

CURRICULUM VITAE

Xinxin Ding

Personal Information:

Gender: Male
Citizenship: USA
Current Address: SUNY Polytechnic Institute
257 Fuller Rd
Albany, NY 12203
Phone: 518-956-7057 (W); 518-588-5478 (C)
Email: xding@sunypoly.edu

Education:

B.S. Biology (Medical Physiology),
Nanjing University, Nanjing, China,
1978-82
Ph.D. Biological Chemistry, Medical School,
The University of Michigan, Ann Arbor,
1982-88
Dissertation Advisor: Dr. Minor J. Coon

Professional Appointments:

Graduate Research and Teaching Assistant, Department of Biological Chemistry, Medical School, the University of Michigan, 1982-1988
Postdoctoral Research Fellow (with Dr. Minor J. Coon), Department of Biological Chemistry, Medical School, the University of Michigan, 1988
Lecturer, Department of Biological Chemistry, Medical School, the University of Michigan, 1989
Research Investigator, Department of Biological Chemistry, Medical School, the University of Michigan, 1989-1992
Assistant Professor (non-tenure track), Department of Biological Chemistry, Medical School, the University of Michigan, 1992-1994
Research Scientist IV (1994-1997), V (1997-2001), VI (2001-2002), VIII (2002-2014)
Laboratory of Molecular Toxicology, Division of Environmental Health Sciences, Wadsworth Center, New York State Department of Health (NYSDOH)
Assistant Professor (1994-1997), Associate Professor (1997-2003), Professor (2004-2014), Department of Environmental Health Sciences (EHS), School of Public Health, State University of New York (SUNY) at Albany (Toxicology Track)
Director, Toxicology Track, Department of Environmental Health Sciences, School of Public Health, SUNY at Albany (2000-2014)
Associate Professor (2000-2003), Professor (2004-2014), Department of Biomedical Sciences (BMS), School of Public Health, SUNY at Albany (Molecular Genetics and Neuroscience Tracks)
Assistant Director (2005-2014), Division of Environmental Health Sciences, Wadsworth Center, NYSDOH
Chief (2007-2014), Laboratory of Molecular Toxicology, Division of Environmental Health Sciences, Wadsworth Center, NYSDOH

Professor (2014-), Nanobioscience, State University of New York (SUNY) Polytechnic Institute, Colleges of Nanoscale Science and Engineering (CNSE), Albany, NY
Director (2014-), Laboratory of Molecular Toxicology, CNSE
Director (2014-), Center for Preclinical Nano-Drug Discovery and Development, CNSE
Visiting Scientist (2014-), Wadsworth Center, NYSDOH
Adjunct Professor (2014-), Department of Environmental Health Sciences, School of Public Health, SUNY at Albany

Honors and Awards:

Distinctions in Academic Studies and Athletics, Nanjing University, 1979-81
Rackham Graduate Studies University Fellowship, the University of Michigan, 1985-86
Fogarty International Research Collaboration Award, Fogarty International Center, NIH, 1999-2002
Distinguished Chinese Toxicologist Lectureship Award, the American Association of Chinese in Toxicology, Society of Toxicology, 2008

Society Membership:

American Society for Biochemistry and Molecular Biology, 1988-
International Society for the Study of Xenobiotics, 1993-
Society of Toxicology, 1995-
American Society for Pharmacology and Experimental Therapeutics, 1997-
American Association for Cancer Research, 2004-
Chinese Biological Investigators Society, 2007-

Membership on National and International Committees or Boards:

Member, Special Emphasis Panel for Small Grants Program, NIDCD, NIH, 1997, 2002
Reviewer, Minority Biomedical Research Support Program, NIGMS, NIH, 1998
Ad hoc Member, ALTX-1 Special Emphasis Panel, CSR, NIH, 1998
Member, Special Emphasis Panels, CSR, NIH, 1999, 2001-2005
Member, NIEHS Special Emphasis Panel on "The Role of the Environment in Parkinson's Disease," NIH, 2000
Standing Member, Alcohol and Toxicology Study Section (1), CSR, NIH, 2000-2003
Standing Member, Lung Injury, Repair, and Remodeling Study Section, CSR, NIH, 2004;
Ad hoc Member, 2005-2006
Ad hoc Member, International and Cooperative Study Section 1, CSR, NIH, 2005
Member, NIEHS Special Emphasis Panel for the Superfund Basic Research and Training Program, NIH, 2005
Member, National Center for Complementary and Alternative Medicine Special Emphasis Panel, NIH, 2005-2006
Councilor (2001-2004), Nominating Committee (2000-2004), Best Paper Selection Committee (2001-2003, 2005), Secretary/Treasurer (2005-2006), Executive Committee (2001-2007), Drug Metabolism Division, American Society for Pharmacology and Experimental Therapeutics
Member, Nominating committee (2005-06), American Society for Pharmacology and Experimental Therapeutics
Member, International Advisory Board for the 14th International Symposium on Microsomes and Drug Oxidations, Sapporo, Japan, 2002
Member, Best Presentation Award Committee, 11th North American ISSX Meeting, Orlando, 2002

Member, Student Award Committee, Society of Toxicology, Molecular Biology Specialty Section, 2002, 2003

Member, NIEHS Special Emphasis Panel on "Interdisciplinary Partnerships in Environmental Health Sciences," CSR, NIH, 2006

Member, Chemistry in Cancer Research Working Group's Young Chemists Committee, American Association for Cancer Research, 2006-2008

Expert Panelist, Naphthalene State-of-the-Science Symposium, Monterey, CA, 2006

Treasurer, Local Organizing Committee for the 17th International Symposium on Microsomes and Drug Oxidations, Saratoga Springs, NY, 2008

Member, Program Committee, 15th North American ISSX Meeting, San Diego, CA, 2008

Member, various NIGMS, NCI, NIEHS, and CSR Special Emphasis Panels, NIH, 2008-

Member, Peer Review Panel for Susan G. Komen for the Cure Research Programs, 2008-2010

Chair, Program Committee for the 18th International Symposium on Microsomes and Drug Oxidations, Beijing, China, 2010

Member, Organizing Committee, International Symposium on Pharmacogenomics and the Regulation of Drug Metabolism Enzymes and Genes, Nanjing, China, 2010

Ad hoc member, NIH Xenobiotic and Nutrient Disposition and Action (XNDA) Study Section, 2010, 2011

Member, International Advisory Committee for the 19th International Microsomes and Drug Oxidations (MDO)/12th European ISSX Joint Meeting, Noordwijk aan Zee, the Netherlands, 2012

Member, Scientific Advisory Board for the 10th International ISSX meeting, Toronto, Canada, 2013

Standing member, NIH Xenobiotic and Nutrient Disposition and Action (XNDA) Study Section, 2013-2017

Member, Special Emphasis Panel for FDA-NIH Tobacco Regulation Research Review, 2013

Ad hoc member, NIEHS Board of Scientific Counselors, 2013

Member, Scientific Advisory Board, 20th International Microsomes and Drug Oxidations Meeting, Stuttgart, Germany, 2014

Ad hoc member, NIEHS Environmental Health Science Review Committee: Educational and Career Opportunities in Environmental Health; 2014

Invited Speaker at Symposia; Lectureship:

International Meeting on Cytochrome P-450 and Carcinogenesis, U.S.A.-Japan Cooperative Cancer Research Program, Hawaii, 1989

Association for Chemoreception Sciences (AChemS) annual meeting (XIII), Sarasota, FL, 1991

9th International Symposium on Microsomes and Drug Oxidations, Jerusalem, Israel, 1992

Experimental Biology, New Orleans, 1993

Fifth SCBA (Society of Chinese Bioscientists in America) International Symposium and Workshops, Baltimore, 1993

University of Windsor, Windsor, Canada, 1994

Samuel S. Stratton VA Medical Center, Albany, 1996

Emory University, Atlanta, 1998

Shandong Medical University, Jinan, China, 1998

University of Nebraska, Omaha, 1999

University of Medicine and Dentistry of New Jersey, Piscataway, 2000

University of Minnesota, Twin Cities, 2000
Experimental Biology Meeting (ASPET/ASBMB symposium speaker), Boston, 2000
13th International Symposium on Microsomes and Drug Oxidations, Stresa, Italy, 2000
Director's Seminar, Wadsworth Center, 2000
10th North American ISSX Meeting, Indianapolis, 2000
6th International ISSX Meeting, (symposium co-chair and speaker), Munich, 2001
American Health Foundation, Valhalla, 2001
Givaudan Fragrance Research, Zurich, Switzerland, 2001
Wayne State University, Detroit, 2002
14th International Symposium on Microsomes and Drug Oxidations, Sapporo, Japan, 2002
11th North American ISSX Meeting (symposium co-chair and speaker), Orlando, 2002
Experimental Biology Meeting (symposium chair and speaker), New Orleans, 2002
University of Washington, 2002
University of Kentucky, 2003
Rensselaer Polytechnic Institute, 2003
The 20th Pathophysiology Symposium and Workshop on Health Effects of Heavy Metals.
Chiang Mai, Thailand, 2003
New York University, 2003
Penn State University, 2003
University of Utah, 2003
Society of Toxicology annual meeting (symposium co-chair and speaker), Baltimore, 2004
Experimental Biology Meeting (symposium chair and speaker), Washington, D.C., 2004
University of Louisville, 2004
15th International Symposium on Microsomes and Drug Oxidations, Mainz, Germany,
2004
7th International ISSX Meeting, Vancouver, Canada, 2004
Gordon Research Conference on Drug Metabolism, Plymouth, NH, 2005
American Association of Pharmaceutical Scientists Annual Meeting, Nashville, TN, 2005
The Wadsworth Public Lecture Series, Pharmacogenomics, 2005
Vanderbilt University, 2005
National Institute of Environmental Health Sciences, NIH, 2005
Ordway Research Institute, 2005
Bristol-Myers Squibb Pharmaceutical Research Institute, Wallingford, CT, 2005
Experimental Biology Meeting (symposium chair and speaker), San Francisco, CA, 2006
University at Buffalo, 2006
Association for Chemoreception Sciences (AChemS) 28th annual meeting, Symposium
chair and speaker, Sarasota, FL, 2006
16th International Symposium on Microsomes and Drug Oxidations, Budapest, Hungary,
2006
West Virginia University/NIOSH, 2006
Monell Chemical Senses Center, Philadelphia, 2006
Jefferson University, 2006
University of Toronto, 2007
Great Lakes Drug Metabolism Discussion Group, Ann Arbor, MI, 2007
University of California, Los Angeles, 2007
Albany Medical College, 2008
University of Texas Health Science Center at San Antonio, 2008
Nanjing University, Nanjing, China, 2008

2nd Asian Pacific ISSX Meeting (short course speaker and session chair), Shanghai, China, 2008

15th North American ISSX Meeting (symposium chair and speaker), San Diego, 2008

17th International Symposium on Microsomes and Drug Oxidations, (session co-chair and plenary session speaker), Saratoga Springs, 2008

University of Michigan, Ann Arbor, 2008

16th North American ISSX Meeting (symposium speaker), Baltimore, 2009

Beijing International Meeting on Research in Taste and Smell, Beijing, 2009

5th Applied Pharmaceutical Analysis conference (The Boston Society of Advanced Therapeutics), Boston, 2009

American Association of Pharmaceutical Scientists Webinar, 2009

Vanderbilt University, 2009

Indiana University School of Medicine, 2010

International Symposium on Pharmacogenomics and the Regulation of Drug Metabolism Enzymes and Genes, Nanjing, China, 2010

Peking Union Medical College and Chinese Academy for Medical Sciences, Beijing, 2010

University of Pittsburgh, 2010

50th Society of Toxicology annual meeting (symposium co-chair and speaker), Washington DC, 2011

17th North American ISSX Meeting (symposium co-chair and speaker), Atlanta, 2011

University of Maryland, Baltimore, 2011

Johns Hopkins University, Baltimore, 2012

Experimental Biology Meeting, San Diego, 2012

University of Kansas Medical Center, 2012

University of California, Los Angeles, 2013

Loma Linda University, 2013

Gordon Research Conference on Drug Metabolism, Plymouth, NH, 2013

10th International ISSX Meeting (chair of plenary session), Toronto, Canada, 2013

State University of New York College of Nanoscale Science and Engineering, Albany, 2013

University of Minnesota, Minneapolis, 2013

The Chinese University of Hong Kong, 2013

Ling-Nan International Forum on DMPK, Guangzhou, China, 2013

University of Connecticut, Storrs, 2014

St. Jude Children's Research Hospital, Memphis, 2014

19th North American ISSX Meeting, San Francisco, 2014

20th International Symposium on Microsomes and Drug Oxidations, Stuttgart, Germany, 2014

University of California, Davis, 2014

Michigan State University, East Lansing, 2015

University of Kentucky, Lexington, 2015

New York University, 2015

Mini symposium on Drug Metabolism and Pharmacokinetics, Institute of Chemistry and Physics, Chinese Academy of Sciences, Dalian, China, 2015

Sunrise Symposium for Drug metabolism, Pharmacokinetics, and Dynamics, Nanjing, China, 2015

University of Cincinnati, Cincinnati, 2015

Editorial Boards:

Member:

Toxicology and Applied Pharmacology (2000-)
Journal of Biochemical and Molecular Toxicology (2007-)
Journal of Biological Chemistry (2009-2014)
International Journal of Biochemistry and Molecular Biology (Senior Ed. Board;
2009-)
Cell Biology and Toxicology (2016-)
Current Pharmacology Reports (2015-)

Associate Editor

Drug Metabolism and Disposition (2010-)
Acta Pharmaceutica Sinica B (2010-)
Tobacco Regulatory Science (2014-2017)

Involvement with SUNY Polytechnic Institute, CNSE:

Teaching Activities:

NNSE 681, Seminars in Nanobiology (Spring, 2015-)
NNSE 506, Foundations of Nanotechnology I (Principles of Nanobiology; Fall, 2015-)
NNSE 115, Chem. Principles of Nanoscale Sci. and Engineering Laboratory I (Fall, 2015-)

Committee and Administrative Services:

Logo Design Committee, member, 2014-2015
Faculty Recruitment Committee, member, 2015-
Ph.D. Dissertation Committees, member/chair, 2014-

Wadsworth Center Committee and Administrative Services:

Chair, Molecular Genetics Core, Transgenic/Knockout Mice Core, Genomics Core, and
Microarray Core Advisory Committee, 1995-2004
Member, Wadsworth Seminar Committee, 1996-1999
Member, Review Committee for Human Genetics Support Service, 1999
Member, Faculty Recruiting Committee, Genomics Institute, 2000-2001
Member, Wadsworth PI Salary Recovery Policy Committee, 2001
Member, Robert J. Colinas Postdoctoral Award selection committee, 2001-2014
Member, Postdoctoral Fellow Affairs Committee, 2003-2006
Member, Task Force on Affiliated Appointments, 2003
Member, Animal Services Advisory Committee, 2004-2006
Member, Peer Review Board, 2005-2008
Supervisor, Wadsworth Mouse Behavioral Phenotyping Core, 2006-2009
Supervisor, Wadsworth Transgenic/Knockout Mouse Core, 2006-2009
Member, Genomics Institute Steering Committee, 2006-2008
Member, Internal Grant Review Committee, 2007-2011
Member, Interim Funding Review Board, 2009-2014
Member, Health Research Inc. Interaction Committee, 2010-2014
Chair, review committee for appointment of independently-supported principal
investigator, 2010
Member, Wadsworth Center Research Council, 2011-2013

Involvement with the University at Albany, School of Public Health:

Teaching Activities:

Lecturer, Principles of Toxicology (EHS 530), 1994-; *Course Director*, 2009-2014
Lecturer, Chromatographic Methods (EHS 621), Radiometric HPLC, 1998-2000
Lecturer, Model Organisms (BMS 606), Tissue-specific Gene Targeting in Mice, 2001
Lecturer, Introduction to Biomedical Sciences (BMS 601B), Director of Module on Biotransformation Enzymes and Human Health, 2002
Director, Directed Readings in Pharmacogenetics and Toxicogenomics (EHS 694), 2003
Lecturer, Mammalian Genetics, (BMS 663), Pharmacogenetics, 2005-2014

Committee and Administrative Services:

Director of Toxicology Track, 2000-2014
EHS Executive Committee, member, 2000-2014
EHS Academic Committee, member, 2000-2014
EHS Admissions Committee, member, 1994-99; chair, 1997-99
EHS Personnel Committee, member, 2006-2012
EHS Ph.D. Dissertation Committees, member/chair, 1994-
EHS Graduate Student Recruiting Committee, chair, 1996-1997
EHS ad hoc Faculty Promotion Committees, member/chair, 1998, 2004
EHS Preliminary Exam Committees, member/chair, 1998-2005
BMS ad hoc Faculty Promotion Committee, member, 2001
BMS Admissions Committee, member, 2001-2004
BMS Ph.D. Dissertation Committees, member/chair, 2003-2014
Empire Innovation Faculty Recruitment Committee, member, 2006-8

Other Administrative and Teaching Activities:

Ph.D. Dissertation Committees, Biological Chemistry, University of Michigan, 1992
Biological Chemistry Preliminary Examination (Oral) Committees, University of Michigan, 1993
Guest Lecturer, Introductory Biochemistry (Biol. Chem. 415/515), University of Michigan, 1992, 1993;
Counselor, Enzyme Kinetics and Ligand Binding (Biol. Chem. 573), University of Michigan, 1993;
Lecturer, Introductory Biochemistry Laboratory for Undergraduate and Graduate Students (Biol. Chem. 416/516), University of Michigan, 1993;
Guest Lecturer, Genetic Engineering (BCBP-4310), Rensselaer Polytechnic Institute, 2003;
Lecturer, Perspectives in Biomolecular Science and Engineering, Rensselaer Polytechnic Institute, 2006
Guest lecturer, Environmental Carcinogenesis (EHSC-GA-2309), New York University, 2011, 2013, 2015

Other Professional Activities:

Member, Genomics Institute, WCLR, NYSDOH, 2000-2011
Consultant, Byk Gulden, 2001-2002
Member, Senior Health Research Service, Health Research Inc., NYSDOH, 2002-2013
Consultant, Altana Pharma, 2004-2006

Adjunct Professor, Department of Chemistry and Chemical Biology, Rensselaer Polytechnic Institute, Troy, NY, 2005-2014
External Examiner for PhD thesis defense, University of Toronto, Canada
Anna Lee, 2006
Jibrán Khokhar, 2012
Adjunct Professor, Suzhou Biopharmaceutical R&D Center, Peking Union Medical College & Chinese Academy of Medical Sciences, 2008-
Concurrent Professorship, Nanjing University, Nanjing, China, 2010-2013
Guest Professorship, Zhejiang University, Hangzhou, China, 2014-2017
Member, External Review Committee, University of California, Davis/NIEHS Superfund Basic Research and Training Program, 2009
Consultant, Pfizer, 2013
External Reviewer for Faculty Promotion/Tenure: University of New Mexico (2004); Oregon State University (2006); Wayne State University (2006, 2012, 2014); Georgia Institute of Technology (2007); University of California at Davis (2007; 2011; 2015); University of Kentucky (2008); University of Michigan (2011); Baylor University (2011); University of California at San Diego (2012); University of Kansas (2012); University of Macau, 2014; University of Maryland (2014); Johns Hopkins School of Medicine (2014); University of Texas Medical Branch-Galveston (2015); University of Georgia (2015)

Students and Trainees:

Ph.D. Students Graduated:

- i. Jonathan Sheng (1994-1998; EHS; currently Visiting Scientist at Wadsworth Center)
- ii. Ting Su (1995-2000; EHS; currently Toxicologist at Forest Laboratories in Jersey City; Distinguished Ph.D. Thesis at U. Albany)
- iii. Xiaoliang Zhuo (1996-2001; EHS; currently Research Investigator II, Bristol-Myers Squibb; Distinguished Ph.D. Thesis at U. Albany)
- iv. Guoyu Ling (1999-2005; EHS; currently Physician, St. Luke's Hospital, Chesterfield, MO; Distinguished Ph.D. Thesis at U. Albany)
- v. Yan Weng (2002-2006; EHS; currently Principle Scientist at Pfizer)
- vi. Jaime D'Agostino (2002-2008; EHS; currently Research Scientist at the US EPA)
- vii. Xin Zhou (2004-2009; BMS; currently Research Scientist at Eli Lilly)
- viii. Hong Wu (2004-2009; EHS; currently Principle Scientist at Pfizer)
- ix. Yuan Wei (2003-2010; EHS; currently Associate Professor of Jiang-Su University School of Pharmacy, Zhengjiang, China)
- x. Fang Xie (2005-2011; EHS; currently Research Scientist at GlaxoSmithKline)
- xi. Lei Li (2008-2013; EHS; currently Research Scientist II at Wadsworth Center, NYSDOH)

M.S. Students Graduated:

- i. Tracey L. Cutler (2002-2003, EHS)
- ii. Xiaoshu Zhang (2003-2005, EHS)
- iii. Megan Doret (2005-2007, EHS)

Current Ph.D. Thesis Students:

Matthew Hartog (2010-; EHS/transfer to CNSE, SUNY Poly)
Nataliia Kovalchuk (2011-; EHS)

Current M.S. Thesis Students:

None

Past Postdoctoral Trainees:

Jun Gu (1996-1999; currently Research Scientist IV at the Wadsworth Center, and Assistant Professor at SUNY Albany)
Cheng Liu (1995-96; currently Physician Scientist/Assistant Professor at the Scripps Research Institute)
Jianhua Zhang (1996-99; currently Staff Scientist at the NIH)
Zichun Hua (1995-1996; currently Professor and Director of National Key Laboratory and Dean of School of Life Sciences at Nanjing University, China)
Jiancheng Guo (1999-2002; currently Research Fellow at Columbia University)
Ling Wu (1999-2003; currently Research Scientist at Albany Medical College)
Yinqiu Xie (2000-2002; currently faculty member at Nazarbayev University)
Xiuling Zhang (2000-2004; currently Research Scientist at New York State Cancer Registry)
Huadong Cui (2002-2005, currently Research Scientist at the Albany College of Pharmacy)
Anwar Dunbar (2006-2008, currently Research Scientist at the US EPA)
Cheng Fang (2002-2008, currently Toxicologist at Am. Clinical Solutions)
Xin Zhou (2009-2011; currently Research Scientist at Eli Lilly)
Kunzhi Jia (2010-2013; Ph.D., currently on faculty at Fuzhou University, China)
Vandana Megaraj (2010-2013; currently Research Scientist at Children's Hospital, University of Cincinnati)
Fang Xie (2013-2014; currently Research Scientist at GlaxoSmithKline)
Lei Li (2013-2015; currently Research Scientist II at Wadsworth Center, NYSDOH)

Current Postdoctoral Trainee:

None

Past Visiting Scientists:

Ying Chen, M.D. (1997, 1999), Professor of Otolaryngology, Affiliated Hospital of Shandong Medical University, Jinan, China
Yan Li, M.D. (2006), Professor and Chair, Department II of New Drug Development, Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China
Suping Wang, Ph.D., M.D., (2006-2007), Professor, Dept. of Epidemiology, Shanxi Medical University, Taiyuan, Shanxi, China
Jinping Hu, M.M. (2009-2010), Staff Scientist; Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China
Li Sheng, Ph.D. (2010-2011) Staff Scientist; Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China
Baolian Wang, Ph.D. (2011-2012) Staff Scientist; Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China
Rongrong Wu, M.M., (2011-2012) Staff Scientist; 302 Hospital, Beijing, China
Zhihua Liu, Ph.D., M.D., (2010-2013) Instructor & Attending physician; Southern Medical University, Guangzhou, China
Jing Hu, Ph.D., M.D., (2011-2013) Associate Professor; Southern Medical University, Guangzhou, China
Yanan Wang, M.D., (2012-2013) Visiting Scientist; Suzhou Municipal Hospital, Suzhou, China

Jun Ma, M.D., (2013-2014) Visiting Scientist; Suzhou Municipal Hospital, Suzhou, China
Xiaochen Bao, Ph.D., (2014-2015) Assistant Professor, Department of Diving and
Hyperbaric oxygen medicine, Shanghai Jiaotong University, Shanghai, China

Current Visiting Scientists:

Liang Ding, Ph.D., (2014-) Pharmacist-in-charge, Department of pharmacy, Sun Yat-Sen
Memorial Hospital, Sun Yat-sen University, Guangzhou, China

Other Ph.D. Thesis Committees:

Zeqi Huang - (1995-1997, EHS)
Hillary Sussman - (1996-2002, EHS)
Minfei Luo - (2002-2007, EHS)
Lydia Marquez-Bravo - (2001-2008, EHS)
Laurie Bradley - (2002-2006, EHS)
Li Xu - (2004-2008, EHS)
Shreejith Pillai - (2004-2009, BMS)
Rebecca Stadel - (2005-2008, Albany Med. College)
Whitney Blueher - (2005-2008, Albany Med. College/Ordway Institute)
Lin Tao - (2006-2009, EHS)
Aparna Prasad - (2004-2010, EHS)
Fang Liu - (2006-2010, BMS)
Neal Englert – (2006-2011, EHS)
Yi Zhu – (2008-2013, EHS)
Sarah Engelberth (2014-, Nanobioscience, SUNY Poly)
Khadijah Onanuga-Islam (2014-, Nanobioscience, SUNY Poly)
Martin Tomov (2015-, Nanobioscience, SUNY Poly)
Xiaoyu Fan (2015-, EHS)
Sarah Carratt (2015-, UC Davis)

Other M.S. Thesis Committees:

Andrew Rogers (2003-4, EHS)
Munting Shan (2003-6, EHS)
Shengli Xiong (2005-8, EHS)
Xiaoyu Fan (2013-14, EHS)

Undergraduate Students:

Jessica Prichard (2001, Georgia Institute of Technology - NSF REU)
Sylvia Christie (2005, Rochester University - NSF REU)
Drew Cietek (2014, SUNY Poly CNSE)
Lauren Nardacci (2015, SUNY Binghamton)
Shawn Fidotta (2016-, SUNY Poly CNSE)

High School Students:

Jeffery Chao (2002, Niskayuna High School, Schenectady, NY)
Ming Huang (2009, Bethlehem High School, Delmar, NY)
Brendan Shi (2009, Charlotte Latin School, Charlotte, NC)
Michael Liang (2010, Savanna, GA)
Jay Gu (2011, Bethlehem Central High School)

Kylie McKenna (2015, Bethlehem Central High School)

Grant Support:

Past:

Sponsor: Am. Cancer Soc. IRG-40-33
Title: Role of nasal cytochrome P450 in chemical carcinogenesis
Role: Principal Investigator
Dates of Support: 10/01/91-9/30/92

Sponsor: NIDCD (R03DC01990)
Title: Role of cytochromes P450 in olfactory chemoreception
Role: Principal Investigator
Dates of Support: 05/01/93-04/30/95

Sponsor: NIH (R01DC02640)
Title: P450 and olfactory chemoreception: a molecular approach
Role: Principal Investigator
Dates of Support: 06/01/95-05/31/00

Sponsor: NIH/EPA (R01ES09652)
Title: PAH/metal mixtures-human in vitro mutagenicity studies
Role: Co-Investigator (PI: Kaminsky)
Dates of Support: 11/1/98-10/30/03

Sponsor: NIH (R01CA/AG81243)
Title: Carcinogenicity of B-ring unsaturated estrogens
Role: Co-Investigator (PI: Spink)
Dates of Support: 12/1/99-11/30/03

Sponsor: NIH/FIC (R03TW01177)
Title: Role of human nasal mucosal P450 in head and neck cancer
Role: Principal Investigator
Dates of Support: 09/30/99-09/29/02

Sponsor: NIH/NIDCD (R21DC05487)
Title: Mice with olfactory mucosa-specific Cre gene expression
Role: Principal Investigator
Dates of Support: 4/1/02 to 3/31/04

Sponsor: NIH/NIMH (R21MH65335)
Title: Mice with brain-specific deletion of the CPR gene
Role: Principal Investigator
Dates of Support: 4/1/02 to 3/31/04

Sponsor: US Army BCRP (BC010981)
Title: Role of local P450-dependent metabolism in chemical carcinogen induced DNA adduct formation in mouse mammary gland
Role: Principal Investigator

Dates of Support: 4/1/02 - 3/31/05
 Sponsor: NIH (R21ES013337-01)
 Title: Novel transgenic mouse models for human P450 research
 Role: Principal Investigator
 Dates of Support: 7/1/04-5/30/06

Sponsor: NIA (R03AG026329)
 Title: Role of cytochrome P450 reductase in Alzheimer's disease
 Role: Co-Investigator (PI: J. Gu)
 Dates of Support: 08/05-07/08

Sponsor: 3R01ES007462-13S1
 Title: Olfactory toxicity of environmental agents (ARRA Supplement)
 Role: Principal Investigator
 Dates of Support: 08/09-06/10

Sponsor: Styrene Information and Research Center
 Title: Development of CYP2F1 transgenic and *Cyp2f2*-knockout mice
 Role: Principal Investigator
 Dates of Support: 04/07-03/09

Sponsor: NYS Attorney General's Office (Pharmaceutical Safety Project)
 Title: (1) Safety of Pediatric Dilantin Administration
 (2) Safety of Warfarin Administration
 Role: Principal Investigator
 Dates of Support: 07/07-07/10

Sponsor: NIEHS (R01ES07462)
 Title: Olfactory toxicity of environmental agents
 Role: Principal Investigator
 Dates of Support: 09/94-06/11

Sponsor: NIEHS (R03ES018884)
 Title: Role of local P450 enzymes in chemical carcinogenesis in mouse mammary gland
 Role: Co-Investigator (PI: Gu)
 Dates of Support: 05/10-04/12

Sponsor: Styrene Information and Research Center
 Title: Characterization of CYP2F1 expression
 Role: Principal Investigator
 Dates of Support: 01/12-12/12

Sponsor: NIGMS (T32 GM067545)
 Title: Biomolecular Science and Engineering Training Program
 Role: Member, Coordinating Committee (PI: Dordick, RPI)
 Dates of Support: 04/04-06/15

Sponsor: NCI (R01CA134700)
Title: 2-Amino-9H-pyrido[2,3-b]indole: a potential colorectal carcinogen formed in tobacco smoke
Role: Co-Investigator (PI: Turesky)
Dates of Support: 01/09–12/15

Sponsor: NIDA (R01DA027835)
Title: P450 Epoxygenase Mechanisms of Opioid Analgesia
Role: Co-Investigator/Subcontract PI (PI: Hough, AMC)
Dates of Support: 03/10-02/16

Current:

Sponsor: NIEHS (R01ES020867)
Title: Metabolic mechanisms of naphthalene toxicity in lung
Role: Principal Investigator (MPI: Van Winkle, UC Davis)
Dates of Support: 08/13-04/18

Sponsor: NIEHS (R01ES020867-03S1) *Supplement for Virtual Consortium for Translational/Transdisciplinary Environmental Research (ViCTER)*
Title: Metabolic mechanisms of naphthalene toxicity in lung
Role: Principal Investigator (MPI: Van Winkle, UC Davis)
Dates of Support: 05/15-04/18

Sponsor: NCI (R01CA92596)
Title: Human CYP2A and respiratory tract xenobiotic toxicity
Role: Principal Investigator
Dates of Support: 04/03-07/16

Sponsor: NCI/FDA (R01CA92596-10S1)
Title: P450 and tobacco smoke-induced lung tumorigenesis in mice
Role: Principal Investigator
Dates of Support: 08/12-07/16

Sponsor: NIGMS (R01GM082978)
Title: Intestinal P450 and xenobiotic metabolism
Role: Co-Investigator (PI: Zhang)
Dates of Support: 07/08-06/19

Bibliography:

Peer-Reviewed Original Research Papers:

1. Ding, X., Koop, D. R., Crump, B. L., and Coon, M. J.: Immunochemical identification of cytochrome P-450 isozyme 3a (P-450ALC) in rabbit nasal and kidney microsomes and evidence for differential induction by alcohol. *Mol. Pharmacol.* 30, 370-378, 1986.
2. Ding, X. and Coon, M. J.: Purification and characterization of two unique forms of cytochrome P-450 from rabbit nasal microsomes. *Biochemistry* 27, 8330-8337, 1988.

3. Ding, X. and Coon, M. J.: Cytochrome P-450-dependent formation of ethylene from N-Nitrosoethylamines. *Drug Metab. Dispos.* 16, 265-269, 1988.
4. Ding, X. and Coon, M. J.: Induction of cytochrome P-450 isozyme 3a (P-450IIE1) in rabbit olfactory mucosa by ethanol and acetone. *Drug Metab. Dispos.* 18, 742-745, 1990.
5. Ding, X. and Coon, M. J.: Immunochemical characterization of multiple forms of cytochrome P-450 in rabbit nasal microsomes and evidence for tissue-specific expression of P-450s NMa and NMb. *Mol. Pharmacol.* 37, 489-496, 1990.
6. Williams, D. E., Ding, X., and Coon, M. J.: Rabbit nasal cytochrome P-450 NMa has high activity as a nicotine oxidase. *Biochem. Biophys. Res. Commun.* 166, 945-952, 1990.
7. Ding, X., Porter, T. D., Peng, H-M., and Coon, M. J.: cDNA and derived amino acid sequence of rabbit nasal cytochrome P450NMb (P450IIG1), a unique isozyme possibly involved in olfaction. *Arch. Biochem. Biophys.* 285, 120-125, 1991.
8. Ding, X., Pernecky, S. J., and Coon, M. J.: Purification and characterization of cytochrome P-450IIE2 from hepatic microsomes of neonatal rabbits. *Arch. Biochem. Biophys.* 291, 270-276, 1991.
9. Peng, H-M., Porter, T. D., Ding, X., and Coon, M. J.: Differences in the developmental expression of rabbit cytochromes P-450 2E1 and 2E2. *Mol. Pharmacol.* 40, 58-62, 1991.
10. Chen, Y., Getchell, M. L., Ding, X., and Getchell, T. V.: Immunolocalization of two cytochrome P450 isozymes in rat nasal chemosensory tissue. *Neuroreport*, 3, 749-752, 1992.
11. Ding, X., Peng, H-M., and Coon, M. J.: P450 cytochromes NMa, NMb (2G1), and LM4 (1A2) are differentially expressed during development in rabbit olfactory mucosa and liver. *Mol. Pharmacol.*, 42, 1027-1032, 1992.
12. Ding, X., Peng, H-M., Pernecky, S. J., Davis, C. J., and Coon, M. J.: Induction of P450 cytochromes 2E2, 1A1, and 1A2 by imidazole in neonatal rabbits. *Drug Metab. Dispos.*, 20, 792-796, 1992.
13. Hong, J-Y., Ding, X., Smith, T. J., Coon, M. J., and Yang, C. S.: Metabolism of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK), a tobacco-specific carcinogen, by rabbit nasal microsomes and cytochrome P450s NMa and NMb. *Carcinogenesis* 13, 2141-2144, 1992.
14. Laethem, R. M., Laethem, C. L., Ding, X., and Koop, D. R.: P450-dependent arachidonic acid metabolism in rabbit olfactory microsomes. *J. Pharmacol. Exp. Ther.* 262, 433-438, 1992.
15. Getchell, M. L., Chen, Y., Ding, X., Sparks, D. L., and Getchell, T. V.: Immunohistochemical localization of a cytochrome P450 isozyme in human nasal mucosa: Age-related trends. *Ann. Otol. Rhinol. Laryngol.* 102, 368-374, 1993.
16. Ning, X.-H., Ding, X., Childs, K. F., Bolling, S. F., and Gallagher, K. P.: Flavone improves functional recovery after ischemia in isolated reperfused rabbit hearts. *J. Thorac. Cardiovasc. Surg.*, 105, 541-549, 1993.
17. Peng, H-M., Ding, X., and Coon, M. J.: Isolation and heterologous expression of cloned cDNAs for two rabbit nasal microsomal proteins, CYP2A10 and CYP2A11, that are related to cytochrome P450 NMa. *J. Biol. Chem.*, 268, 17253-17260, 1993.
18. Ding, X. and Coon, M. J.: Steroid metabolism by rabbit olfactory-specific P450 2G1. *Arch. Biochem. Biophys.*, 315, 454-459, 1994.
19. Ding, X., Peng, H-M., and Coon, M. J.: Structure-function analysis of CYP2A10 and CYP2A11, P450 cytochromes that differ in only eight amino acids but have strikingly different activities toward testosterone and coumarin. *Biochem. Biophys. Res. Commun.*, 203, 373-378, 1994.
20. Putt, D., Ding, X., Coon, M. J., and Hollenberg, P. F.: Metabolism of aflatoxin B1 by rabbit and rat nasal microsomal and purified P450s. *Carcinogenesis*, 16, 1411-1417, 1995.

21. Sheng, J., and Ding, X.: Identification of human genes related to olfactory-specific P450 2G1. *Biochem. Biophys. Res. Commun.*, 218, 570-574, 1996.
22. Ding, X., Spink, D. C., Bhama, J. K., Sheng J., A. D. N. Vaz, and Coon, M. J.: Metabolic activation of 2,6-dichlorobenzonitrile, an olfactory-specific toxicant, by rat, rabbit, and human cytochromes P450. *Mol. Pharmacol.*, 49, 1113-1121, 1996.
23. Su, T., Sheng, J., Lipinskas, T. W., and Ding, X.: Expression of CYP2A genes in rodent and human nasal mucosa. *Drug Metab. Dispos.*, 24, 884-890, 1996.
24. Liu, C., Zhuo, X., Gonzalez, F. J., and Ding, X.: Baculovirus-mediated expression and characterization of rat CYP2A3 and human CYP2A6: Role in metabolic activation of nasal toxicants. *Mol. Pharmacol.*, 50, 781-788, 1996.
25. Thornton-Manning, J. R., Hotchkiss, J. A., Ding, X., and Dahl, A. R.: Nasal cytochrome P450 2A: identification, cellular localization, and metabolic activity toward hexamethylphosphoramide, a known nasal carcinogen. *Toxicol. Appl. Pharmacol.*, 142, 22-30, 1997.
26. Hua, Z., Zhang, Q-Y., Su, T., Lipinskas, T. W., and Ding, X.: cDNA cloning, heterologous expression, and characterization of mouse CYP2G1, an olfactory-specific steroid hydroxylase. *Arch. Biochem. Biophys.*, 340, 208-214, 1997.
27. Zhang, Q-Y., Ding, X., and Kaminsky, L. S.: cDNA cloning, heterologous expression, and characterization of rat intestinal CYP2J4. *Arch. Biochem. Biophys.*, 340, 270-278, 1997.
28. Gu, J., Walker, V. E., Lipinskas, T. W., Walker D. M., and Ding, X.: Intraperitoneal administration of coumarin causes tissue-selective depletion of cytochromes P450 and cytotoxicity of the olfactory mucosa. *Toxicol. Appl. Pharmacol.* 146, 134-143, 1997
29. Genter, M. B., Liang, H. C., Gu, J., Ding, X., Negishi, M., McKinnon, R. A., and Nebert, D. W.: Role of CYP2A5 and 2G1 in acetaminophen metabolism and toxicity in the olfactory mucosa of *cyp1A2(-/-)* mouse. *Biochem. Pharmacol.* 55, 1819-1826, 1998.
30. Gu, J., Zhang, Q-Y., Genter, M. B., Lipinskas, T. W., Negishi, M., Nebert, D. W., and Ding, X.: Purification and characterization of heterologously expressed mouse CYP2A5 and CYP2G1, role in metabolic activation of acetaminophen and 2,6-dichlorobenzonitrile in mouse olfactory mucosa. *J. Pharmacol. Expt. Ther.*, 285, 1287-1295, 1998.
31. Zhang, Q., Raner, G., Ding, X., Coon, M. J., and Kaminsky, L. S.: Characterization of cytochrome P450 2J4: expression in rat small intestine and role in retinoic acid biotransformation from retinal. *Arch. Biochem. Biophys.*, 353, 257-264, 1998.
32. Su, T., He, W., Gu, J., Lipinskas, T. W., and Ding, X.: Differential xenobiotic induction of CYP2A5 in mouse liver, kidney, lung, and olfactory mucosa. *Drug Metab. Dispos.*, 26, 822-824, 1998.
33. Zhang, J., and Ding, X.: Identification and characterization of a novel tissue-specific transcriptional activating element in the 5'-flanking region of the olfactory mucosal cytochrome P450 2A3 (*CYP2A3*) gene. *J. Biol. Chem.* 273, 23454-23462, 1998.
34. Zhuo, X., Gu, J., Zhang, Q-Y., Spink, D. C., Kaminsky, L. S., and Ding, X.: Biotransformation of coumarin by rodent and human cytochrome P450: metabolic basis of tissue-selective toxicity in the olfactory mucosa of rats and mice. *J. Pharmacol. Expt. Ther.* 288, 463-471, 1999.
35. Zhang, Q-Y., Ding, X., Dunbar, D., Cao, L., and Kaminsky, L. S.: Induction of rat small intestinal cytochrome P450 2J4. *Drug Metab. Dispos.*, 27, 1123-1127, 1999.
36. Gu, J., Dudley, C., Su, T., Spink, D. C., Zhang, Q-Y., Moss, R. L., and Ding, X.: Cytochrome P450 and steroid hydroxylase activity in mouse olfactory and vomeronasal mucosa. *Biochem. Biophys. Res. Commun.*, 266, 262-267, 1999.
37. Von Weyarn, L. B., Felicia, N. D., Ding, X., and Murphy, S. E.: N-Nitrosobenzylmethylamine hydroxylation and coumarin 7-hydroxylation: catalysis by rat

- esophageal microsomes and cytochrome P450 2A3 and 2A6 enzymes. *Chem. Res. Toxicol.*, 12, 1254-1261, 1999.
38. Meng, Q., Su, T., Olivero, O. A., Poirier, M. C., Shi, X., Ding, X., and Walker, V. E.: Relationships between DNA incorporation, mutant frequency, and loss of heterozygosity at the TK locus in human lymphoblastoid cells exposed to 3'-azido-3'-deoxythymidine. *Toxicological Sciences*, 54, 322-329, 2000.
 39. Zhang, J., Zhang, Q-Y., Guo, J., Zhou, Y., and Ding, X.: Identification and functional characterization of a conserved, nuclear factor 1-like element in the proximal promoter region of *CYP1A2* gene specifically expressed in the liver and olfactory mucosa. *J. Biol. Chem.*, 275, 8895-8902, 2000.
 40. Gu, J., Su, T., Chen, Y., Zhang, Q-Y., and Ding, X.: Expression of biotransformation enzymes in human fetal olfactory mucosa: potential roles in developmental toxicity. *Toxicol. Appl. Pharmacol.*, 165, 158-162, 2000.
 41. Sheng, J.¹, Guo, J.¹, Hua, Z., Caggana, M., and Ding, X.: Characterization of human *CYP2G* genes: widespread loss-of-function mutations and genetic polymorphism. *Pharmacogenetics*, 10, 667-678, 2000. (¹Equal contributions)
 42. Xie, Q., Zhang, Q-Y., Zhang, Y., Su, T., Gu, J., Kaminsky, L. S., and Ding, X.: Induction of mouse *CYP2J* by pyrazole in the eye, kidney, liver, lung, olfactory mucosa, and small intestine, but not in the heart. *Drug Metab. Dispos.*, 28, 1311-1316, 2000.
 43. Su, T., Bao, Z., Zhang, Q-Y., Smith, T. J., Hong, J-Y., and Ding, X.: Human *CYP2A13*: predominant expression in the respiratory tract and its high efficiency metabolic activation of a tobacco-specific carcinogen, 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone. *Cancer Res.*, 60, 5074-5079, 2000.
 44. Murphy, S. E., Isaac, I. S., Ding, X., and McIntee, E. J.: Specificity of cytochrome P450 2A3-catalyzed alpha-hydroxylation of N'-nitrosornicotine enantiomers. *Drug Metab. Dispos.*, 28, 1263-1266, 2000.
 45. Spink, D. C., Spink, B. C., Zhuo, X., Hussain, M. M., Gierthy, J. F., and Ding, X.: NADPH- and hydroperoxide-supported 17 beta-estradiol hydroxylation catalyzed by a variant form (432L, 453S) of human cytochrome P450 1B1. *J. Steroid Biochem. Mol. Biol.*, 74, 11-18, 2000.
 46. Sheng, J., Hua, Z., Guo, J., Caggana, M., and Ding, X.: Identification of a new human *CYP2A* gene fragment with close linkage to *CYP2GP1* and *CYP2B7* on chromosome 19. *Drug Metab. Dispos.*, 29, 4-7, 2001.
 47. Spivack, S. D., Hurteau, G. J., Reilly, A., Aldous, K. M., Ding, X., and Kaminsky, L. S.: *CYP1B1* expression in human lung. *Drug Metab. Dispos.*, 29, 916-922, 2001.
 48. Zhuo, X., Schwob, J., Swiatek, P. J., and Ding, X.: Mouse *CYP2G1* gene: promoter structure and tissue-specific expression of a *CYP2G1-LacZ* fusion gene in transgenic mice. *Arch. Biochem. Biophys.*, 391, 127-136, 2001.
 49. Chen, S. C., Zhou, L., Ding, X., and Mirvish, S. S.: Depentylation of the rat esophageal carcinogen, methyl-n-pentyl nitrosamine, by microsomes from various human and rat tissues and by cytochrome P450 2A3. *Drug Metab. Dispos.*, 29, 1221-1228, 2001.
 50. Xie, Y., Madelian, V., Zhang, J., Ling, G., and Ding, X.: Activation of the NPTA element of the *CYP2A3* gene by NFI-A2, a nasal mucosa-selective nuclear factor 1 isoform. *Biochem. Biophys. Res. Commun.*, 289, 1225-1228, 2001.
 51. Su, T., Zhang, Q-Y., Zhang, J., and Ding, X.: Expression of rat *CYP2A3* gene in transgenic mice. *Drug Metab. Dispos.*, 30, 548-552, 2002.
 52. Zhang, X., Su, T., Zhang, Q-Y., Gu, J., Caggana, M., Li, H., and Ding, X.: Genetic polymorphisms of the human *CYP2A13* gene: identification of SNPS and functional characterization of an Arg257Cys variant. *J. Pharmacol. Expt. Ther.*, 302:416-423, 2002.

53. Gu, J., Weng, Y., Zhang, Q-Y., Cui, H., Behr, M., Wu, L., Yang, W., Zhang, L., and Ding, X.: Liver-specific deletion of the NADPH-cytochrome P450 reductase gene: impact on plasma cholesterol homeostasis and the function and regulation of microsomal cytochrome P450 and heme oxygenase. *J. Biol. Chem.*, 278, 25895–25901, 2003.
54. Zhang, X., Chen, Y., Liu, Y., Reng, X., Zhang, Q-Y., Caggana, M., and Ding, X.: Single nucleotide polymorphisms of the human CYP2A13 gene: evidence for a null allele. *Drug Metab. Dispos.* 31, 1081-1085, 2003.
55. Wu, L., Gu, J., Weng, Y., Kluetzman, K., Swiatek, P., Behr, M., Zhang, Q-Y., Zhuo, X., Xie, Q., and Ding, X.: Conditional knockout of the mouse NADPH-cytochrome P450 reductase gene. *Genesis*, 36, 177-181, 2003.
56. Chen, Y., Liu, Y., Su, T., Ren, X., Shi, L., Liu, D, Gu, J., Zhang, Q-Y. and Ding, X.: Immunoblot analysis and immunohistochemical characterization of CYP2A expression in human olfactory mucosa. *Biochem. Pharmacol.* 66, 1245-1251, 2003.
57. Jalas, J. R., Ding, X., and Murphy, S. E.: Comparative metabolism of the tobacco-specific nitrosamines 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) and 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol (NNAL) by rat cytochrome P450 2A3 and human cytochrome P450 2A13. *Drug Metab. Dispos.*, 31, 1199-1202, 2003.
58. Zhuo, X., Gu, J., Behr, M., Swiatek, P., Cui, H., Zhang, Q-Y., Xie, Y., Collins, D. N., and Ding, X.: Targeted deletion of the olfactory mucosa-specific CYP2G1 gene: impact on acetaminophen toxicity in the lateral nasal gland and neighboring effects on CYP2A5 expression in the liver and kidney. *J. Pharmacol. Expt. Ther.*, 308, 719-728, 2004.
59. Morris, C. R., Chen, S. C., Zhou, L., Schopfer, L. M., Ding, X., and Mirvish, S. S.: Inhibition by allyl sulfides and phenethyl isothiocyanate of methyl-n-pentylnitrosamine depentylation by rat esophageal microsomes, human and rat CYP2E1 and rat CYP2A3. *Nutrition and Cancer*, 48, 54-63, 2004.
60. Zhao, S., Narang, A., Ding, X., and Eadon, G.: Characterization and quantitative analysis of DNA adducts formed from lower chlorinated PCB-derived quinones. *Chem. Res. Toxicol.*, 17, 502-511, 2004.
61. Ling, G., Hauer, C., Gronostajski, R. M., Pentecost, B., and Ding, X.: Transcriptional regulation of rat CYP2A3 by nuclear factor 1: identification of a novel NFI-A isoform, and evidence for tissue-selective interaction of NFI with the CYP2A3 promoter in vivo. *J. Biol. Chem.* 279, 27888-27895, 2004.
62. Zhang, X., Caggana, M., Cutler, T. L., and Ding, X.: Development of a real-time PCR-based method for the measurement of relative allelic expression, and identification of CYP2A13 alleles with decreased expression in human lung. *J. Pharmacol. Expt. Ther.* 311, 373-381, 2004.
63. He, X-Y., Shen, J., Hu, W-Y., Ding, X., Lu, A. Y. H., and Hong, J-Y.: Identification of Val¹¹⁷ and Arg³⁷² as critical amino acid residues for the activity difference between human CYP2A6 and CYP2A13 in coumarin 7-hydroxylation. *Arch. Biochem. Biophys.*, 427, 143-153, 2004.
64. He, X-Y., Shen, J., Ding, X., Lu, A. Y. H., and Hong, J-Y.: Identification of critical amino acid residues of human CYP2A13 for the metabolic activation of NNK, a tobacco-specific carcinogen. *Drug Metab. Dispos.*, 32, 1516-1521, 2004
65. Wu, L., Gu, J., Cui, H., Zhang, Q-Y., Behr, M., Fang, C., Weng, Y., Kluetzman, K., Swiatek, P., Yang, W., Kaminsky, L. S., and Ding, X.: Transgenic mice with a hypomorphic NADPH-cytochrome P450 reductase gene: effects on development, reproduction, and microsomal cytochrome P450. *J. Pharmacol. Expt. Ther.* 312, 35-43, 2005
66. Von Weymarn, L. B., Zhang, Q-Y., Ding, X., and Hollenberg, P. F.: Effects of 8-methoxypsoralen on cytochrome P450 2A13. *Carcinogenesis*, 26, 621-629, 2005.

67. Gu, J., Cui, H., Behr, M., Zhang, L., Zhang, Q-Y., Yang, W., Hinson, J. A., and Ding, X.: In vivo mechanisms of tissue-selective drug toxicity: effects of liver-specific knockout of the NADPH-cytochrome P450 reductase gene on acetaminophen toxicity in kidney, lung, and nasal mucosa. *Mol. Pharmacol.*, 67, 623-630, 2005.
68. Bao, Z. P., He, X-Y., Ding, X., Prabhu, S., and Hong, J-Y.: Metabolism of nicotine and cotinine by human cytochrome P450 2A13. *Drug Metab. Dispos.*, 33, 258-261, 2005.
69. Wong, H. L. ¹, Zhang, X. ¹, Zhang, Q-Y., Gu, J., Ding, X., Hecht, S. S., and Murphy, S. E.: Metabolic activation of the tobacco carcinogen 4-(methylnitrosamino)-(3-pyridyl)-1-butanone by cytochrome P450 2A13 in human fetal nasal microsomes. *Chem. Res. Toxicol.*, 18, 913-918, 2005. (¹Equal contributions)
70. Weng, Y., DiRusso, C. C., Reilly, A. A., Black, P. N., and Ding, X.: Hepatic gene expression changes in mouse models with liver-specific deletion or global suppression of the NADPH-cytochrome P450 reductase gene: mechanistic implications for the regulation of microsomal cytochrome P450 and the fatty liver phenotype. *J. Biol. Chem.*, 280, 31686-31698, 2005.
71. Zhang, X., Zhang, Q-Y., Liu, D., Su, T., Weng, Y., Ling, G., Chen, Y., Gu, J., Schilling, B., and Ding, X.: Expression of cytochrome P450 and other biotransformation genes in fetal and adult human nasal mucosa. *Drug Metab. Dispos.* 33, 1423-1428, 2005.
72. Zhang, Q-Y., Gu, J., Su, T., Cui, H., Zhang, X., D'Agostino, J., Zhuo, X., Yang, W., Swiatek, P., and Ding, X.: Generation and characterization of a transgenic mouse model with hepatic expression of human CYP2A6. *Biochem. Biophys. Res. Commun.* 338, 318-324, 2005.
73. Ling, G., Wei, Y., and Ding, X.: Transcriptional regulation of human CYP2A13 expression in the respiratory tract by C/EBP and epigenetic modulation. *Mol. Pharmacol.* 71, 807-816, 2007.
74. Weng, Y., Fang, C., Turesky, R. J., Behr, B., Kaminsky, L. S., and Ding, X.: Determination of the role of target tissue metabolism in lung carcinogenesis using conditional cytochrome P450 reductase-null mice. *Cancer Res.* 67, 7825-7832, 2007. [[Featured on Cover](#)]
75. Zhang, Q-Y., Kaminsky, L. S., Dunbar, D., and Ding, X.: Role of small intestinal cytochrome P450 in the bioavailability of oral nifedipine. *Drug Metab. Dispos.* 35, 1617-1623, 2007.
76. Zhang, X., D'Agostino, J., Wu, H., Zhang, Q-Y., von Weymarn, L., Murphy, S. E., and Ding, X.: CYP2A13: Variable expression and role in human lung microsomal metabolic activation of the tobacco-specific carcinogen 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone. *J. Pharmacol. Expt. Ther.* 323, 570-578, 2007.
77. Gu, J., Chen, C-S., Wei, Y., Fang, C., Xie, F., Kannan, K., Yang, W., Waxman, D. J., and Ding, X.: A mouse model with liver-specific deletion and global suppression of the NADPH-cytochrome P450 reductase gene: characterization and utility for in vivo studies of cyclophosphamide disposition. *J. Pharmacol. Expt. Ther.* 321, 9-17, 2007. PMC2657721
78. Fang, C., Behr, M., Xie, F., Lu, S., Doret, M., Luo, H., Yang, W., Aldous, K., Ding, X., and Gu, J.: Mechanism of chloroform-induced renal toxicity: non-involvement of hepatic cytochrome P450-dependent metabolism. *Toxicol. Appl. Pharmacol.* 227, 48-55, 2008. PMC2274901
79. Dostalek, M., Hardy, K. D., Milne, G. L., Morrow, J. D., Chen, C., Gonzalez, F. J., Gu, J., Ding, X., Martin, M. V., and Guengerich, F. P.: Development of oxidative stress by cytochrome P450 induction in rodents is selective for barbiturates and related to loss of pyridine nucleotide-dependent protective systems. *J. Biol. Chem.*, 283, 17147-17157, 2008. PMC2427356

80. Fang, C., Gu, J., Xie, F., Behr, M., Yang, W., Abel, E. D., and Ding, X.: Deletion of the NADPH-cytochrome P450 reductase gene in cardiomyocytes does not protect mice against doxorubicin-mediated cardiac toxicity. *Drug Metab. Dispos.*, 36, 1722-1828, 2008. [PMC2575052](#)
81. D'Agostino, J., Zhang, X., Wu, H., Ling, G., Zhang, Q-Y., and Ding, X.: Characterization of CYP2A13*2, a variant cytochrome P450 allele previously found to be associated with decreased incidence of lung adenocarcinoma in smokers. *Drug Metab. Dispos.* 36, 2316–2323, 2008. [PMC2597635](#)
82. Zhang, Q.-Y., Fang, C., Dunbar, D., Zhang, J., Kaminsky, L.S., and Ding, X. An intestinal epithelium-specific cytochrome P450 reductase-knockout mouse model: direct evidence for a role of intestinal cytochromes P450 in first-pass clearance of oral nifedipine. *Drug Metab. Dispos.* 37, 651–657, 2009. [PMC2645477](#)
83. Zhou, X., Zhang, X., Weng, Y., Fang, C., Kaminsky, L., and Ding, X.: High abundance of testosterone and salivary androgen-binding protein in the lateral nasal gland of male mice. *J. Steroid Biochem. Mol. Biol.* 117, 81-86, 2009. [PMC2749885](#)
84. D'Agostino, J., Zhuo, X., Shadid, M., Morgan, D. G., Zhang, X., Shu, Y.-Z., Humphreys, W. G., Yost, G. S., and Ding, X.: The pneumotoxin 3-methylindole is a substrate as well as a mechanism-based inactivator of CYP2A13, a human cytochrome P450 enzyme preferentially expressed in the respiratory tract. *Drug Metab. Dispos.* 37, 2018-27, 2009. [PMC2769036](#)
85. Wu, H., Zhang, X., Ling, G., D'Agostino, J., and Ding, X.: Mechanisms of differential expression of the CYP2A13 7520C and 7520G alleles in human lung: allelic expression analysis for CYP2A13 heterogeneous nuclear RNA, and evidence for the involvement of multiple cis-regulatory single nucleotide polymorphisms. *Pharmacogenetics Genomics.* 19, 852–863, 2009. [PMC2875259](#)
86. Sneitz, N., Court, M. H., Zhang, X., Laajanen, K., Yee, K., Dalton, P., Ding, X., and Finel M.: Human UDP-glucuronosyltransferase UGT2A2: cDNA construction, expression, and functional characterization in comparison with UGT2A1 and UGT2A3. *Pharmacogenetics Genomics.* 19, 923–934, 2009. [PMC2928392](#)
87. Zhou, X., Zhuo, X., Xie, F., Kluetzman, K., Shu, Y.-Z., Humphreys, W. G., and Ding, X.: Role of CYP2A5 in the clearance of nicotine and cotinine: insights from studies on a Cyp2a5-null mouse model. *J. Pharmacol. Expt. Ther.* 332, 578-587, 2010. [PMC2812111](#)
88. Conroy, J. L.¹, Fang, C.¹, Gu, J., Zeitlin, S. O., Yang, W., Yang, J., VanAlstine, M. A., Nalwalk, J. W., Albrecht, P. J., Mazurkiewicz, J. E., Snyder-Keller, A., Shan, Z., Zhang, S.-Z., Wentland, M. P., Behr, M., Knapp, B. I., Bidlack, J. M., Zuiderveld, O. P., Leurs, R., Ding, X., and Hough, L. B.: Opioids activate brain analgesic circuits through cytochrome P450/epoxygenase signaling. *Nature Neurosci.*, 13, 284-286, 2010. [PMC2828325](#) (¹Equal contributions)
89. Weng, Y., Xie, F., Xu, L., Spink, D. C., and Ding, X.: Analysis of testosterone and dihydrotestosterone in mouse tissues by liquid chromatography–electrospray ionization–tandem mass spectrometry. *Anal. Biochemistry*, 402, 121–128, 2010. [PMC2876209](#)
90. Wei, Y., Zhou, X., Fang, C., Li, L., Kluetzman, K., Yang, W., Zhang, Q-Y., and Ding, X.: Generation of a mouse model with a reversible hypomorphic cytochrome P450 reductase gene: utility for tissue-specific rescue of the reductase expression, and insights from a resultant mouse model with global suppression of P450 reductase expression in extrahepatic tissues. *J. Pharmacol. Expt. Ther.* 334, 69-77, 2010. [PMC2912046](#)
91. Weems, J. M., Lamb, J. G., D'Agostino, J., Ding, X., and Yost, G. S.: Potent mutagenicity of 3-methylindole requires pulmonary cytochrome P450-mediated bioactivation: a comparison to the prototype cigarette smoke mutagens B(a)P and NNK. *Chem. Res. Toxicol.* 23, 1682–1690, 2010. [PMC2981624](#)

92. Xie, F., Zhou, X., Behr, M., Fang, C., Horii, Y., Gu, J., Kannan, K., and Ding, X.: Mechanisms of olfactory toxicity of the herbicide 2,6-dichlorobenzonitrile: essential roles of CYP2A5 and target tissue metabolic activation. *Toxicol. Appl. Pharmacol.* 249, 101–106, 2010. [PMC2956786](#)
93. Sheng, L. Ding, X., Ferguson, M., McCallister, M., Rhoades, R., Maguire, M., Ramesh, A., Aschner, M., Campbell, D., Levitt P., and Hood D. B.: Prenatal polycyclic aromatic hydrocarbon exposure leads to behavioral deficits and downregulation of receptor tyrosine kinase, MET. *Tox. Sci.* 118, 625–634, 2010. [PMC2984527](#)
94. Gonzalez, M., Sealls, W., Jesch, E. D., Brosnan, M. J., Ladunga, I., Ding, X., Black, P. N., and DiRusso, C. C.: Defining a relationship between dietary fatty acids and the cytochrome P450 system in a mouse model of fatty liver disease. *Physiol. Genomics.* 43:121-35, 2011. [PMC3055711](#)
95. Hough, L. B., Nalwalk, J. W., Yang, J., Conroy, J. L., VanAlstine, M. A., Yang, W., Gargano, J., Shan, Z., Zhang, S.-Z., Wentland, M. P., Phillips, J. G., Knapp, B. I., Bidlack, J. M., Zuiderveld, O. P., Leurs, R., and Ding, X.: Brain P450 epoxygenase activity is required for the antinociceptive effects of impropgan, a non-opioid analgesic. *Pain,* 152:878–887, 2011. [PMC3065546](#)
96. Zhou, X., Wei, Y., Xie, F., Laukaitis, C. M., Karn, R. C., Kluetzman, K., Gu, J., Zhang, Q.-Y., Roberts, D. W., and Ding, X.: A novel defensive mechanism against acetaminophen toxicity in the mouse lateral nasal gland: role of CYP2A5-mediated regulation of testosterone homeostasis and salivary androgen-binding protein expression. *Mol. Pharmacol.* 79:710–723, 2011. [PMC3063730](#)
97. Xie, F., Zhou, X., Genter, M., Behr, M., Gu, J., and Ding, X.: The tissue-specific toxicity of methimazole in the mouse olfactory mucosa is partly mediated through target-tissue metabolic activation by CYP2A5. *Drug Metab. Dispos.* 39:947–951, 2011. [PMC3100904](#)
98. Zhang, X., Li, L., Ding, X., and Kaminsky, L. S.: Identification of cytochrome P450 oxidoreductase gene variants that are significantly associated with the interindividual variations in warfarin maintenance dose. *Drug Metab. Dispos.* 39:1433-1439, 2011. [PMC3141882](#)
99. Hollander, M. C., Zhou, X., Maier, C. R., Patterson, A. D., Ding, X., and Dennis, P. A.: A *Cyp2a* polymorphism predicts susceptibility to NNK-induced lung tumorigenesis in mice. *Carcinogenesis* 32:1279–1284, 2011. [PMC3149208](#)
100. Li, L.¹, Wei, Y.¹, Van Winkle, L., Zhang, Q.-Y., Zhou, X., Hu, J., Xie, F., Kluetzman, K., and Ding, X.: Generation and characterization of a *Cyp2f2*-null mouse and studies on the role of CYP2F2 in naphthalene-induced toxicity in the lung and nasal olfactory mucosa. . *J. Pharmacol. Expt. Ther.* 339:62–71, 2011. (¹Equal contribution) [PMC3186285](#)
101. Court, M. H., Zhang, X., Ding, X., Yee, K., Hesse, L., and Finel, M.: Quantitative distribution of mRNAs encoding the 19 human UDP-glucuronosyltransferase enzymes in 26 adult and 3 fetal tissues. *Xenobiotica,* 42:266-277, 2012
102. Zhou, X., D’Agostino, J., Li, L., Moore, C. D., Yost, G. S., and Ding, X.: Respective roles of CYP2A5 and CYP2F2 in the bioactivation of 3-methylindole in mouse olfactory mucosa and lung: studies using *Cyp2a5*-null and *Cyp2f2*-null mouse models. *Drug Metab. Dispos.* 40:642-647, 2012. [PMC3310420](#) [Featured on Cover]
103. Zhou, X., D’Agostino, J., Xie, F., and Ding, X.: Role of CYP2A5 in the bioactivation of the lung carcinogen 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone in mice. *J. Pharmacol. Expt. Ther.* 341:233-241, 2012. [PMC3310698](#)
104. Bai, Y., Yang, J., Zhou, X., Ding, X., Eisele, L. E., and Bai, G. *Mycobacterium tuberculosis* Rv3586 (DacA) is a diadenylate cyclase that converts ATP or ADP into c-di-AMP. *PLoS ONE* 7:e35206, 2012. [PMC3328451](#)

105. Wei, Y., Wu, H., Li, L., Liu, Z., Zhou, X., Zhang, Q.-Y., Weng, Y., D'Agostino, J., Ling, G., Zhang, X., Kluetzman, K., Yao, Y., and Ding, X.: Generation and characterization of a CYP2A13/2B6/2F1 transgenic mouse model. *Drug Metab. Dispos.* 40:1144–1150, 2012. [PMC3362791](#)
106. D'Agostino, J., Ding, X., Zhang, P., Jia, K., Fang, C., Zhu, Y., Spink, D., C., and Zhang, Q.-Y.: Potential biological functions of cytochrome P450 reductase-dependent enzymes in the small intestine: a novel link to the expression of the major histocompatibility complex class II genes. *J. Biol. Chem.* 287:17777–17788, 2012. [PMC3366852](#)
107. Lin, Y., Yao, Y., Liu, S., Wang, L., Moorthy, B., Xiong, D., Cheng, T., Ding, X., and Gu, J.: Role of mammary epithelial and stromal P450 enzymes in the clearance and metabolic activation of 7,12-dimethylbenz(a)anthracene in mice. *Toxicol. Lett.* 212:97-105, 2012. [PMC3668431](#)
108. Fan, J., Ding, X., and Y. Jiang.: Pre-clinical acute toxicity and sub-acute toxicity study on a novel recombinant human granulocyte-colony stimulating factor a (rhG-CSFa). *Fudan U. J. Med. Sci.* 39:25-30, 2012.
109. Fan, J., Ding, X., and Y. Jiang.: Expression, refolding, and purification of recombinant human stem cell factor and determination of its effect on ex vivo expansion of cord blood. *J. Clin. Med. in Practice* 16:20-23, 2012.
110. Fang, C., Bolivar, V. J., Gu, J., Yang, W., Zeitlin, S. O., and Ding, X.: Neurobehavioral abnormalities in a brain-specific NADPH-cytochrome P450 reductase knockout mouse model. *Neuroscience*, 218:170–180, 2012. [PMC3393838](#)
111. Bardowell, S. A., Ding, X., and Parker, R. S.: Disruption of P450-mediated vitamin E hydroxylase activities alters vitamin E status in tocopherol supplemented mice and reveals extra-hepatic vitamin E metabolism. *J. Lipid Res.*, 53:2667-76, 2012. [PMC3494260](#)
112. Fan, J., Ding, X., and Y. Jiang.: A novel monoclonal antibody of human stem cell factor inhibits umbilical cord blood stem cell ex vivo expansion. *J. Hematol. Oncol.*, 5:73, 2012. [PMC3544603](#)
113. Wei, Y.¹, Li, L.¹, Zhou, X., Zhang, Q.-Y., Dunbar, A., Liu, F., Kluetzman, K., Yang, W., and Ding, X.: Generation and characterization of a novel *Cyp2a(4/5)bgs*-null mouse model. *Drug Metab. Dispos.* 41:132–140, 2013 (¹Equal contribution) [PMC3533424](#)
114. Zhang, P., Jia, K., Fang, C., Zhou, X., Ding, X., and Zhang, Q.-Y.: Dietary regulation of mouse intestinal P450 expression and drug metabolism. *Drug Metab. Dispos.* 41:529-35, 2013 [PMC3558856](#)
115. Lee, C., Ding, X., and Riddick, D. S.: The role of cytochrome P450-dependent metabolism in the regulation of mouse hepatic growth hormone signaling components and target genes by 3-methylcholanthrene. *Drug Metab. Dispos* 41:457-65, 2013 [PMC3558870](#)
116. Xie, F., D'Agostino, J., Zhou, X., and Ding, X.: Bioactivation of the nasal toxicant 2,6-dichlorobenzonitrile: an assessment of metabolic activity in human nasal mucosa and identification of indicators of exposure and potential toxicity. *Chem. Res. Toxicol.*, 26:388-98, 2013, [PMC3602354](#)
117. Zhang, Y., Dong, F., Zhang, N., Cheng, H., Pang, Y., Wang, X., Xu, J., Ding, X., Cheng, T., Gu, J., and Yuan, W.: Suppression of cytochrome P450 reductase enhances long-term hematopoietic stem cell repopulation efficiency in mice. *PLoS ONE*, 8:e69913, 2013, [PMC3724780](#)
118. Yao, Y., Liu, S., Wang, Y., Yuan, W., Ding, X., Cheng, T., Shen, Q., and Gu, J.: Suppression of cytochrome P450 reductase expression promotes astrogliosis in subventricular zone in of adult mice. *Neurosci. Lett.*, 548:84–89, 2013, [PMC3731042](#)
119. Xie, F., Fang, C., Schnittke, N., Schwob, J., and Ding, X.: Mechanisms of permanent loss of olfactory receptor neurons induced by the herbicide 2,6-dichlorobenzonitrile: effects on

- stem cells and noninvolvement of the inflammatory cytokine IL-6. *Toxicol. Appl. Pharmacol.*, 272:598–607, 2013, [PMC3805741](#)
120. Liu, S., Yao, Y., Lu, S., Aldous, K., Ding, X., Mei, C., and Gu, J.: The role of renal proximal tubule P450 enzymes in chloroform-induced nephrotoxicity: utility of renal specific P450 reductase knockout mouse models. *Toxicol. Appl. Pharmacol.*, 272:230-237, 2013, [PMC3775882](#)
121. Wu, H., Liu, Z., Ling, G., Lawrence, D. and Ding, X.: Transcriptional suppression of CYP2A13 expression by lipopolysaccharide in cultured human lung cells and the lungs of a CYP2A13-humanized mouse model. *Tox. Sci.*, 135:476-485, 2013, [PMC3807623](#)
122. Li, L., Jia, K., Zhou, X., McCallum, S., Hough, L. B., and Ding, X.: Impact of nicotine metabolism on nicotine's pharmacological effects and behavioral responses: insights from a *Cyp2a(4/5)bgs*-null mouse. *J. Pharmacol. Exp. Ther.*, 347:746-754, 2013, [PMC3836308](#)
123. Lee, C., Ding, X., and Riddick, D. S.: Down-regulation of mouse hepatic cytochrome P450 3A protein by 3-methylcholanthrene does not require cytochrome P450-dependent metabolism. *Drug Metab. Dispos.*, 41:1782-6, 2013, [PMC3781373](#)
124. Hu, J., Li, S., Li, L., Zhou, X., Xie, F., Li, Y., and Ding, X.: Mechanisms of olfactory toxicity of naphthalene: essential roles of CYP2A5 and target-tissue metabolic activation. *Drug Metab. Dispos.*, 42:23-7, 2014, [PMC3876791](#) [Featured on Cover]
125. Zhu, Y., Ding, X., Fang, C., and Zhang, Q.-Y.: Regulation of intestinal cytochrome P450 expression by hepatic cytochrome P450 function: impact on systemic drug exposure and possible involvement of intestinal fibroblast growth factor 15 in the regulation. *Mol. Pharmacol.* 85:139-47, 2014, [PMC3868902](#)
126. Megaraj, V., Zhou, X., Xie, F., Liu, Z., Yang, W., and Ding, X.: Role of CYP2A13 in the bioactivation and lung tumorigenicity of the tobacco-specific lung procarcinogen 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone: in vivo studies using a CYP2A13-humanized mouse model. *Carcinogenesis*, 35:131–137, 2014, [PMC3871935](#)
127. Shen, S., Li, L., Ding, X., and Zheng, J.: Metabolism of styrene to styrene oxide and vinylphenols in cytochrome P450 2F2- and P450 2E1-knockout mouse liver and lung microsomes. *Chem. Res. Toxicol.*, 27:27-33, 2014. [PMC4041473](#)
128. Shi, K., Jie, Z., Chu, C., Zhang, Q.-Y., Ding, X., and Jiang, Y.: A novel recombinant human granulocyte colony-stimulating factor (G-CSFa) enhances peripheral platelet recovery in mice exposed to radiotherapy and has no immunogenicity in rats. *J. Carcinog. Mutagen.* 5:162. doi:10.4172/2157-2518.1000162, 2014
129. Cheng, W., Zhang, R., Yao, C., Jia, K., Yang, B., Du, P., Chen, J., He, L., Liu, Z., Ding, X., and Hua, Z.: A critical role of FADD (Fas-Associated protein with Death Domain) phosphorylation in intracellular ROS homeostasis and aging. *Antioxidants & Redox Signaling*, 21:33-45, 2014. [PMC4048578](#)
130. Megaraj, V., Fang, C., Kovalchuk, N., Zhu, Y., Ding, X., and Zhang, Q.-Y.: Role of intestinal P450 enzymes in the metabolic activation of the colon carcinogen azoxymethane in mice. *Chem. Res. Toxicol.*, 27:656–62, 2014, [PMC4002058](#)
131. Jia, K., Li, L., Liu, Z., Hartog, M., Kluetzman, K., Zhang, Q.-Y., and Ding, X.: Generation and characterization of a novel CYP2A13-transgenic mouse model. *Drug Metab. Dispos.*, 42:1341-8, 2014, [PMC4109209](#) [James R. Gillette Drug Metabolism Best Paper Award, [ASPET Drug Metabolism Division, 2014](#)]
132. Ahlawat, S., Xie, F., Zhu, Y., D'Hondt, R., Ding, X., Zhang, Q.-Y., and Mantis, N. J.: Mice deficient in intestinal epithelium cytochrome P450 reductase are prone to acute toxin-induced mucosal damage. *Sci. Reports.*, 4:5551. doi: 10.1038/srep05551, 2014, [PMC4080431](#)

133. Hough, L. B., Nalwalk, J. W., Yang, W., and Ding, X.: Significance of neuronal cytochrome P450 activity in opioid-mediated stress-induced analgesia. *Brain Res.*, 1578:30-7, 2014, [PMC4143908](#)
134. Hough, L. B., Nalwalk, J. W., Cleary, R. A., Phillips, J. G., Fang, F., Yang, W., and Ding, X.: Deficits in neuronal cytochrome P450 activity attenuate opioid analgesia but not opioid side effects. *Eur. J. Pharmacol.*, 740:255-62, 2014, [PMC4147671](#)
135. Li, L., Megaraj, V., Wei, Y., and Ding, X.: Identification of cytochrome P450 enzymes critical for lung tumorigenesis by the tobacco-specific carcinogen 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK): insights from a novel *Cyp2abfgs*-null mouse. *Carcinogenesis*, 35:2584-91, 2014, [PMC4216058](#)
136. Xu, S., Ren, Z., Wang, Y., Ding, X., and Jiang, Y.: Preferential expression of cytochrome P450 CYP2R1 but not CYP1B1 in human cord blood hematopoietic stem and progenitor cells. *Acta Pharmaceutica Sinica B*, 4:464-469, 2014, [PMC4629107](#)
137. Spink, B. C., Bloom, M. S., Wu, S., Sell, S., Schneider, E., Ding, X., and Spink, D. C.: Analysis of the AHR gene proximal promoter GGGGC-repeat polymorphism in lung, breast, and colon cancer. *Toxicol. Appl. Pharmacol.*, 282:30-41, 2015, [PMC4404625](#)
138. Liu, Z., Li, L., Wu, H., Hu, J., Zhang, Q.-Y., and Ding, X.: Characterization of a CYP2B6-humanized mouse model: inducibility of CYP2B6 in the liver by phenobarbital and dexamethasone and role in nicotine metabolism in vivo. *Drug Metab. Dispos.*, 43:208-216, 2015, [PMC4293397](#)
139. Liu, Z., Megaraj, V., Li, L., Sell, S., Hu, J., and Ding, X.: Suppression of pulmonary CYP2A13 expression by carcinogen-induced lung tumorigenesis in a CYP2A13-humanized mouse model. *Drug Metab. Dispos.*, 43:698-702, 2015, [PMC4407704](#)
140. Zhu, Y., Xie, F., Ding, L., Fan, X., Ding, X., and Zhang, Q.-Y.: Intestinal epithelium-specific knockout of the cytochrome P450 reductase gene exacerbates dextran sulfate sodium-induced colitis. *J. Pharmacol. Expt. Ther.*, 354:10-17, 2015, [PMC](#)
141. Hough, L. B., Nalwalk, J. W., Ding, X., and Scheer, N.: Opioid analgesia in P450 gene cluster knockout mice: a search for analgesia-relevant isoforms. *Drug Metab. Dispos.*, 43:1326-1330, 2015, [PMC](#)
142. Shen, B., Jiang, W., Fan, J., Dai, W., Ding, X., and Jiang, Y.: Residues 39-56 of stem cell factor protein sequence are capable of stimulating the expansion of cord blood CD34+ cells. *PLoS ONE* 10:e0141485, 2015, [PMC](#)
143. Turesky, R. J., Konorev, D., Fan, X., Tang, Y., Yao, L., Ding, X., Xie, F., Zhu, Y., and Zhang, Q.-Y.: The effect of cytochrome P450 reductase deficiency on 2-amino-9h-pyrido[2,3-b]indole metabolism and DNA adduct formation in liver and extrahepatic tissues of mice. *Chem. Res. Toxicol.*, 28:2400-10, 2015, [PMC](#)
144. Hough, L. B., Nalwalk, J. W., Yang, W., and Ding, X.: Neuronal cytochrome P450 activity and opioid analgesia: relevant sites and mechanisms. *Brain Res.*, [In Press](#), 2015

Chapters in Books/Review Articles/Other Publications:

1. Coon, M. J., Khani, S. C., Porter, T. D., Fujita, V. S., and Ding, X.: Alcohol-Inducible Cytochrome P-450: Activities, Primary Structure, and Tissue-Specific Gene Expression. In *Cytochrome P-450: New Trends*, Yamada Conference XVII (Sato, R., Omura, T., Imai, Y., and Fuji-Kuriyama, Y., Eds), Yamada Science Foundation, Japan, pp. 21-26, 1987.
2. Ding, X. and Coon, M. J.: Unique Forms of Cytochrome P-450 Purified from Rabbit Nasal Mucosa. In *Cytochrome P-450: Biochemistry and Biophysics*, Proceedings of the 6th International Congress on Biochemistry and Biophysics of Cytochrome P-450 held in Vienna, Austria (Schuster, I., Ed.), Taylor & Francis, pp.93-96, 1989.

3. Coon, M. J., Ding, X., Larson, J. R., Pernecky, S. J., and Porter, T. D.: Properties of Alcohol-Inducible Forms of Cytochrome P-450. in International Symposium on Oxygenases and Oxygen Activation, Yamada Conference XXVII (Yamamoto, S., Nozaki, M., and Ishimura, Y., Eds), Yamada Science Foundation, Japan, pp. 163-166, 1991.
4. Ding, X. and Coon, M. J.: Purification and Characterization of P-450 Cytochromes in Rabbit Nasal Microsomes. *Methods Enzymol.* 206, 603-612, 1991.
5. Coon, M. J., Ding, X., Larson, J. R., Pernecky, S. J., and Porter, T. D.: Alcohol-Inducible Forms of Cytochrome P450: Catalytic and Membrane-Binding Properties. In Proceedings of the 7th International Conference on the Biochemistry and Biophysics of Cytochrome P450, Moscow, pp. 210-215, 1992
6. Pernecky, S. J., Ding, X., and Coon, M. J.: Comparison of Catalytic and Spectral Properties of Rabbit P450s 2E1 and 2E2. In Proceedings of the 7th International Conference on the Biochemistry and Biophysics of Cytochrome P450, Moscow, pp. 151-154, 1992
7. Coon, M. J., Ding, X., Pernecky, S. J., and Vaz, A. D. N.: Cytochrome P450: Progress and Predictions. *FASEB J.* 6, 669-673, 1992.
8. Ding, X., and Coon, M. J.: Olfactory Cytochrome P450. in *Cytochrome P-450, Handbook of Experimental Pharmacology*, Volume 105 (Schenkman, J. B. and Greim, H., Eds), Chapter 22, Springer-Verlag, New York, pp. 351-361, 1993.
9. Ning, X-H., Ding, X., Childs, K. F., and Bolling, S. F.: Myocardial functional recovery and metabolic status in isolated reperfused rabbit heart: effects of glucose concentration and temperature on cardioplegia. *Tzu Chi Med. J.*, 7, 243-260, 1995.
10. Hines, R. N., Luo, Z., Cresteil, T., Ding, X., Prough, R. A., Fitzpatrick, J. L., Ripp, S. L., Falkner, K. C., Ge, N.-L., Levine, A., and Elferink, C. J.: Molecular Regulation of Genes Encoding Xenobiotic-metabolizing Enzymes: Mechanisms Involving Endogenous Factors. *Drug Metab. Dispos.*, 29, 623–633, 2001.
11. Ding, X., and Dahl, A. R.: Olfactory Mucosa: Composition, Enzymatic Localization, and Metabolism. In *Handbook of Olfaction and Gustation*, 2nd Edition, (Doty, R. L., Ed), Chapter 3, Marcel Dekker, New York, pp 51-73, 2003.
12. Ding, X. and Kaminsky, L.S.: Human Extrahepatic Cytochromes P450: Function in Xenobiotic Metabolism and Tissue-Selective Chemical Toxicity in the Respiratory and Gastrointestinal Tracts. *Annu. Rev. Pharmacol. Toxicol.* 43, 149-173, 2003.
13. Su, T., and Ding, X.: Regulation of the Cytochrome P450 2A Genes. *Toxicol. Appl. Pharmacol.*, 199, 285-294, 2004.
14. Ling, G., Gu, J., Genter, M. B., Zhuo, X., and Ding, X.: Regulation of Cytochrome P450 Gene Expression in the Olfactory Mucosa. *Chem.-Biol. Interaction*, 147, 247-258, 2004.
15. Zhang, Q.-Y. and Ding, X. The CYP2F, CYP2G and CYP2J Subfamilies. In *Cytochrome P450: Role in the Metabolism and Toxicity of Drugs and Other Xenobiotics*. (Ioannides C, Ed), Chapter 10, RSC Publishing, Cambridge, UK, pp. 309-353, 2008.
16. Brusick, D., Small, M. S., Cavalieri, E. L., Chakravarti, D., Ding, X., Longfellow, D. G., Nakamura, G., Rogan, E. C., Swenberg, J. A.: Possible genotoxic modes of action for naphthalene. *Regul. Toxicol. Pharmacol.* 51, S43–S50, 2008.
17. Sim, S. C., Miller, W. L., Zhong, X., Arlt, W., Ogata, T., Ding, X., Wolf, C. R., Fluck, C. E., Pandey, A. V., Henderson, C. J., Porter, T. D., Daly, A. K., Nebert, D. W., and Ingelman-Sundberg, M.: Nomenclature for alleles of the cytochrome P450 oxidoreductase gene. *Pharmacogenetics Genomics* 19, 565–566, 2009. [PMCID: PMC2753199](#)
18. Ding, X. and Zhang, Q.-Y. *Enzyme Regulation* (Chapter 2), in Vol 4 (*Biotransformation*; Guengerich, F. P. Ed.), *Comprehensive Toxicology*, 2nd Edition (McQueen, C. A. Ed.), pp. 9–29, 2010, Oxford: Academic Press

19. Luo, G., Lu, C., Ding, X., and Zhang, D. *Experimental Models of Drug Metabolism and Disposition* (Chapter 5), in *Mass Spectrometry in Drug Metabolism and Disposition: Basic Principles and Applications* (Lee M.S. and Zhu M. Eds.) John Wiley & Sons, Hoboken, New Jersey, 2011, pp 83-149
20. Zhang, D., Luo, G., Ding, X., and Lu, C.: Preclinical experimental models of drug metabolism and disposition in drug discovery and development. *Acta Pharmaceutica Sinica B*, 2:549–561, 2012
21. Riddick, D. S., Ding, X., Wolf, C. R., Porter, T. D., Pandey, A. V., Zhang, Q.-Y., Gu, J., Finn, R. D., Ronseaux S., McLaughlin, L. A., Henderson, C. J., Zou, L., Flück, C. E.: NADPH-CYP450 oxidoreductase: Roles in physiology, pharmacology, and toxicology. *Drug Metab. Dispos.*, 41:12–23, 2013 [PMC3533425](#)
22. Ding, X., and Xie, F.: Olfactory Mucosa: Composition, Enzymatic Localization, and Metabolism. In *Handbook of Olfaction and Gustation*, 3rd Edition, (Doty, R. L., Ed), Chapter 3, pp 63-92, 2015, Wiley-Blackwell, Hoboken, New Jersey

Ph.D. Dissertation:

Properties and Differential Expression of Multiple Forms of Cytochrome P-450. University of Michigan, 1988.