Exponent®
Engineering & Scientific Consulting

Christine Thiffault, Ph.D., ERT, DABT

Managing Scientist | Chemical Regulation and Food Safety
Washington DC
cthiffault@exponent.com

Professional Profile

Dr. Thiffault joined Exponent in December 2022 and brings with her over 20 years of experience in the chemical & pharmaceutical industries. Dr. Thiffault has an in-depth understanding of chemical regulation and a broad toxicological expertise focusing on food contact substances, medical devices, pesticides, consumer goods and cosmetics to support compliance/registration in North America, Europe and China.

Dr. Thiffault focuses her work at Exponent supporting food contact materials, cosmetics, medical devices and consumer products.

Dr. Thiffault has provided an expert opinion to our clients on food contact materials and cometics to ensure safety and regulatory requirements were met.

Dr. Thiffault is a member of the American Board of Toxicology and holds a DABT. She is also an accredited member of the European Registered Toxicologist and a Project Management Professional.

For the last 20 years, Dr. Thiffault has held key positions including Senior Director of Product Stewardship where she implemented a medical device safety testing program. At Edgewell, she held the position of Senior Principal Scientist where she evaluated the safety of Over the Counter (OTC) drugs and cosmetics by applying risk assessment principles. She also ranked-prioritized novel ingredients for development using read-across and risk assessment tools (qSAR, Read-Across, TTC, ToxTree, and EpiSuite).

As Director of Product Stewardship at Advansix, Dr. Thiffault built the regulatory function to support innovation for solvents and food contact materials and implemented processes to ensure regulatory compliance across businesses. She provided predictive environmental and mammalian toxicology modeling (qSAR) to support R&D to identify chemicals with optimal toxicity profiles for development.

Prior to Advansix, she joined Henkel as Director of Toxicology and provided human risk assessments (TRA, LHAMA certification) using modeling tools (ConsExpo, BMD, and OECD toolbox software) to support product safety and proof of concept clinical trials for use of adhesives in medical devices, consumer products, and in direct/indirect food contact material (e.g., packaging). She collaborated with CROs to conduct animal toxicity studies and interfaced with R&D to advance chemistry with optimal toxicity profiles.

At FMC, Dr. Thiffault provided global toxicology expertise to support the registration of pesticides worldwide. She drove strategy to support pesticide registration and oversaw GLP and non-GLP toxicology studies from acute to chronic toxicology, as well as PK studies in various animal species in accordance with OPPTS/OCSPP and OECD guidelines.

Dr. Thiffault received a BS in Chemistry and a PhD in Pharmacology from McGill University while in the laboratory of Dr. Rémi Quirion, where she studied the role of oxidative stress in the MPTP mouse model of Parkinson's disease. She continued her training as a post-doctoral fellow on the role of pesticides in the etiology of Parkinson's Disease at the Parkinson's Institute in Sunnyvale CA and on mitochondrial physiology at the Center for Neurodegenerative Diseases at the University of Virginia. Her work has been published in more than 25 peer-reviewed publications.

Academic Credentials & Professional Honors

Ph.D., McGill University, 1996

B.Sc., Agriculture, McGill University, 1986

Dr Thiffault received numerous awards including the outstanding researcher award at the University of Virginia, the President's Award for R&D while at Abbott Laboratories and is the recipient of 2 fellowships from "Health Research Fund" (FRSQ), Quebec, Canada.

Licenses and Certifications

Diplomate of the American Board of Toxicology (DABT) (NC)

Prior Experience

1991 Society for Neuroscience

2003 American Society for Neurochemistry

2007 Project Management Institute

2013 Society of Toxicology

2014 Society for Chemical Hazard Communication

Languages

French

Publications

DeLeo P.C., Stuard S.B., Kinsky O., Thiffault C., and Brittany B. 2021. Assessment of consumer exposure to boron in cleaning products: a case study of Canada. Crit. Rev. Toxicol. 51 (4): 359-371.

Arbab A.S., Thiffault C., Navia B., Victor S.J., Hong K., Zhang L., Jiang Q., Varma N.R., Iskander A., and Chopp M. 2012. Tracking of 111-In-labeled human umbilical tissue-derived cells (hUTC) in a rat model of cerebral ischemia using SPECT imaging. BMC Med. Imaging 12: 33.

Jiang Q., Thiffault C., Kramer B.C., Ding G.L., Zhang L., Nejad-Davarani S.P., Li L., Arbab A.S., Lu M., Navia B., Victor S.J., Hong K., Li Q.J., Wang W.Y., Li Y., and Chopp M. 2012. MRI detects brain reorganization after human umbilical tissue derived cells (hUTC) treatment of stroke in rat. PloS One 7(8): e42845.

Zhao C., Sun M., Bennani Y.L., Gopalakrishnan S.M., Witte D.G., Miller T.R., Krueger K.M., Browman K.E., Thiffault C., Wetter J., Marsh K.C., Hancock A.A., Esbenshade T.A., and Cowart M.D. 2008. The alkaloid conessine and analogues as potent histamine H3 receptor antagonists. J. Med. Chem. 51: 5423-

5430.

Altenbach R.J., Liu H., Banfor P.N., Browman K.E., Fox G.B., Fryer R.M., Komater V.A., Krueger K.M., Marsh K., Miller T.R., Pan J.B., Pan L., Sun M., Thiffault C., Wetter J., Zhao C., Zhou D., Esbenshade T.A., Hancock A.A., and Cowart M.D. 2007. Synthesis, potency, and in vivo profiles of quinoline containing histamine H3 receptor inverse agonists. J. Med. Chem. 50: 5439-5448.

Schurdak M.E., Abel S.J., Vernetti, L.A. and Thiffault C. 2007. Adaptation of an in vitro phospholipidosis assay to an automated image analysis system. Tox. Mech. Meth. 17: 77-86.

Sun M., Zhao C., Gfesser G.A., Thiffault C., Miller T.R., Marsh K., Wetter J., Curtis M., Faghih R., Esbenshade T.A., Hancock A.A. and Cowart M. 2005. Synthesis and SAR of 5-amino- and 5-(aminomethyl)benzofuran histamine H3 receptor antagonists with improved potency. J. Med. Chem. 48: 6482-6490.

Thiffault C. and Bennett J.P. Jr. 2005. Cyclical mitochondrial membrane potential fluctuations linked to electron transport, F0F1 ATP-synthase and mitochondrial Na+/Ca+2 exchange are reduced in Alzheimer's disease cybrids. Mitochondrion. 5: 109-119.

Kindler D.D., Thiffault C., Trimmer P.A., Dennis J., Jenkins R.W., Solenski N.J., Alietta M. and Bennett J.P. Jr. 2003. Neurotoxic nitric oxide rapidly depolarizes, permeabilizes and paralyzes mitochondria before activating cell death pathways. Mol.Cell Neurosci. 23: 559-573.

Thiffault C., Langston J.W. and Di Monte D.A. 2003. Cerebrospinal fluid 3,4-dihydroxyphenylacetic acid levels after tolcapone administration as an indicator of nigrostriatal degeneration. Exp. Neurol. 183:173-9.

Manning-Bog A., Thiruchelvam M., McCormack A., Thiffault C., Langston J.W., Cory-Slechta D.A. and Di Monte D.A. 2002. The herbicide paraquat causes nigrostriatal degeneration and upregulation of alpha-synuclein in a mouse model of Parkinson's disease. Neurobiol. Dis. 10: 119-127.

Thiffault C., Langston J.W. and Di Monte D.A. 2001. Acute exposure to organochlorine pesticides does not affect striatal dopamine in mice. Neurotox. Res. 3: 537-543.

Thiffault C., Langston J.W. and Di Monte D.A. 2000. Increased striatal dopamine turnover following acute administration of rotenone to mice. Brain Res. 885: 283-288.

Thiffault C., Quirion R. and Poirier J. 1998. Effect of the MAO-B inhibitor, MDL72974, on superoxide dismutase activity and lipid peroxidation levels in mouse brain. Synapse 8:208-211.

Thiffault C., Quirion R. and Poirier J. 1997. The effect of L-deprenyl, D-deprenyl and MDL72974 on mitochondrial respiration: A possible mechanism leading to an adaptive increase in superoxide dismutase activity. Mol. Brain Res. 49:127-136.

Thiffault C., Theroux-Lamarre L., Quirion R. and Poirier J. 1997. L-Deprenyl and MDL72974 do not improve the recovery of dopaminergic cells following systemic administration of MPTP in mouse. Brain Res. Mol. Brain Res. 44:238-244.

Thiffault C., Aumont N., Quirion R. and Poirier J. 1995. The effect of MPTP and L-deprenyl on antioxidant enzymes and lipid peroxidation levels in mouse brain. J. Neurochem. 5:2725-2733.

Poirier J., Dea D., Baccichet A. and Thiffault C. 1994. Superoxide dismutase expression in Parkinson's disease. Ann. N.Y. Acad. Sci. 738:116-120.

Poirier J. and Thiffault C. 1993. Are free radicals involved in the pathogenesis of idiopathic Parkinson's disease? Eur. Neurol. 33 (Suppl. 1):38-43.

Aboul-Enein H.Y. and Thiffault C. 1993. High performance liquid chromatographic applications to thyroidology. LabMedica Interna. 10:9-11.

Aboul-Enein H.Y. and Thiffault C. 1991. Rapid liquid chromatographic analysis of flurazepam in pharmaceutical preparation. Toxicol. Environ. Chem. 34:73-76.

Aboul-Enein H.Y. and Thiffault C. 1991. Current screening techniques for Down Syndrome. LabMedica Interna. 8:29-31.

Aboul-Enein H.Y. and Thiffault C. 1991. Determination of ramipril and its precursors by reverse phase high performance liquid chromatography. Anal. Let. 24:2217-2224.

Aboul-Enein H.Y. and Thiffault C. 1991. Identification of some primidone urinary metabolites in dyslexic patient by thin layer chromatography. Anal. Let. 24:209-216.

Alli I., Dilollo A., Kermasha S., Thiffault C., and Dumais F. 1990. Diastatic activity of forage additive products containing malt flour. J. Assoc. Off. Anal. Chem. 73:213-215.

Alli I., Thiffault C., and Baker B.E. 1985. A device for monitoring silage effluent produced in laboratory silos. J. Dairy Sci. 68:3355-3359.

Representative presentations include:

2006 Thiffault C. Phospholipidosis. CBI 6th Forum on Predictive ADME/Tox, Washington DC, USA

2006 Thiffault C. Microscopic techniques to evaluate phospholipidosis in vitro: Application to drug discovery. Microscopy and Microanalysis' 64th annual meeting, Chicago, IL, USA

2005 Thiffault C. Cell-based predictive toxicological assays to support discovery projects. IBC's 6th international conference on evaluating preclinical drug safety, Boston, MA, USA

2001 Thiffault C. An assist in the fight against Alzheimer's disease. Explorations: Postdoctoral highlights from the University of Virginia. Interview conducted by the Office of the Vice President of Research and Public Service, Charlottesville, VA, USA

1994 Thiffault C., Quirion R. and Poirier J. Antioxidant enzymes in an animal model of Parkinson's disease. Oral presentation for the 24th annual meeting for the Society of Neuroscience. Miami Beach, FL, USA

1993 Thiffault C. Parkinson's Disease, Cardinal Carter High School, Aurora, Ontario, Canada

1987 Thiffault C. and Alli I. L'activite diastasique de la farine de malt. Proposition de communication du 55e congres de l'ACFAS. Ottawa, Ontario, Canada

1986 Thiffault C. and Alli I. 1986. La mesure de l'effluent produit par l'ensilage. Proposition de communication du 54e congrès de l'ACFAS. Montréal, Québec, Canada

Additional Education & Training

2022 How Advances in Exposure Science and Toxicology Are Changing Assessments of the Effects of Chemical Mixtures on Human Health. 61th Annual Meeting of the Society of Toxicology.

2022 Principles and Applications of Read-Across in Human Health Risk Assessment. 61th Annual Meeting of the Society of Toxicology.

2021 NSP Workshop Day on behalf of PCPC and Cosmetics Europe. Hosted by PCPC.

2021 Risk Assessment DART Endocrine Disruption: A World View. 60th Annual Meeting of the Society of Toxicology.

2021 Rapid Chemical Assessment Using Open Computational Methods. 60th Annual Meeting of the Society of Toxicology.

2021 Chemical Probes: New Tools to Identify Molecular Target. 60th Annual Meeting of the Society of Toxicology.

2021 Applications of In vitro and In Silico new approach methodologies for predictive and mechanistic thyroid toxicity testing. 60th Annual Meeting of the Society of Toxicology.

2020 China Cosmetic Management: Updates and Trends under CSAR. Hosted by PCPC.

2020 Topical Drug Development – Evolution of Science and Regulatory Workshop. Webinar Hosted by FDA and UMD.

2020 Personal Care Products Council. 2020 Vitrual Science Symposium.

2019 Publicly Available Exposure Tools to Inform the Toxic Substances Control Act. 58th Annual Meeting of the Society of Toxicology, Baltimore, MD.

2019 Current Dose-Response Modeling Strategies and Applications in Chemical Risk Assessment. 58th Annual Meeting of the Society of Toxicology, Baltimore, MD

2019 Industrial Application of Computational Toxicology in the 21st Century. 58th Annual Meeting of the Society of Toxicology, Baltimore, MD.

2017 Read-Across: Case Studies, New Techniques, and Guideline for Practical Application. 56th Annual Meeting of the Society of Toxicology, Baltimore, MD.

2017 Adding Up Chemicals: Component-Based Risk Assessment of Chemical Mixtures. 56th Annual Meeting of the Society of Toxicology, Baltimore, MD.

2015 TSCA, Food-Contact Substances, and Other FDA-Regulated Produces. A Keller and Heckman LLP Seminar. Chicago IL.

2015 Hazard Communication for Asia, the Pacific Rim, and Latin America. Society for Chemical Hazard Communication. San Francisco CA.

2015 Global Harmonized System for Classification and Labeling of Chemicals. Society for Chemical Hazard Communication. San Francisco CA.

2014 Proactive Risk Management: Aligning Stakeholder Expectations to Real-Life. PMI Seminars World, Philadelphia PA.

2014 Methodologies in Human Risk Assessment. 53rd Annual Meeting of the Society of Toxicology Meeting, Phoenix AZ.

2013 Physiologically Based Pharmacokinetic (PBPK) Workshop, Colorado State University, Fort Collins, CO.

2013 Mid-America Toxicology Course. Curtis D. Klaassen, Course Director. Kansas City OH.

2012 A Practical Primer on Pesticides. A Keller and Heckman LLP Seminar. Washington DC.

2012 Good Laboratory Practice. FMC Corporation, Ewing NJ.

2011 Clinical Research Certification. American Institute of Technology, South Plainfield NJ.

2008 The Neurostereology Workshop. Marine Biological Laboratory, Woods Hole MA.

2008 Quality System Regulation (QSR) course for the Medical Device Industry. Norwood MA.

2007 Project Management Professional Certification. Gurnee IL.

2007 Preclinical Safety Workshop: Biotechnology-derived Proteins, Charles Rivers Preclinical Facility. Shrewsbury MA.

2007 Inhibitory RNAs in Neuroscience, 37th Annual Meeting of the Society For Neuroscience. San Diego CA.

2006 Introductory Statistics in JMP, a Statistical Software, Abbott Laboratories. Abbott Park IL.

2005 Data Manipulation in JMP, a Statistical Software, Abbott Laboratories. Abbott Park IL.

2004 Short Course in Pharmacokinetics, Abbott Laboratories. Abbott Park IL.

2004 Genetic Toxicology Principles, Practices and Emerging Challenges. 25th Annual Meeting of the American College of Toxicology. Palm Springs CA.

Research Grants

2000

Commonwealth of Virginia. Alzheimer’s and Related Diseases Research Award Fund, Richmond, VA, USA.

1998

Fellowship Recipient of "Fonds de la Recherche en Santé du Québec” (FRSQ), Québec, Canada.

1997

Fellowship Recipient of "Fonds de la Recherche en Santé du Québec” (FRSQ), Québec, Canada.

1992

Studentship Recipient of "Fonds pour la Formation de Chercheurs et l'Aide à la Recherche" (FCAR), Québec, Canada.