

C U R R I C U L U M V I T A E

FRANK WELSCH

Business Address

Orbitox *International Toxicology Consultants*

7 Avenida Vista Grande #274

Santa Fe, NM 87508-9175

welsch@orbitox.com

website: www.orbitox.com

Ph/FAX/Voice Mail: (505) 466-2939

Mobile: (505) 603-1579

EDUCATION:

1959	Graduation from High School (Gymnasium) Berlin, Germany
1959-1964	Veterinary student at the Veterinary Schools in Munich, Vienna and Berlin
1964	State Board examination and graduation as veterinarian in Berlin (D.V.M. <i>equivalent</i>)
1965	Licensed veterinarian after fulfillment of internship requirements
1965	Promotion to Doctor of Veterinary Medicine (Dr. med. vet.; Ph.D. <i>equivalent</i>) after presentation and defense of doctoral thesis to the Veterinary School of Freie Universität, Berlin

PROFESSIONAL LICENSURE AND CERTIFICATION:

American Board of Toxicology, Diplomate; since 1981

EXPERIENCE:

2001-Present	Principal Toxicologist, <i>Orbitox International Toxicology Consultants</i>
1993-2000	Senior Scientist; Endocrine, Reproductive and Developmental Toxicology Program; Head of the Teratology Laboratory, Chemical Industry Institute of Toxicology
1982-1993	Scientist, Department of Experimental Pathology and Toxicology, Head of the Teratology Laboratory, Chemical Industry Institute of Toxicology, Research Triangle Park, North Carolina
1981-1982	Professor, Department of Pharmacology and Toxicology, Michigan State University
1977-1978	Visiting Scientist, Institute of Toxicology and Embryopharmacology, Freie Universität Berlin, Berlin, Germany (Sabbatical Leave)
1975-1981	Associate Professor, Department of Pharmacology and Toxicology, Michigan State University

EXPERIENCE Cont'd:

- 1972-1975 Assistant Professor, Department of Pharmacology and Toxicology, Michigan State University
- 1971-1972 Instructor, Department of Pharmacology and Toxicology, Colleges of Veterinary Medicine, Human Medicine and Osteopathic Medicine, Michigan State University, East Lansing, Michigan
- 1968-1971 Research Associate, Department of Pharmacology, Vanderbilt University School of Medicine, Nashville, Tennessee, with Professor Wolf-Dietrich Dettbarn, M.D.
- 1967-1968 Research Associate, Laboratory of Neurochemistry, Department of Neurology, Columbia University College of Physicians and Surgeons, New York City, with Professor David Nachmansohn, M.D.
- 1964-1967 Research Associate, Department of Veterinary Pharmacology and Toxicology, School of Veterinary Medicine, Freie Universität Berlin with Professor Helmut Kewitz, M.D.

ACADEMIC AFFILIATIONS:

- 1982-2003 Adjunct Professor, School of Veterinary Medicine, North Carolina State University, Raleigh, NC
- 1982-2000 Adjunct Associate Professor, Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC
- 1992-2000 Adjunct Professor of Toxicology, Integrated Toxicology Program, Duke University, Durham, NC
- 2005- Present Clinical Full Professor, College of Pharmacy, University of New Mexico, Albuquerque, NM

ADVISORY APPOINTMENTS:

- 1978-1992 Ad Hoc Reviewer, National Science Foundation, Regulatory Biology Program
- 1982-2000 Ad Hoc Reviewer, National Toxicology Program, Reproductive and Developmental Toxicology, FDA-NCTR
- 1982-2000 Ad Hoc Reviewer, Birth Defects Research Program, The National Foundation - March of Dimes
- 1983-2000 Ad Hoc Reviewer, Environmental Protection Agency, Cooperative Research Grant Program
- 1983-Present Ad Hoc Reviewer, Toxicology Research and Testing Program, National Toxicology Program, National Institutes of Health, NIEHS
- 1986-1992 Member, Science Review Panel for Health Research, Environmental Protection Agency

ADVISORY APPOINTMENTS Cont'd:

1987-1991	Member, Review Committee on Health Effects - Electric Power Research Institute
1987-1991	Member, Developmental Toxicity Profile Organizing Committee, Environmental Protection Agency
1987-1992	Member, Reproductive and Developmental Toxicology Program Review Subcommittee of the National Toxicology Program Board of Scientific Counselors
1994	Ad Hoc Reviewer, Toxicology Study Section, National Institutes of Health
1996	Ad Hoc Reviewer, Committee for Review of the Establishment of a Research Center on Environmental Hazards and Reproductive and Developmental Outcome, Department of Veterans Affairs
1996-2001	Reviewer, Special Advisory Panel on Endocrine Disruptors, Ministry of the Environment, Federal Republic of Germany
1997-2000	Member, Committee on Developmental Toxicology, National Research Council Board of Environmental Studies and Toxicology, National Academy of Sciences
1999-2002	Member, MAK Committee for Maximum Permissible Occupational Exposure Levels of the German Research Council, Federal Republic of Germany (Senatskommission der Deutschen Forschungsgemeinschaft zur Prüfung gesundheitsschädlicher Arbeitsstoffe; Maximale Arbeitsplatz Konzentrationen = MAK)
2000-2001	Liaison Member of the American Conference of Governmental Industrial Hygienists- Threshold Limit Values and Biological Exposure Indices Committee (ACGIH-TLV/BEI) and the MAK Committee

EDITORIAL APPOINTMENTS:

1982-1986	Associate Editor, Teratology
1989-1995	Member, Editorial Board, Fundamental and Applied Toxicology
1989-2002	Associate Editor, Teratogenesis, Carcinogenesis, and Mutagenesis
1989-Present	Member, Editorial Board for Archives of Toxicology
1992-1998	Member, Editorial Board for Toxicology
1995-2000	Section Editor, Teratology

PROFESSIONAL AFFILIATIONS:

Society of Toxicology
American Society for Pharmacology and Experimental Therapeutics
Teratology Society
American Association for the Advancement of Science
German Society for Pharmacology and Toxicology
European Teratology Society

GRANTS, AWARDS AND HONORS

1972	Pharmaceutical Manufacturers Association Research Grant Award, \$5,000.-
1972-1980	National Institutes of Health Research Grant Award from the National Institute of Child Health and Human Development "Acetylcholine-Subcellular Distribution and Functions in Placenta", 1972-1975 - \$66,402.-; 1976-80 - \$101,924.-
1975-1978	Research grant from The National Foundation March of Dimes, "Acetylcholine in Human Placenta and Fetal Membranes: Possible Role in Regulation of Membrane Permeability and Transport", \$56,500.-
1977-1978	Alexander von Humboldt Foundation Research Fellowship Award (sabbatical leave).
1980-1983	National Institutes of Health Research Grant Award from the National Institute of Environmental Health Sciences "Polychlorinated Biphenyls: Embryotoxic Interactions with Known Teratogens", \$137,200.-
1980-1983	National Institutes of Health Research Grant Award from the National Institute of Environmental Health Sciences "Effects of Prenatal Exposure to Organophosphates", \$230,000.-

LISTED IN THE FOLLOWING BIOGRAPHICAL GUIDES:

American Men and Women of Science

AREAS OF EXPERTISE AND INTEREST

Developmental and reproductive toxicology of endocrine disruptors and other chemicals, including manifestations of the effects of prenatal and perinatal exposure at the gross structural, micromorphological and biochemical/functional level in offspring of both sexes.

Occupational exposure and reproductive toxicity

Risk assessment

Effects of pregnancy on pharmacokinetics and pharmacodynamics, physiologically based pharmacokinetics; extrapolation between species and to humans for improvement of scientifically based risk assessment.

Role of chemical metabolism for the expression of embryotoxicity/teratogenicity and to explain species differences in embryotoxic response.

Development of new testing methods to predict developmental toxicity hazard.

Application of in vitro methods involving embryo organ culture and whole embryo culture to study mechanisms of teratogenesis.

Placenta function; placental drug transfer and metabolism; effect of drugs on placenta and fetus

PUBLICATIONS

1. Welsch, F.: "Effects of Mechanical Factors on Shape and Structure of the Incisors in Rabbits." Doctoral thesis, Veterinary School, Freie Universität Berlin, Germany, 1965.
2. Kewitz, H. and F. Welsch: "A Yellow Colored Product from Formaldehyde and Kynurenine in Methenamine Treated Rats", Arch. Pharmak. exp. Path. 254: 101-109 (1966).
3. Kewitz, H. and F. Welsch: "Separation of a Cholinesterase Enriched Membrane Fraction from Unmyelinated Nerves", Arch. Pharmak. u. exp. Path. 258: 1-10 (1967).
4. Welsch, F. and W-D. Dettbarn: "The Subcellular Distribution of Acetylcholine (ACh), Cholineacetyltransferase (ChAc) and Cholinesterase (AChE and ChE) in Lobster Walking Leg Nerves", J. Neurochem. 17: 927-940 (1970).
5. Dettbarn, W-D., E. Bartels, F. Hoskin and F. Welsch: "Spontaneous Reactivation of Organophosphorus Inhibited Cholinesterase in Relation to Acetylcholine Induced Depolarization", Biochem. Pharmacol. 19: 2949-2955 (1970).
6. Welsch, F. and W-D. Dettbarn: "Protein Synthesis in Lobster Walking Leg Nerves", Comp. Biochem. Physiol. 38B: 393-403 (1971).
7. Welsch, F. and F. de Balbian Verster: "A Method for the Rapid Determination of Arylsulfatase in Nervous Tissue", Brain Research 26: 375-383 (1971).
8. Welsch, F. and W-D. Dettbarn: "Inhibition of Cholinesterase in Rat Diaphragm Muscle by Organophosphates and Spontaneous Recovery of Enzyme Activity In Vitro", Biochem. Pharmacol. 21: 1039-1049 (1972).
9. Welsch, F., D.E. Schmidt and W-D. Dettbarn: "Acetylcholine, Choline and Acetyltransferase and Cholinesterases in Motor and Sensory Nerves of the Bull Frog", Biochem. Pharmacol. 21: 847-856 (1972).
10. Welsch, F. and W-D. Dettbarn: "The Subcellular Distribution of Acetylcholine, Choline Acetyltransferase and Cholinesterases in Optic Lobes of the Squid, Loligo Pealei", Brain Research 39: 467-482 (1972).
11. Schmidt, D.E., R.C. Speth, F. Welsch and M.J. Schmidt: "The Use of Microwave Radiation in the Determination of Acetylcholine in Brain", Brain Research 38: 377-389 (1972).
12. Cehovic, G., W-D. Dettbarn and F. Welsch: "Effects of an Organic Phosphate Cholinesterase Inhibitor on Growth Hormone and Prolactin of Pituitary and ChE of Brain", Science 175: 1256-1258 (1972).
13. Welsch, F., W-D. Dettbarn and E.J. Landon: "The Effects of Nerve Transection in Walking Legs of Lobster on Acetylcholine, Acetylcholinesterase, Adenosine Triphosphate and Protein Composition", Comp. Biochem. Physiol. 47A: 943-957 (1974).

PUBLICATIONS Cont'd:

14. Welsch, F.: "Choline Acetyltransferase in Aneural Tissue: Evidence for the Presence of the Enzyme in Placenta of Guinea Pig and Other Species", Am. J. Obstet. Gynecol. **118**: 849-856 (1974).
15. Welsch, F.: "Choline Acetyltransferase of Human Placenta During the First Trimester of Pregnancy", Experientia **30**: 162-163 (1974).
16. Welsch, F.: "Uptake of Acetylcholine by Human Placenta Fragments and Slices from Guinea Pig and Rat Placenta", Biochem. Pharmacol. **25**: 81-89 (1976).
17. Welsch, F.: "Studies on Accumulation and Metabolic Fate of (N-Me³H) Choline in Human Term Placenta Fragments", Biochem. Pharmacol. **25**: 1021-1030 (1976).
18. Wennerberg, P. and F. Welsch: "Acetylcholine Induced Alterations of ³²P_i Incorporation into Phospholipids: Lack of Effects in Human Term Placenta", Res. Comm. Chem. Pathol. Pharmacol. **13**: 665-671 (1976).
19. Welsch, F.: "Effects of Drugs on the Uptake of Acetylcholine by Human Term Placenta Fragments", Res. Comm. Chem. Pathol. Pharmacol. **15**: 457-468 (1976).
20. Welsch, F. and S.K. McCarthy: "Choline Acetyltransferase and Carnitine Acetyltransferase in the Placenta of the Mouse", Comp. Biochem. Physiol. **56C**: 163-169 (1977).
21. Welsch, F.: "The Cholinergic System in Tissues Without Innervation: Choline Acetyltransferase, Choline and Acetylcholine in the Placenta of the Rhesus Monkey (*Macaca Mulatta*)", Biochem. Pharmacol. **26**: 1281-1286 (1977).
22. Welsch, F. and P. Wennerberg: "Effects of Cholinergic Drugs on Uptake of [¹⁴C]-a-Aminoisobutyric Acid into Fragments of Human Term Placenta: Implications for Cholinergic Recognition Sites and Observations on the Binding of Radioactive Cholinergic Ligands", Biochem. Pharmacol. **27**: 285-292 (1978).
23. Welsch, F.: "Choline Metabolism in Human Term Placenta: Studies on De Novo Synthesis and the Effects of Some Drugs on the Metabolic Fate of [N-methyl-³H] Choline", Biochem. Pharmacol. **27**: 1251-1257 (1978).
24. Welsch, F.: "Release of Human Chorionic Somatomammotrophin from Isolated Perfused Lobules and Superfused Fragments of Term Placenta: Spontaneous Liberation and the Effects of Cholinergic Drugs, N₀,Dibutyryl adenosine 3':5'-Cyclic Monophosphoric Acid and Calcium", Res. Comm. Chem. Pathol. Pharmacol. **24**: 211-222 (1979).
25. Welsch, F.: "Effect of Acetylcholine on the Clearance of [³H]-Antipyrine in Bilaterally Perfused Lobules of Human Term Placenta", Gynecol. Obstet. Invest. **11**: 49-55 (1980).
26. Welsch, F. and W.C. Wenger: "Acetylcholine in Human Placenta: Identification by Pyrolysis Gas Chromatography/Mass Spectrometry and Tissue Levels Following Different Modes of Delivery", Naunyn-Schmiedeberg's Arch. Pharmacol. **311**: 113-118 (1980).
27. Welsch, F. and W.C. Wenger: "Carnitine and Carnitine Acetyltransferase in the Placenta of Mouse, Marmoset and Man", Comp. Biochem. Physiol. **67B**: 97-101 (1980).

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28. Welsch, F.: "Human Fetal Membranes: Investigations on Membrane Potentials and Membrane ^{24}Na Permeability In Vitro and the Possible Involvement of Acetylcholine", Gynecol. Obstet. Invest. 12: 113-122 (1981).
29. Welsch, F., W.C. Wenger and D.B. Stedman: "Acetylcholine in Human Term Placenta: Tissue Levels After In Vitro Inhibition of Choline Acetyltransferase and Relationship to ^{14}C -Aminoisobutyric Acid Uptake", Placenta Suppl. 3: 339-351 (1981).
30. Welsch, F., W.C. Wenger and D.B. Stedman: "Choline Metabolism in Placenta: Evidence for the Biosynthesis of Phosphatidylcholine in Microsomes Via the Methylation Pathway", Placenta 2: 211-222 (1981).
31. Nau, H., F. Welsch, B. Ulbrich, R. Bass and J. Lange: "Thiamphenicol During the First Trimester of Human Pregnancy: Placental Transfer In Vivo, Placental Uptake In Vitro and Inhibition of Mitochondrial Function", Toxicol. Appl. Pharmacol. 60: 131-141 (1981).
32. Welsch, F.: "The Placental Transfer of Drugs", J. Vet. Pharmacol. Therap. 5: 91-104 (1982).
33. Welsch, F., W.C. Wenger and D.B. Stedman: "Release of Acetylcholine from Fragments of Human Term Placenta and Effects of the Choline Acetyltransferase Inhibitor (2-Benzoyl ethyl) trimethylammonium", Res. Comm. Chem. Pathol. Pharmacol. 41: 179-196 (1983).
34. Gupta, R.C., F. Welsch, J.E. Thornburg and B.S. Paul: "Effect of Chloramphenicol Pretreatment on Malathion Induced Acute Toxicity in the Rat", J. Toxicol. Env. Hlth. 11: 897-905 (1983).
35. Welsch, F.: "Mechanisms of Teratogenesis", CIIT Activities 3 (7): 1-5 (1983).
36. Gupta, R.C., J.E. Thornburg, D.B. Stedman and F. Welsch: "Effect of Subchronic Administration of Methyl Parathion on in vivo Protein Synthesis in Pregnant Rats and their Conceptuses", Toxicol. Appl. Pharmacol. 72: 457-468 (1984).
37. Welsch, F. and D.B. Stedman: "Inhibition of Metabolic Cooperation between Chinese Hamster V79 Cells by Structurally Diverse Teratogens", Teratogen. Carcinogen. Mutagen. 4: 285-301 (1984).
38. Welsch, F. and D.B. Stedman: "Inhibition of Intercellular Communication Between Normal Human Embryonal Palatal Mesenchyme Cells by Terato- genic Glycol Ethers", Environm. Hlth. Perspect. 57: 125-133 (1984).
39. Welsch, F., D.B. Stedman and J.L. Carson: "Effects of a Teratogen on ^3H -Uridine Nucleotide Transfer Between Human Embryonal Cells and on Gap Junctions", Exp. Cell Res. 159: 91-102 (1985).
40. Gupta, R.C., R.H. Rech, K.L. Lovell, F. Welsch and J.E. Thornburg: "Brain Cholinergic, Behavioral and Morphological Development in Rats Exposed in utero to Methyl Parathion", Toxicol. Appl. Pharmacol. 77: 405-413 (1985).
41. Horton, V. L., R. B. Sleet, J. A. John-Greene and F. Welsch: "Developmental Phase Specific and Dose-Related Teratogenic Effects of Ethylene Glycol Monomethyl Ether in CD-1 Mice", Toxicol. Appl. Pharmacol. 80: 108-118 (1985).

PUBLICATIONS Cont'd:

15. Welsch, F.: "Effects of Acute and Chronic Dietary Exposure to Polychlorinated Biphenyls on Maternal Metabolic Homeostasis and on the Manifestation of Embryotoxicity Caused by Cyclophosphamide in Mice", Arch. Toxicol. **57**: 104-113 (1985).
43. Welsch, F. and K.T. Morgan: "Placental Transfer and Developmental Toxicity of 2,4,5,2',4',5'-Hexabromobiphenyl in Mice", Toxicol. Appl. Pharmacol. **81**: 431-442 (1985).
44. John-Greene, J.A., F. Welsch and J.S. Bus: "Heart Malformations in B6C3F1 Mouse Fetuses Induced by Methyl Chloride - Continuing Efforts to Understand the Etiology and Interpretation of an Unusual Lesion", Teratology **32**: 483-487 (1985).
45. Stedman, D.B. and F. Welsch: "Effects of 6-Thioguanine on Communication Competence and Factors Affecting Reversibility of Phorbol Ester Inhibition in V79 Cells Measured by the Metabolic Cooperation Assay and by Dye Coupling", Carcinogenesis **6**: 1599-1605 (1985).
46. Sleet, R.B., J.A. John-Greene and F. Welsch: "Approaches to Elucidate the Embryotoxic Effects of 2-Methoxyethanol", CIIT Activities **5**(4): 1-5 (1985).
47. Sleet, R.B., J.A. John-Greene and F. Welsch: "Localization of Radioactivity from 2-Methoxyethanol (1,2-ethanol-¹⁴C) in Maternal and Conceptus Compartments of CD-1 Mice", Toxicol. Appl. Pharmacol. **84**: 25-35 (1986).
48. Welsch, F., D.B. Stedman, W.A. Willis and R.M. Pratt: "Karyotype, Growth and Cell Cycle Analysis of Human Embryonic Palatal Mesenchymal Cells: Relevance to the Use of These Cells in an *in vitro* Teratogenicity Screening Assay", Teratogen. Carcinogen. Mutagen. **6**: 383-392 (1986).
49. Welsch, F.: "The Applicability of *in vitro* Methods to Teratogenicity Testing and to Studies on the Mechanism of Action of Chemical Teratogens", CIIT Activities **6**(1): 1-7 (1986).
50. John-Greene, J.A., R.B. Sleet, K.T. Morgan and F. Welsch: "Cytotoxic Effects of Ethylene Glycol Monomethyl Ether in the Forelimb Bud of Mouse Embryos", Teratology **36**: 23-34 (1987).
51. Welsch, F., R.B. Sleet, and J.A. Greene: "Attenuation of 2-Methoxyethanol and Methoxyacetic Acid-Induced Digit Malformations in Mice by Simple Physiological Body Constituents: Implications for the Role of Methoxyacetic Acid in Developmental Toxicity", J. Biochem. Toxicol. **2**: 225-240 (1987).
52. Welsch, F.: "Investigations of Biochemical Mechanisms that Cause the Developmental Toxicity of 2-Methoxyethanol", CIIT Activities **7**(11): 1-5 (1987).
53. Sleet, R.B., J.A. John-Greene and F. Welsch: "The Relationship of Embryotoxicity to Disposition of 2-Methoxyethanol in Mice", Toxicol. Appl. Pharmacol. **93**: 195-207 (1988).
54. Stedman, D.B. and F. Welsch: "Inhibition of DNA Synthesis in Whole Embryo Culture by 2-Methoxyacetic Acid and Attenuation of the Effects by Simple Physiological Compounds", Toxicol. Lett. **45**: 111-117 (1989).

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55. Mebus, C.A. and F. Welsch: "The Possible Role of One-Carbon Moieties in 2-Methoxyethanol and 2-Methoxyacetic Acid-Induced Developmental Toxicity", Toxicol. Appl. Pharmacol. **99**: 98-109 (1989).
56. Mebus, C.A., F. Welsch and P.K. Working: "Attenuation of 2-Methoxyethanol-Induced Testicular Toxicity by Simple Physiological Compounds", Toxicol. Appl. Pharmacol. **99**: 110-121 (1989).
57. Mebus, C.A. and F. Welsch: "The Usefulness of Mechanistic Studies in Developmental Toxicology", CIIT Activities **9**(7/8): 1-7 (1989).
58. Kavlock, R.A., J.A. Greene, G.L. Kimmel, R.E. Morrissey, E. Owens, J.M. Rogers, T.W. Sadler, H.F. Stack, M.D. Waters, and F. Welsch: "Activity Profiles of Developmental Toxicity: Design Considerations and Pilot Implementation", Teratology **43**: 159-185 (1991).
59. Clarke, D.O., C.A. Mebus, F.J. Miller, and F. Welsch: "Protection Against 2-Methoxyethanol-Induced Teratogenesis by Serine Enantiomers: Studies of Potential Alteration of 2-Methoxyethanol Pharmacokinetics", Toxicol. Appl. Pharmacol. **110**: 514-526 (1991).
60. Clarke, D.O., R.B. Conolly and F. Welsch: "Pharmacokinetics of 2-Methoxyethanol-Induced Teratogenesis", CIIT Activities **11**(6/7): 1-7 (1991).
61. Schwetz, B.A., R.E. Morrissey, F. Welsch and R.A. Kavlock: "In Vitro Teratology", Environm. Hlth. Perspect. **94**: 265-268 (1991).
62. Mebus, C.A., D.O. Clarke, D.B. Stedman, and F. Welsch: "2-Methoxyethanol Metabolism in Pregnant CD-1 Mice and Embryos", Toxicol. Appl. Pharmacol. **112**: 87-94 (1992).
63. Welsch, F.: "In Vitro Approaches to the Elucidation of Mechanisms in Chemical Teratogenesis", Teratology **46**: 3-14 (1992).
64. Clarke, D.O., J.O. Duignan and F. Welsch: "2-Methoxyacetic Acid Dosimetry-Teratogenicity Relationships in 2-Methoxyethanol-Exposed CD-1 Mice", Toxicol. Appl. Pharmacol. **114**: 77-87 (1992).
65. Sumner, S.C.J., D.B. Stedman, D.O. Clarke, F. Welsch and T.F. Fennell: "Characterization of Urinary Metabolites from [1,2-Methoxy-¹³C]2-Methoxyethanol in Mice Using ¹³C Nuclear Magnetic Resonance Spectroscopy", Chem. Res. Toxicol. **5**: 553-560 (1992).
66. Clarke, D.O., B.A. Elswick, F. Welsch and R.B. Conolly: "Pharmacokinetics of 2-Methoxyethanol and 2-Methoxyacetic Acid in the Pregnant Mouse; A Physiologically-Based Mathematical Model", Toxicol. Appl. Pharmacol. **121**: 239-252 (1993).
67. Bolon, B., D.C. Dorman, D. Janszen, K.T. Morgan and F. Welsch: "Phase-Specific Developmental Toxicity in Mice Following Maternal Methanol Inhalation", Fund. Appl. Toxicol. **21**: 508-516 (1993).
68. Terry, K.K., B.A. Elswick, D.B. Stedman and F. Welsch: "Developmental Phase Alters Dosimetry-Teratogenicity Relationship for 2-Methoxyethanol in CD-1 Mice", Teratology **49**: 218-227 (1994).

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69. Bolon, B., F. Welsch and K.T. Morgan: "Methanol-Induced Neural Tube Defects in Mice: Pathogenesis During Neurulation", Teratology **49**: 497-517 (1994).
70. Welsch, F.: "Pharmacokinetics in Developmental Toxicology: 2-Methoxyethanol as a Prototype Chemical for Teratogenicity Studies at Different Stages of Gestation", CIIT Activities **15**(1): 1-7 (1995).
71. Terry, K.K., B.A. Elswick, F. Welsch and R.B. Conolly: "Development of a Physiologically Based Pharmacokinetic Model Describing 2-Methoxyacetic Acid Disposition in the Pregnant Mouse", Toxicol. Appl. Pharmacol. **132**: 103-114 (1995).
72. Sumner, S.C.J., D.B. Stedman, S.-Y. Cheng, F. Welsch and T.R. Fennell: "Dose Effects on the Excretion of Urinary Metabolites of [1,2-methoxy-¹³C]2-Methoxyethanol in Rats and Mice", Toxicol. Appl. Pharmacol. **134**: 139-147 (1995).
73. Dorman, D.C., B. Bolon, M.F. Struve, K.M.D. LaPerle, B.A. Wong, B. Elswick, and F. Welsch: "The Role of Formate in Methanol-Induced Exencephaly in CD-1 Mice", Teratology **52**: 30-40 (1995).
74. Welsch, F., G.M. Blumenthal and R.B. Conolly: "Physiologically based pharmacokinetic models applicable to organogenesis: extrapolation between species and potential use in prenatal toxicity risk assessments", Toxicol. Lett. **82/83**: 561-565 (1995).
75. Sleet, R.B., F. Welsch, C.B. Myers, and M.C. Marr: "Developmental Phase Specificity and Dose-Response Effects of 2-Methoxyethanol in Rats", Fundam. Appl. Toxicol. **29**: 131-139 (1995).
76. Sumner, S.J., D. Stedman, S. Cheng, F. Welsch, and T. Fennell: "Characterization of Urinary Metabolites Produced Following Administration of [1,2-methoxy-¹³C]-2-methoxyethanol to Male F-344 Rats and Pregnant CD-1 Mice", Proceedings of International Symposium on Health Hazards of Glycol Ethers, Nancy, France, Occup. Hyg., **2**: 25-31 (1996).
77. Terry, K.K., B.A. Elswick, F. Welsch, and R.B. Conolly: "A Physiologically-Based Pharmacokinetic Model Describing 2-Methoxyacetic Acid in the Pregnant Mouse", Proceedings of International Symposium on Health Hazards of Glycol Ethers, Nancy, France, Occup. Hyg., **2**: 57-65 (1996).
78. Welsch, F., K.K. Terry, D.B. Stedman, and B.A. Elswick: "Linking Embryo Dosimetry and Teratogenic Response to 2-Methoxyethanol at Different Stages of Gestation in Mice", Proceedings of International Symposium on Health Hazards of Glycol Ethers, Nancy, France, Occup. Hyg., **2**: 121-130 (1996).
79. Welsch, F.: "Background for Two Perspectives on the Status and Prospects of In Vitro and Short-Term Prescreening Tests for Developmental Toxicity Hazard Potential", Teratology **53**:332-333 (1996).
80. Terry, K.K., D.B. Stedman, B. Bolon and F. Welsch: "Pathogenesis of 2-Methoxyethanol-Induced Exencephaly in Mice", Teratology, **54**: 219-229 (1996).
81. Welsch, F.: "New Approaches for Assessing the Etiology and Risks of Developmental Abnormalities from Chemical Exposure - Introductory Remarks and Summary", Reproduct. Toxicol. **11** :, 387-388; and 435, 1997.

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82. Ward, K.M., G.M. Blumenthal, F. Welsch and G.M. Pollack: "Development of a Physiologically Based Pharmacokinetic Model to Describe the Disposition of Methanol in Pregnant Rats and Mice", Toxicol. Appl. Pharmacol., 145 : 311-322 (1997)
83. Ambroso, J.L., D.B. Stedman, B.A. Elswick and F. Welsch.: "Characterization and Quantification of Cell Death Induced by 2-Methoxyethanol in CD-1 Mouse Embryos on Gestation Day 8", Teratology, 58: 231-240 (1998)
84. Sar, M. and Welsch, F.: "Differential Expression of Estrogen Receptor- β and α in the Rat Ovary", Endocrinology, 140: 963-971 (1999)
85. Fisher, J.W., Dorman, D.C., Medinsky, M., Welsch, F. and Conolly, R.B. : "Analysis of Respiratory Exchange of Methanol in the Lung of the Monkey Using a Physiological Model", Toxicol. Sci., 53: 185-193 (2000).
86. Hays, S.M., Elswick, B.A., Blumenthal, G.M. Welsch, F., Conolly, R.B., and Gargas, M.L. : "Development of a Physiologically Based Pharmacokinetic Model of 2-Methoxyethanol and 2-Methoxyacetic Acid Disposition in Pregnant Rats", Toxicol. Appl. Pharmacol., 163: 67-74 (2000).
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