

BIOGRAPHICAL SKETCH

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NAME Gabriele Ludewig	POSITION TITLE Assistant Professor of Occupational & Environmental Health		
eRA COMMONS USER NAME GLUDEWIG			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Mainz, Germany	BS	1977	Biology
University of Mainz, Germany	MS	1982	Human Genetics
University of Mainz, Germany	Ph.D.	1991	Toxicology
University of Kentucky, USA	Postdoc	1992-1995	Molecular Biology

A. Positions and Awards**Positions**

1995-1996 Research Scientist ObGyn, University of Kentucky
 1996-1997 Director, Molecular Biol. Section of Genesis Biologics Inc.
 1997-1998 Research Scientist, Grad. Center for Toxicology, Univ. of Kentucky
 1999-2003 Assistant Professor, Nutrition & Food Sciences, Univ. of Kentucky
 2003-2007 Assistant Professor, Dept. Occupational & Environmental Health, University of Iowa
 Since 7/2007 Associate Professor, Dept Occupational & Environmental Health, University of Iowa

Research Experience

1978-1980 Technician in a medical laboratory for human cell culture and karyotype analysis
 1982 MS Theses title: Cell fusion studies with cell lines and cells of spermatogenesis
 1983 -1984 Work in Dept. Toxicol. Project: Studies of the chemical transformation of human cells *in vitro*
 1991 Ph.D. Thesis title: Metabolites of benzene and quinones of polycyclic aromatic hydrocarbons: spectra of activity, structure activity relationships and mechanisms of their geno- and cytotoxicity in mammalian cells *in vitro*
 1992 -1994 Postdoctoral Project: Genetic approach to understanding *Pneumocystis* therapy
 1995 -1996 Research Scientist Project: Inhibition of angiogenesis by anti-estrogens
 1996-1997 Director of Molecular Biology Section, Genesis Biologics Inc.
Project: Development of a live AIDS vaccine
 1997-1998 Research Scientist Project: Mechanisms of toxicity of PCBs

Honors and Awards: Awardee of the Univ. of Mainz student fellowship- Masters program (1981), Univ. of Mainz student fellowship- Ph.D. program (1984), Boehringer Ingelheim Student Fellowship Funds (1985-1987), Boehringer Ingelheim Funds travel support (Internat. Symposium on Benzene Metabolism, Toxicity and Carcinogenesis, Research Triangle Park, NC (USA), 1988; Cold Spring Harbor Course Fellowship (1992), Vice President (2006/07) and President (2007/08) of the Central States Chapter of the SOT, Member of the Editorial Board of Environmental Toxicology and Pharmacology

Membership in Professional Societies: Society of Toxicology (since 1993), American Association for Cancer Research (since 1995), Environmental Mutagen Society (since 2002), ISSX (since 2006)

Ad-Hoc Referee for Journals (Selection): Anal. Bioanal., Carcinogenesis, Chem. Anal. Biochemistry, Chemosphere, Environ. Toxicol., J. Nutr. Biochem., Mutation Research, Tox. Appl. Pharmacol., Toxicology Letters, Toxicological Sciences

Ad-hoc Referee for Agencies (Selection): NY Sea Grant (August 2001), Agency for Toxic Substances and Disease Registry (ATSDR), Department of Health & Human Services (2001), USGS/NIWR Water Resources National Competitive Grants Program (2000), Assoc. Schools of Public Health (2004)

Ad-hoc Referee for NIH Study Section: Fogarty International/NIEHS (2001), NIEHS-ARCH (2005)

B. Publications (Selection)

- A. Bergman, L. Hofvander, T. Malmberg, **G. Ludewig**, and L.W. Robertson. Metabolism and metabolites of polychlorinated biphenyls (PCBs). *Critical Reviews in Toxicology*, accepted
- L. Lehmann, H.L. Esch, P.A. Kirby, L.W. Robertson, **G. Ludewig**. 4-Monochlorobiphenyl (PCB3) induces mutations in the livers of transgenic Fisher 344 rats. *Carcinogenesis* 28, 471-478, 2007.
- G. Ludewig**, H. Esch and L.W. Robertson (2007). Polyhalogenierte Bi- und Terphenyle. In: *Handbuch der Lebensmitteltoxikologie Vol 2*, Dunkelberg, Hartwig, Gebel (Eds), p. 1031-1094, Wiley-VCH Weinheim.
- A. Ptak, **G. Ludewig**, M. Kapiszewska, Z. Magnowska, H.J. Lehmler, L.W. Robertson, E.L. Gregoraszczyk (2006). Induction of cytochromes P-450, caspase-3 and DNA damage by PCB3 and its hydroxylated metabolites in porcine ovary. *Toxicology Letters* 166, 200-211.
- R.P. Bender, H-J Lehmler, L.W. Robertson, **G. Ludewig** and N. Osheroff (2006). Polychlorinated Biphenyl Quinone Metabolites Poison Human Topoisomerase II α : Altering Enzyme Function by Blocking the N-Terminal Protein Gate. *Biochemistry* 45, 10140-10152.
- A. Ptak, **G. Ludewig**, L.W. Robertson, H.-J. Lehmler and E.L. Gregoraszczyk (2006). In vitro exposure of porcine prepubertal follicles to 4-chlorobiphenyl (PCB3) and its hydroxylated metabolites: effects on sex hormone levels and aromatase activity. *Toxicology Letters* 164, 113-122.
- PR Kodavanti, TR Ward, **G Ludewig**, LW Robertson, LS Birnbaum (2005). Polybrominated Diphenyl Ether (PBDE) Effects in Rat Neuronal Cultures: 14C-PBDE Accumulation, Biological Effects, and Structure-Activity Relationships. *Toxicological Sciences* 88, 181-192.
- A. Ptak, **G. Ludewig**, HJ Lehmler, AK Wojtowicz, LW Robertson, EL Gregoraszczyk (2005): Comparison of the action of 4-chlorobiphenyl and its hydroxylated metabolites on estradiol secretion by ovarian follicles in primary cells in culture. *Reproductive Toxicology* 20, 57-64.
- I. Kania-Korwel, K.C. Hornbuckle, A. Peck, **G. Ludewig**, L.W. Robertson, W.W. Sulkowski, P. Espandiari, C.G. Gairola, H.J. Lehmler (2005). Congener specific tissue distribution of Aroclor 1254 and a highly chlorinated environmental PCB mixture in rats. *Environmental Science & Technology*, 39(10), 3513-3520.
- B. Hennig, M. Toborek, P. Ramadass, **G. Ludewig**, and L.W. Robertson (2005). Polychlorinated biphenyls, oxidative stress and diet. *Reviews in Food and Nutrition Toxicity* vol. 3, pages 93-128.
- Y, Xu, F. Fang, **G. Ludewig**, G. Jones, D. Jones (2004). A mutation found in the promoter region of the human survivin gene is correlated to overexpression of survivin in cancer cells. *DNA & Cell Biology* 23(7), 419-429.
- I. Kania-Korwel, **G. Ludewig**, L.W. Robertson, K.C. Hornbuckle, A. Peck, P. Espandiari, C.G. Gairola, W.W. Sulkowski, H.-J. Lehmler (2004). Biochemical effects of an environmental Chlorofen mixture in comparison with Aroclor 1254 in rats. *Organohalogen Compounds* 66, 2985-2992.
- A. Ptak, **G. Ludewig**, H.-J. Lehmler, L.W. Robertson, E.L. Gregoraszczyk (2004). Effect of PCB3 and its Hydroxylated Metabolites on Estradiol Secretion, Cell Viability, and Caspase-3 Activity in Porcine Small Follicles. *Organohalogen Compounds* 66, 2973-2978.
- N.M. Tampal, L.W. Robertson, C. Srinivasan, and **G. Ludewig** (2003). Polychlorinated Biphenyls are not Substrates for the Multidrug Resistance Transporter-1, MDR1. *Toxicol. Applied Pharmacol.* 187, 168-177.
- E. Azizi, S. Shoaibi, **G. Ludewig**, and M.R. Oveisi (2003). The Inhibitory Effects of Ascorbic Acid, alpha-Tocopherol, and Sodium Selenite on Proliferation of Breast Cancer Cell Lines. *Iranian Journal of Pharmaceutical Research* Vol 2 (3), 173-177.
- N.M. Tampal, L.W. Robertson, and **G. Ludewig** (2002). In vivo MDR1 Transport Studies with PCB 77. *Organohalogen Compounds* 55, 457-459.
- A. Srinivasan, L.W. Robertson, and **G. Ludewig** (2002). Sulfhydryl binding and topoisomerase inhibition by PCB metabolites. *Chem. Res. Toxicol.* 15, 497-505.
- A. Srinivasan, H.-J. Lehmler, L.W. Robertson and **G. Ludewig** (2001). Production of reactive oxygen species and DNA stand breaks by PCB metabolites. *Toxicological Sciences* 59, 92-102.
- G. Ludewig** (2001). Cancer Initiation by PCBs, pages 337-354, In: (LW Robertson & LG Hansen, Eds.) PCBs: Recent Advances in Environmental Toxicology and Health Effects, The University Press of Kentucky, Lexington, KY, ISBN 0-8131-2226-0.

C. RESEARCH SUPPORT: ongoing

NIEHS: P42 ES 13661 (Robertson) 04/01/06 – 03/31/11
Semi-volatile PCBs : Sources, Exposures, Toxicities (Superfund Research Program Project Grant)

Project 1, PCBs : Metabolism, Genotoxicity and Gene Expression In Vivo
Role: Co-Investigator (PI: LW Robertson)

Training Core : Cross-Disciplinary Training “Without Borders”, Role: PI

DOD: DAMD 17-02-1-0241 (Ludewig) 4/1/02-11/30/08
“Prostate Cancer Risk through Exposure to Halogenated Hydrocarbons and Modulation by Dietary Supplementation”, Role: PI

UAW-GM Center for Human Resources (Heitbrink) 01/01/07-12/31/08
Burn-off Emissions in Vehicle Final Assembly Areas
Role: Co-Investigator

RESEARCH SUPPORT: Completed (Selection)

EPA (Ludewig, PI) 8/01 - 08/06
Polyhalogenated Diphenyl Ethers – An emerging Environmental Threat?
Role: PI

NIH/NIBIB (Lehmler, PI) 09/03 - 08/06
Perfluorocarbon Assisted Drug Delivery Systems
Role: Co-Investigator

NIEHS (LW Robertson, PI) 4/00 – 3/06
Superfund Chemicals: Transport, Metabolism, and Toxicity (Program Project Grant)

Project 1: Activation of PCBs to genotoxins in vivo
Role: Co-Project Leader; PL: LW Robertson

EHSRC (Ludwig, PI) 07/03 - 03/05
Exploring the Mechanisms of Increased Prostate Cancer Risk after Exposure to Polyhalogenated Biphenyls (PCBs)
Role: PI

CHEEC (Ludewig, PI) 01/03 - 12/04
Additive Effects of Environmental Contaminants (Chemical Mixtures) on Selenium-dependent Glutathione Peroxidase
Role: PI

American Lung Assoc.(Lehmler, PI) 7/01 – 6/02
Pulmonary Delivery of Drugs With a Perfluorocarbon Vehicle
Role: Co-Investigator

MC-IRG (Ludewig, PI) 6/99 – 5/01
Genotoxicity of PCB Metabolites in Metabolically Competent Mammalian Cells
Role: PI

DOD (Robertson, PI) 9/96 – 9/00
Mechanisms of PCBs-induced breast cancer
Role: Co-Investigator

NIH (Ludewig, PI) 6/96 – 5/97
A live yeast cell expression system for oral HIV-1 immunization
Role: PI