Pathologist / Toxicologist

Marc Fariss, Ph.D. is an accomplished researcher and expert in the field of toxicology. He has over 40 years of experience solving complex and challenging pathological and toxicological questions related to determining the critical cellular events that are responsible for human diseases and developing therapeutic strategies. These disorders include neurodegenerative diseases, anticancer therapy, liver diseases and drug- and chemical-induced toxicity. .

Education

- Medical College of Virginia/Virginia Commonwealth University, Richmond, VA, Pathology/Toxicology Ph.D.
- University of Richmond, Richmond, VA, Chemistry.
- Lynchburg College, Lynchburg, VA, Biology B.S.

Postdoctoral Training

- NIH/NIEHS Postdoctoral Research Fellow, Department of Biochemistry and Biophysics, and the Environmental Health Science Center, Oregon State University, Corvallis, OR., Preceptor: Donald J. Reed, Ph.D.

Employment and Academic Appointments

- Chief Scientific Advisor, Isa Elaine Foundation, Ponte Vedra Beach, FL, 2024-Present. Telephone: (804) 432-5435 (mobile).
- Distinguished Professor of Toxicology, Department of Chemistry & Biochemistry, University of North Florida, Jacksonville, FL, 2024-Present.
- President and Principal Toxicologist, ToxSynergy, LLC, Jacksonville, FL, 2012 – Present

Past Industry Work Experience

- Scientific Director (Consultant, ToxSynergy), In Vitro Toxicology Department, Enthalpy Analytical, LLC, Richmond, VA, 2017 – 2019
- Principal Scientist, Scientific Team Leader: Health Effects of Nicotine, Regulatory Affairs, Altria Client Services, Richmond, VA, 2010 – 2016
- Principal Scientist, Group Leader: Toxicology, Epidemiology and Data Analysis/Management, Product Integrity, Health and Analytical Sciences, Altria Client Services, Richmond, VA, 2009 – 2010

- Principal Scientist, Core Research Director: Understanding the Health Effects of Tobacco Use (for harm reduction), Group Leader: Experimental Toxicology and Pathophysiology Groups, BioSciences, Life Sciences Research, Research and Technology, Philip Morris USA, Richmond, VA, 2006 – 2009

Past Academic Appointments

- Adjunct Professor, Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, Canada, 2018 – 2022

University of Colorado Health Science Center, Denver, CO (UCHSC)

- Associate Professor of Toxicology (Tenured), Department of Pharmaceutical Sciences, School of Pharmacy, UCHSC, 2003 – 2006
- Gasper and Irene Lazzara Professorship in Cancer Research, School of Pharmacy, UCHSC, 2003 – 2006
- Associate Professor, University of Colorado Cancer Center, UCHSC. 2003 – 2006
- Acting Director, Graduate Program in Toxicology, UCHSC, 2005 – 2006
- Associate Director, Graduate Program in Toxicology, UCHSC, 2003 – 2005

Washington State University, Pullman, WA (WSU)

- Associate Professor of Pharmacology and Toxicology (Tenured 1998), Department of Pharmaceutical Sciences, College of Pharmacy, and the Graduate Program in Pharmacology and Toxicology, WSU, 1995 – 2003
- Gasper and Irene Lazzara Professorship in Cancer Research, College of Pharmacy, WSU, 1997 – 2003
- Associate Professor, Cancer Prevention Research Center, WSU, 1995 – 2003
- Co-Director (Elected), Pharmacology and Toxicology Graduate Program, WSU, 2001 – 2002
- Adjunct Associate Professor, Department of Pharmacotherapy (Clinical), College of Pharmacy, WSU, Spokane, WA, 1997 – 2003

Medical College of Virginia/Virginia Commonwealth University,Richmond, VA (MCV/VCU)

- Assistant Professor, Experimental Pathology, Department of Pathology, MCV/VCU, 1989 – 1995

- Assistant Professor, Clinical Toxicology, Department of Pathology, MCV/VCU, 1984 – 1989

Current Membership – Scientific, Honorary and Professional Societies

- American Association for Cancer Research
- American Society for Pharmacology and Experimental Therapeutics (ASPET)
- Society of Toxicology (SOT)

Special Awards, Fellowships and Other Honors

- Awards, Honors
    - Member (nominated by industry, approved by FDA), FDA Scientific Advisory Committee (Tobacco Products), 2024-2027.
    - Plenary Speaker, 10th meeting of the Canadian Oxidative Stress Consortium, 2018.
    - Chair (Elected), Division of Toxicology, ASPET, 2005 – 2006
    - President (Elected), Pacific Northwest Chapter, SOT, 2003 – 2004
    - Colgate-Palmolive Traveling Lectureship in Alternative Methods in Toxicology, SOT National Award, 2003
    - Nominating Committee (Elected), SOT, 2005-2007.
    - Program Committee, ASPET, 2005-2007
    - Gasper and Irene Lazzara Professorship in Cancer Research, WSU and UCHSC, 1997 – 2006
    - Faculty Affairs Committee, University-wide, WSU, 1997 – 2002 (2 terms)
    - Executive Committee (Elected), College of Pharmacy, WSU, 1997 – 1999
    - National Pharmacy Honor Society, Rho Chi, 1996
    - NIH Toxicology 1 Study Section, regular member (nomination approved, 1995)
    - Advisory Committee, Center for Environmental Studies, MCV/VCU, 1994 – 1995
    - Who's Who in American Colleges, Lynchburg College

    - Junior Davis Cup Tennis Team (Delaware)
    - National Honor Society, Brandywine High School, Wilmington, DE
    - Eagle Scout, Edina, MN
- Fellowships
    - NIH/NIEHS Postdoctoral Research Service Award, 1981 – 1984
- External Grants
    - Numerous Research Grants from Various Institutions (1985-2006)
        - NIH/NIEHS
        - NIH/NINDS
        - American Cancer Society
        - American Institute for Cancer Research
        - American Parkinson Disease Association
        - Industry and Private Donors
        - Total Awards for Research Projects: approx. $4,000,000.

Scholarly, Research, Administrative Experience

Invited Presentations (over 40 presentations, 1985-2018)

- Numerous Academic Institutions, Industrial Companies and Scientific Meetings, World-Wide.

Journal Editorial Board

- Toxicology Letters (1995-2006).
- Chemico-Biological Interactions (1998-2006).
- Toxicology and Applied Pharmacology (1996-1999).

Journal Reviewer

- Over 25 Different Scientific Journals (1985 to present).

Major Teaching Assignments (1986-2006)

- Numerous Graduate School Courses in Toxicology, Pharmacology and Pathology.

- School of Pharmacy Courses in Toxicology.

Invited Chairperson – Scientific Meetings.

- Numerous Meetings World-Wide (1994-2012).

Bibliography

Published Papers (60+)

Li, Q., Siegel, D., Ross, D., Fariss, M.W.: Iron complex induced mitochondrial damage and cell death in dopaminergic neuronal cells (N27). A potential model system for dopaminergic cell death in Parkinson's Disease, (in preparation), 2025.

Li, Q., Siegel, D., Ross, D., Fariss, M.W.: The protective role of vitamin E and vitamin E succinate in a potential model system for oxidative stress induced cell death in Parkinson's disease (in preparation), 2025.

Lee, P.N., Fariss, M.W.: A systematic review of possible serious adverse health effects of nicotine replacement therapy. Arch. Toxicol. 91:1565-1594, 2017.

Coffa, B.G., Coggins, C.R.E., Werley, M.S., Oldham, M.J., Fariss, M.W.: Chemical, physical, and in vitro characterization of research cigarettes containing denicotinized tobacco. Regul. Toxicol. Pharmacol. 79: 64-73, 2016.

Haussmann, H.J., Fariss, M.W.: Comprehensive review of epidemiology and animal studies on the potential carcinogenic effects of nicotine per se. Crit. Rev. Toxicol. 46:701-734, 2016.

Fariss, M.W., Gilmour, I.G., Reilly, C.A., Liedtke, W., Ghio, A.J.: Emerging mechanistic targets in lung injury induced by combustion-generated particles. Toxicol. Sci. 132: 253-267, 2013.

Joyce, A.R., Hawkins, W., Fariss, M.W., Sengupta, T.K.: Role of plasma membrane disruption in reference moist smokeless tobacco-induced cell death. Toxicol. Lett. 198:191-199, 2010.

Lombard, C., Farthing, D., Sun, J., Fariss, M.W., and McKallip, R.J.: Reference moist smokeless tobacco-induced apoptosis in human monocytes/macrophage cell line MM6. Int. Immunopharmacol. 10:1029-1040, 2010.

Mitchell, C., Joyce, A.R., Piper, J.T., McKallip, R.J., and Fariss, M.W.: Role of oxidative stress and MAPK signaling in reference moist smokeless tobacco-induced HOK-16B cell death. Toxicol. Lett. 195:23-30, 2010.

Evans, Z.P., Mandavilli, B.S., Ellett, J.D., Rodwell, D., Fariss, M.W., Fiorini, R.N., Schnellmann, R.G., Schmidt, M.G., and Chavin, K.: Vitamin E succinate enhances steatotic liver energy status and prevents oxidative damage following ischemia/reperfusion. Transplant Proc. 41:4094-4098, 2009.

Evans, Z.P., Ellett, J.D., Fariss, M.W., Schnellmann, R.G., Schmidt, M.G., and Chavin, K.: Vitamin E succinate reduces ischemic/reperfusion injury in steatotic livers. Transplant Proc. 40:3327-3329, 2008.

Berthiaume, J.M., Oliveira, P.J., Fariss, M.W., and Wallace, K.B.: Dietary vitamin E decreases doxorubicin-induced oxidative stress without preventing mitochondrial dysfunction. Cardiovascular Toxicology 5:257-267, 2005.

Grammatopoulos, T.N., Ahmadi, F., Jones, S.M., Fariss, M.W., Weyhenmeyer, J.A., and Zawada, W.M.: Angiotension II protects cultured midbrain dopaminergic neurons against rotenone-induced cell death. Brain Res. 1045: 64-71, 2005.

Davies, N.M., Teng, X., Fukada, C., Woody, R., and Fariss, M.W.: Pharmacokinetics and tissue distribution of d-alpha-tocopherol hemisuccinate formulations following intravenous administration in the rat. Biopharmaceutics and Drug Disposition, 26:195-203, 2005.

Good, R.L., Roupe, K.A., Fukuda, C., Clifton, G.D., Fariss, M.W., and Davies, N.M.: Direct high-performance liquid chromatographic analysis of vitamin E succinate and derivatives. Journal of Pharmaceutical and Biomedical Analysis, 39: 33-38, 2005.

Fariss, M.W., Chan, C.C., Patel, M., Van Houten, B., and Orrenius, S.: Role of Mitochondria in Toxic Oxidative Stress. Molecular Interventions 5:98-115, 2005.

Exon, J.H., South, E.H., Taruscio, T.G., Clifton, G.C., and Fariss, M.W.: Chemopreventive effects of dietary d-α-tocopheryl succinate supplementation on pre-cancer colon aberrant crypt formation and vitamin E analogue levels in young and old rats. Nutrition and Cancer 49:72-80, 2004.

Neuzil, J., Tomasetti, M., Mellick, A., Alleva, R., Salvatore, B., Birringer, M., and Fariss, M.W.: Vitamin E analogues: A new class of inducers of apoptosis with selective anti-cancer effect. Current Cancer Drug Targets 4:267-283, 2004.

Yanez, J.A., Teng, X.W., Roupe, K.A., Fariss, M.W., Davies, N.M.: Chemotherapy induced gastrointestinal toxicity in rats: Involvement of mitochondrial DNA, gastrointestinal permeability and cyclooxygenase-2. Journal of Pharmacy and Pharmaceutical Sciences, 6:308-315, 2003.

Knight, T.R., Fariss, M.W., Farhood, A. and Jaeschke, H.: Role of lipid peroxidation as mechanism of liver injury after acetaminophen overdose in mice. Toxicol. Sci., 76:229-236, 2003.

Fariss, M.W., and Zhang, J.G.: Vitamin E therapy in Parkinson's disease. Toxicology 189: 129-146, 2003.

Weber, T., Lu, M., Ladislav, A., Lahm, H., Gellert, N, Fariss, M.W., Korinek, V., Sattler, W., Ucker, D.S., Terman, A., Schroder, A., Erl, W., Brunk, U., Coffey, R.J., Weber, C and Neuzil, J: Vitamin E succinate is a potent novel antineoplastic agent with high selectivity and cooperativity with tumor necrosis factor-related apoptosis-inducing ligand (Apo2 ligand) in vivo. Clin. Cancer Res., 8: 863-869, 2002.

Zhang, J.G. and Fariss, M.W.: Thenoyltrifluoroacetone, a potent inhibitor of carboxylesterase activity. Biochem. Pharmacol., 63: 751-754, 2002.

Schwartz, P.F., Gennings, C., Teuschler, L.K. and Fariss, M.W.: Optimizing the precision of toxicity threshold estimation using a two-stage experimental design. J. Agric. Biol. Environ. Statist. 6:409-428, 2001.

Zhang, J-G., Nicholls-Grzemski, F.A., Tirmenstein, M.A., and Fariss, M.W.: Vitamin E succinate protects hepatocytes against the toxic effect of reactive oxygen species generated at mitochondrial complexes I and III by alkylating agents. Chemico-Biological Interactions 138:267-284, 2001.

Zhang, J-G., Tirmenstein, M.A., Nicholls-Grzemski, F.A. and Fariss, M.W.: Mitochondrial electron transport inhibitors cause lipid peroxidation-dependent and -independent cell death: Protective role of antioxidants. Arch. Biochem. Biophys., 393: 87-96, 2001. (This article was one of the top 20 downloaded articles for ABB in 2001).

Fariss, M.W., Nicholls-Grzemski, F.A., Tirmenstein, M.A., and Zhang, J-G: Enhanced antioxidant and cytoprotective abilities of vitamin E succinate is associated with a rapid uptake advantage in rat hepatocytes and mitochondria. Free Radic. Biol. Med. 31: 530-541, 2001.

Tirmenstein, M.A., Nicholls-Grzemski, F.A., Schmittgen, T.D., Zakrajsek, B.A. and Fariss, M.W.: Glutathione-dependent regulation of nitric oxide production in isolated rat hepatocyte suspensions. Antioxidants and Redox Signaling, 2: 767-777, 2000.

Tirmenstein, M.A., Nicholls-Grzemski, F.A., Zhang, J.G. and Fariss, M.W.: Glutathione depletion and the production of reactive oxygen species in isolated hepatocyte suspensions. Chemico-Biological Interactions, 127: 201-217, 2000.

McIntyre, B.S., Briski, K.P., Tirmenstein, M.A., Fariss, M.W., Gapor, A. and Sylvester, P.W.: Antiproliferative and apoptotic effects of tocopherols and tocotrienols on normal mouse mammary epithelial cells. Lipids, 35: 171-180, 2000.

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Fariss, M.W., Fortuna, M.B., Everett, C.K., Smith, J.D., Trent, D.F., and Djuric, Z.: The selective cytotoxic effect of vitamin E succinate and cholesterol succinate on murine leukemia cells result from the action of the intact molecules. Cancer Res., 54: 3346-3351, 1994.

Fariss, M.W., Johnsen, S.A., Walton, L.P., Mumaw, V.R., and Ray, S.D.: Tetrahydroaminoacridine-induced ribosomal changes and inhibition of protein synthesis in rat hepatocyte suspensions. Hepatology, 20: 240-246, 1994.

Ray, S.D., Mumaw, V.R. and Fariss, M.W.: Role of cellular energy status in tocopheryl hemisuccinate cytoprotection against ethyl methanesulfonate-induced toxicity. Arch. Biochem. Biophys., 311: 180-190, 1994.

Chelliah, J., Smith, J.D. and Fariss, M.W.: Inhibition of cholinesterase activity by tetrahydroaminoacridine and the hemisuccinate esters of tocopherol and cholesterol. Biochimica et Biophysica Acta, 1206: 17-26, 1994.

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Fariss, M.W.: Cadmium toxicity: Unique cytoprotective properties of vitamin E succinate. Toxicology, 69: 63-77, 1991.

Fariss, M.W.: Oxygen toxicity: Unique cytoprotective properties of vitamin E succinate. Free Radic. Biol. Med., 9: 333-343, 1990.

Fariss, M.W., Merson, M.H. and O'Hara, T.M.: Alpha tocopheryl succinate protects hepatocytes from chemical-induced toxicity under physiological calcium conditions. Toxicology Letters, 47: 61-75,1989.

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Reed, D.J., Fariss, M.W. and Pascoe, G.A.: Mechanisms of chemical toxicity and cellular protective systems. Fund. Appl. Toxicol., 6: 591-597, 1986.

Fariss, M.W. and Reed, D.J.: Mechanism of chemical-induced toxicity II. Role of extracellular calcium, Toxicol. Appl. Pharmacol., 79: 296-306, 1985.

Fariss, M.W., Brown, M.K., Schmitz, J.A. and Reed, D.J., Mechanism of chemical-induced toxicity I. Use of a rapid centrifugation technique for the separation of viable and non-viable hepatocytes. Toxicol. Appl. Pharmacol., 79: 283-295, 1985.

Fariss, M.W., Pascoe, G.A. and Reed, D.J.: Vitamin E reversal of the effect of extracellular calcium on chemically induced toxicity in hepatocytes. Science, 227: 751-754, 1985.

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Cohn, W.J., Boylan, J.J., Blanke, R.V., Fariss, M.W., Howell, J.R. and Guzelian P.S.: Treatment of chlordecone (Kepone) toxicity with cholestyramine New Eng. J. Med., 298: 243-248, 1978.

Blanke, R.V., Fariss, M.W., Griffith, F.D. and Guzelian, P.S.: Analysis of chlordecone (Kepone) in biological specimens. J. Analyt. Toxicol., 1: 57-62, 1977.

Abstracts

Sukka Ganesh, B. and Fariss, M.W.: Genotoxic assessment of reference tobacco cigarette smoke condensate using human lung epithelial A549 cells in an OECD protocol for the in vitro micronucleus assay. Society of Toxicology annual meeting, Baltimore, MD, March 2019 (late breaking abstract accepted).

Bharti, S.K., Kallam, B. and Fariss, M.W.: Effect of % S9 fraction on bacterial background lawn assessment in Ames assay using 35 mm plate spread technique. Society of Toxicology annual meeting, Baltimore, MD, March 2019 (accepted).

Bharti, S.K., Fariss, M.W. and Desai, P.: Ames assay cytotoxic assessment using bacterial lawn integrity with 35 mm plate spread technique. Coresta Congress, Kunming, China, October 22-26, 2018.

Fariss, M., Guo, Y., Scian, M., and Edmiston, J.: Use of lung gene expression profiles to determine exposure to oxidative stress-related constituents during cigarette smoke exposure in rodents. Toxicology Letters 221S:S69, 2013.

Fariss, M.W.: Cytotoxic insoluble nanosized particles in reference cigarette smoke condensate. Toxicological Sciences (The Toxicologist supplement), 126: 586, 2012.

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Edmiston, J.S., Guo, Y., and Fariss, M.W.: Reference smokeless tobacco extract induced inflammatory gene expression in vitro. Toxicological Sciences (The Toxicologist supplement), 114: 156, 2010.

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Langston, B., Edmiston, J., Scian, M., Lombard, C., Roberts, O., Baliga, V., Fisher, M., Fariss, M., and Flora, J.: Cytotoxic responses to reference moist smokeless tobacco extracts in a 3-dimensional oral cell culture system (EpiOral). Toxicological Sciences (The Toxicologist supplement), 114: 160, 2010.

Edmiston, J., Farthing, D., McKallip, R., Lombard, C., Tucker, C., and Fariss, M.: Osmotically active constituents in moist smokeless tobacco extracts. American College of Toxicology 2009 Meeting, Palm Springs, CA.

Mitchell, C., Piper, J., Joyce, A., Fariss, M., and McKallip, R.: Moist smokeless tobacco-induced oxidative stress in human oral keratinocytes leads to cell death via JNK and p38 MAPK signaling. Experimental Biology 2009 Meeting, New Orleans.

Fariss, M.W., Fu, Y-M., Meadows, G.G., and Zhang, J-G.: Rapid enrichment of cellular antioxidant capacity by vitamin E succinate protects hepatocytes against acrolein-induced toxicity. Experimental Biology 2006 Meeting, San Francisco, CA.

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Woody, R., Fukada, C., Roupe, K.A., Fariss, M.W., Clifton, G.D., and Davies, N.M.: Alpha-Tocopherol Succinate Analysis: Content Uniformity, Pharmacokinetics and Tissue Distribution and Anti-Cancer Activity. Canadian Society of Pharmaceutical Sciences Annual Meeting, June 2004.

Wan, C., Shafizadeh, S.F., Fiorini, R., Periyasamy, B., Birsner, J., Haines, J., Fariss, M.W., and Chavin, K.D.: Vitamin E provides protection in a lethal murine model of liver ischemia-reperfusion. American Transplant Congress, May, 2003.

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Fariss, M.W. and Zhang, J-G: Protective role of mitochondrial vitamin E in toxic oxidative stress. Pacific Northwest Association of Toxicologists Annual Meeting, Richland, WA, September, 2002.

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Fariss, M.W.: Mitochondrial toxicants: Protective role of vitamin E succinate. Chemical and Engineering News, April 30, 2001.

Fariss, M.W., Nicholls-Grzemski, F.A., Tirmenstein, M.A. and Zhang, J.G.: Unique ability of vitamin E succinate, administered in vitro and in vivo, to protect hepatocytes against iron-induced toxicity. Toxicological Sciences, 60:44, 2001.

Ge, X. and Fariss, M.W.: Tocopheryl succinate-induced apoptosis in human hepatoma (Hep 3B) cells is dependent on caspase-3-like protease activation. American Association for Cancer Research Annual Meeting, April, 2000.

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Intellectual Property

U. S. Patents Issued

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U.S. and PCT Patent Applications Filed
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