

Toxicological Sciences

CONTENTS

Volume 92, Number 2, August 2006

TOXICOLOGICAL HIGHLIGHT

Putting the Fun Into Functional Toxicogenomics

Michael L. Cunningham 347

BIOTRANSFORMATION AND TOXICOKINETICS

A Single Oral Dose of Ethanol Can Alter Transdermal Absorption of Topically Applied Chemicals in Rats

Rhonda M. Brand, Jessica L. Jendrzewski, Eric M. Henery, and Anna R. Charron 349

Cloning, Tissue Expression, and Regulation of Beagle Dog CYP4A Genes

Richard A. Graham, Bryan Goodwin, Raymond V. Merrihew, Wojciech L. Krol, and Edward L. LeCluyse 356

CARCINOGENICITY

Activation of Peroxisome Proliferator–Activated Receptor Alpha Enhances Apoptosis in the Mouse Liver

Shen Xiao, Steven P. Anderson, Cynthia Swanson, Rainer Bahnemann, Kenneth A. Voss, Anja J. Stauber, and J. Christopher Corton 368

Mechanisms of 2-Butoxyethanol–Induced Hemangiosarcomas

Stacy M. Corthals, Lisa M. Kamendulis, and James E. Klaunig 378

ENVIRONMENTAL TOXICOLOGY

Functional Analysis of a Metal Response Element in the Regulatory Region of Flounder Cytochrome P450 1A and Implications for Environmental Monitoring of Pollutants

Nick A. Lewis, Tim D. Williams, and James K. Chipman 387

Cytochrome P450 1A4 and 1A5 in Common Cormorant (*Phalacrocorax carbo*): Evolutionary Relationships and Functional Implications Associated with Dioxin and Related Compounds

Akira Kubota, Hisato Iwata, Heather M. H. Goldstone, Eun-Young Kim, John J. Stegeman, and Shinsuke Tanabe 394

GENETIC TOXICOLOGY

XRCC1 Protects against Particulate Chromate–Induced Chromosome Damage and Cytotoxicity in Chinese Hamster Ovary Cells

Eliza Grlickova-Duzevik, Sandra S. Wise, Ray C. Munroe, W. Douglas Thompson, and John Pierce Wise 409

Ethanol-Induced Fetal Dymorphogenesis in the Mouse Is Diminished by High Antioxidative Capacity of the Mother

Parri Wentzel and Ulf J. Eriksson 416

IMMUNOTOXICOLOGY

Immunomodulatory Effects of Estradiol and Cadmium in Adult Female Rats

Stéphane Pillet, Michele D'Elia, Jacques Bernier, Jean-Marie Bouquegneau, Michel Fournier, and Daniel G. Cyr 423

Activation of Multiple Mitogen-Activated Protein Kinases in Pro/Pre–B Cells by GW7845, a Peroxisome Proliferator–Activated Receptor γ Agonist, and Their Contribution to GW7845-Induced Apoptosis

Jennifer J. Schlezinger, Jessica K. Emberley, and David H. Sherr 433

Continued

Toll-Like Receptor Priming Sensitizes Macrophages to Proinflammatory Cytokine Gene Induction by Deoxynivalenol and Other Toxicants James Pestka and Hui-Ren Zhou	445
--	-----

IN VITRO TOXICOLOGY

The Interaction of Manganese Nanoparticles with PC-12 Cells Induces Dopamine Depletion Saber M. Hussain, Amanda K. Javorina, Amanda M. Schrand, Helen M. Duhart, Syed F. Ali, and John J. Schlager	456
--	-----

Copper-Induced Stimulation of Extracellular Signal-Regulated Kinase in Trout Hepatocytes: The Role of Reactive Oxygen Species, Ca²⁺, and Cell Energetics and the Impact of Extracellular Signal-Regulated Kinase Signaling on Apoptosis and Necrosis Muhammad Nawaz, Claudia Manzl, Veronika Lacher, and Gerhard Krumschnabel	464
--	-----

Differential Activation of Nuclear Receptors by Perfluorinated Fatty Acid Analogs and Natural Fatty Acids: A Comparison of Human, Mouse, and Rat Peroxisome Proliferator-Activated Receptor-α, -β, and -γ, Liver X Receptor-β, and Retinoid X Receptor-α John P. Vanden Heuvel, Jerry T. Thompson, Steven R. Frame, and Peter J. Gillies	476
--	-----

NEUROTOXICOLOGY

Polychlorinated Biphenyl-Induced Reduction of Dopamine Transporter Expression as a Precursor to Parkinson's Disease-Associated Dopamine Toxicity W. Michael Caudle, Jason R. Richardson, Kristin C. Delea, Thomas S. Guillot, Minzheng Wang, Kurt D. Pennell, and Gary W. Miller	490
--	-----

Effect of Developmental Exposure to Chlorpyrifos on the Expression of Neurotrophin Growth Factors and Cell-Specific Markers in Neonatal Rat Brain Angela M. Betancourt, Shane C. Burgess, and Russell L. Carr	500
---	-----

Low Concentrations of Paraquat Induces Early Activation of Extracellular Signal-Regulated Kinase 1/2, Protein Kinase B, and c-Jun N-terminal Kinase 1/2 Pathways: Role of c-Jun N-Terminal Kinase in Paraquat-Induced Cell Death Mireia Niso-Santano, José M. Morán, Lourdes García-Rubio, Ana Gómez-Martín, Rosa A. González-Polo, Germán Soler, and José M. Fuentes	507
---	-----

A Manganese-Enhanced Diet Alters Brain Metals and Transporters in the Developing Rat Stephanie J. Garcia, Kristin Gellein, Tore Syversen, and Michael Aschner	516
---	-----

REPRODUCTIVE AND DEVELOPMENTAL TOXICOLOGY

The Role of the Aryl Hydrocarbon Receptor Pathway in Mediating Synergistic Developmental Toxicity of Polycyclic Aromatic Hydrocarbons to Zebrafish Sonya M. Billiard, Alicia R. Timme-Laragy, Deena M. Wassenberg, Crystal Cockman, and Richard T. Di Giulio	526
--	-----

Effects of 4-n-Nonylphenol and Tamoxifen on Salmon Gonadotropin-Releasing Hormone, Estrogen Receptor, and Vitellogenin Gene Expression in Juvenile Rainbow Trout Angelique Vetillard and Thierry Bailhache	537
--	-----

RESPIRATORY TOXICOLOGY

Modulators of Cigarette Smoke-Induced Pulmonary Emphysema in A/J Mice Thomas H. March, Julie A. Wilder, Dolores C. Esparza, Patsy Y. Cossey, Lee F. Blair, Lois K. Herrera, Jacob D. McDonald, Matthew J. Campen, Joe L. Mauderly, and JeanClare Seagrave	545
---	-----

SYSTEMS TOXICOLOGY

HIGHLIGHTED ARTICLE:

A System-Based Approach to Interpret Dose- and Time-Dependent Microarray Data: Quantitative Integration of Gene Ontology Analysis for Risk Assessment

Xiaozhong Yu, William C. Griffith, Kristina Hanspers, James F. Dillman III, Hansel Ong, Melinda A. Vredevogd, and Elaine M. Faustman 560

Agonists of the Peroxisome Proliferator–Activated Receptor Alpha Induce a Fiber-Type–Selective Transcriptional Response in Rat Skeletal Muscle

Angus T. De Souza, Paul D. Cornwell, Xudong Dai, Michelle J. Caguyong, and Roger G. Ulrich 578

The Comparative Toxicogenomics Database: A Cross-Species Resource for Building Chemical-Gene Interaction Networks

Carolyn J. Mattingly, Michael C. Rosenstein, Allan Peter Davis, Glenn T. Colby, John N. Forrest, and James L. Boyer 587