WP4 (T4.1 Human biomonitoring), 2022-2027

Health risk of emerging concern: PFAS in the urban water cycle, WWTF - Environmental Systems Research 2020 - Urban Regions, € 649 982 total, € 212 209 (WP), Co-PI in WP3: Toxicity of PFAS and basis for risk assessment, 2021-2024

HBM4EU - Science and policy for a healthy future, EU Horizon 2020, € 70 M total, € 175,000 (WP), 2017-2022. Co-Investigator in WP13 (Exposure-Health relationships) and WP14 (Effect Biomarkers), Lead of HBM4EU Focus Group on PFAS/AOPs (Perfluoroalkyl Substances/Adverse Outcome Pathways) with Environment Agency Austria including organisation of HBM4EU-PFAS Workshops (Vienna 2018, Berlin 2019), PI of NEWDA study: PFAS exposure and birth outcome (HBM4EU: two publications; NEWDA study: three publications)

Iron metabolism of the healthy human term placenta, Life Science Call, Gesellschaft für Forschungsförderung Niederösterreich m.b.H. (GFF), € 300,000, Scientific coordinator and PI, 2018-2021 (one publication)

Mercury kinetics in the human placenta: making the bridge between genotype and phenotype, Life Science Call Gesellschaft für Forschungsförderung Niederösterreich m.b.H. (GFF), € 295,000, Scientific coordinator and PI, 2016-2019 (two publications)

Mercury kinetics in human placenta - Functional proof and localization of candidate proteins, Life Science Call Gesellschaft für Forschungsförderung Niederösterreich m.b.H. (GFF), € 275,000, Scientific coordinator and PI, 2012-2015 (three publications)

Environmental pollutants in mother-child-pairs, EU-EFRE (European Regional Development Fund), € 300,000, Co-PI, € 39,000 (WP) 2010-2012 (one publication)

Veronika Fialka Moser Diversity Award (First Place Prize) and two Prizes by the City of Vienna in 2020 and 2021 for NOST, a WNWmed project that supports applicants with a foreign Medical Doctor degree at the Medical University of Vienna.

Member of Austrian Society of Toxicology (ASTOX), WNWmed - The Women's Science Network Medicine (Founding member, Board member), and Austrian Platform for Human Biomonitoring, Environment Agency, Vienna (Advisory body to the Minister of Environment)

Supervision of 8 Bachelor works, 17 Diploma/Master theses, 5 PhD theses, Co-Supervision of 2 Diploma theses and 2 Dissertations. Current Lab members: 2 PostDocs, 1 PhD student, 2 Master students, 1 Diploma student, 1 Technician

Reviewer for European Research Council (ERC), Czech Science Foundation (GACR), Slovenian Research Agency (ARRS), The Research Council of Norway (RCN)

Referee for 25+ scientific journals including Chemosphere, CDC/ATSDR, Environment International, Environmental Health, Environmental Health Perspectives, Environmental Pollution, Environmental Research, Heliyon, Placenta, The Lancet Planetary Health, Reproductive Toxicology, Scientific Reports, Science of the Total Environment, Toxicology Letters

Previous research achievements - Ten most relevant publications

Appel M, Forsthuber M, Ramos R, Widhalm R, Granitzer S, Uhl M, Hengstschläger M, Stamm T, **Gundacker C** (2022) The transplacental transfer efficiency of per- and polyfluoroalkyl substances (PFAS): a first meta-analysis. **J Toxicol Environ Health B Crit Rev.** 25(1):23-42.
doi: 10.1080/10937404.2021.2009946.

Granitzer S, Widhalm R, Forsthuber M, Ellinger I, Desoye G, Hengstschläger M, Zeisler H, Salzer H, **Gundacker C** (2021) Amino Acid Transporter LAT1 (SLC7A5) Mediates MeHg-Induced Oxidative Stress Defense in the Human Placental Cell Line HTR-8/SVneo. **Int J Mol Sci.** 22(4):1707.
doi: 10.3390/ijms22041707

Gundacker C, Forsthuber M, Szigeti T, Kakucs R, Mustieles V, Fernandez MF, Bengtson E, Vogel U, Hougaard KS, Saber AT (2021) Lead (Pb) and neurodevelopment: A review on exposure and biomarkers of effect (BDNF, HDL) and susceptibility. **Int J Hyg Environ Health.** 238:113855.
doi: 10.1016/j.ijheh.2021.113855

Granitzer S, Ellinger I, Khan R, Gelles K, Widhalm R, Hengstschläger M, Zeisler H, Desoye G, Tupova L, Ceckova M, Salzer H, **Gundacker C** (2020) In vitro function and in situ localization of Multidrug Resistance-associated Protein (MRP)1 (ABCC1) suggest a protective role against methyl mercury-induced oxidative stress in the human placenta. **Arch Toxicol.** 94(11):3799-3817.
doi: 10.1007/s00204-020-02900-5

Gundacker C, Ellinger I (2020) The unique applicability of the human placenta to the Adverse Outcome Pathway (AOP) concept: the placenta provides fundamental insights into human organ functions at multiple levels of biological organization. **Reprod Toxicol.** 96:273-281.
doi: 10.1016/j.reprotox.2020.07.014

Forsthuber M, Kaiser AM, Granitzer S, Hassl I, Hengstschläger M, Stangl H, **Gundacker C** (2020) Albumin is the major carrier protein for PFOS, PFOA, PFHxS, PFNA and PFDA in human plasma. **Environ Int.** 137:105324.
doi: 10.1016/j.envint.2019.105324

Widhalm R, Ellinger I, Granitzer S, Forsthuber M, Bajtela R, Gelles K, Hartig PY, Hengstschläger M, Zeisler H, Salzer H, **Gundacker C** (2020) Human placental cell line HTR-8/SVneo accumulates cadmium by divalent metal transporters DMT1 and ZIP14. **Metallomics** 12(11):1822-1833.
doi: 10.1039/d0mt00199f

Gundacker C, Kutalek R, Glaunach R, Deweis C, Hengstschläger M, Prinz A (2017) Geophagy during pregnancy: Is there a health risk for infants. **Environ Res.** 156:145-147.
doi: 10.1016/j.envres.2017.03.028

Gundacker C, Neesen J, Straka E, Ellinger I, Dolznig H, Hengstschläger M (2016) Genetics of the human placenta: implications for toxicokinetics. **Arch Toxicol.** 90(11):2563-2581.
doi: 10.1007/s00204-016-1816-6

Straka E, Ellinger I, Balthasar C, Scheinast M, Schatz J, Szattler T, Bleichert S, Saleh L, Knöfler M, Zeisler H, Hengstschläger M, Rosner M, Salzer H, **Gundacker C** (2016) Mercury toxicokinetics of the healthy human term placenta involve amino acid transporters and ABC transporters. **Toxicology** 340, 34-42.
doi: 10.1016/j.tox.2015.12.005