



Sarah E Brown, M.S.

Current Position

Senior Associate
Health Scientist II

Discipline Areas

> Toxicology

Years' Experience

3 Years

Joined Cardno

2017

Education

- > M.S., Environmental Health Science, University of Massachusetts Amherst, 2016
- > B.S., Biology, Saint Michael's College, 2012

Professional Honors/Awards

Membership and Service to Professional Societies

Publications

Summary of Experience

Sarah Brown is a Senior Associate Health Scientist II with Cardno ChemRisk in the Boulder office. She received her M.S. in Environmental Health Science from the University of Massachusetts Amherst in 2016; her thesis work focused on the effects of butylparaben exposure on pancreatic development in zebrafish embryos. Sarah specializes in toxicology, chemical risk characterization, exposure and risk assessment, toxicological profiles, and litigation support. She has evaluated the health effects of both consumer and occupational exposures to a wide variety of chemicals including asbestos, talc, DEHP, PFOA, parabens, and various flavoring ingredients and harmful or potentially harmful chemicals (HPHCs) in electronic and oral nicotine delivery systems.

Significant Projects

Toxicology Research

Planned and conducted laboratory work and experiments investigating the toxicological mechanisms of butylparaben in zebrafish embryos. Examined how early exposures to butylparaben affect embryonic development, specifically the developing pancreas, using a zebrafish model. Investigated whether butylparaben causes oxidative stress in zebrafish embryos by measuring the redox potentials of antioxidants glutathione and cysteine, and by measuring the gene expression of glutathione-related genes. Observed pancreatic and morphologic deformities in butylparaben-exposed zebrafish embryos at different days that are critical to both pancreatic and morphologic development. Examined the gene expression of endocrine pancreatic hormones in response to butylparaben exposure.

Developed a novel assay that allows for the observation of glutathione *in vivo*, utilizing the molecular probe monochlorobimane.

- > Recipient of Northeast Regional Chapter meeting of the Society of Toxicology (SOT) Poster Award, 2015, for "Measuring Tissue-specific Glutathione (GSH) Utilization in the Developing Embryo"
- > Society of Toxicology, full member

Peer-Reviewed Publications

- > Brown, S. E., Sant, K. E., Fleischman, S. M., Venezia, O., Roy, M. A., Zhao, L., & Timme-Laragy, A. R. (2018). Pancreatic beta cells are a sensitive target of embryonic exposure to butylparaben in zebrafish (*Danio rerio*). Birth defects research.

- > Khalil, A., M. Parker, S. E. Brown, S. E. Cevik, L. W. Guo, J. Jensen, A. Olmsted, D. Portman, H. Wu, and A. Suvorov. 2017. Perinatal exposure to 2,2',4'4'-Tetrabromodiphenyl ether induces testicular toxicity in adult rats. *Toxicology* 389:21-30.
- > Rastogi, A., C. W. Clark, S. M. Conlin, S. E. Brown, and A. R. Timme-Laragy. "Mapping glutathione utilization in the developing zebrafish (*Danio rerio*) embryo." *Redox Biology* (2019): 101235.

- > S.E. Brown, E.M. Beckett, D.R. Cheatham, H.A. Reamer, and M.L. Kreider. March, 2019. Weight-of-evidence Analysis to Assess the Potential of PFOA to Act as a Steroidogenesis Inducer and Inhibitor. Society of Toxicology Annual Meeting (SOT). Baltimore, MD.
- > S.E. Brown, M.R. Monroe, D.A. Drechsel. March, 2019. Examining the Impact of DEHP Exposure via Food on Reproductive Function in Adult Men. Society of Toxicology Annual Meeting (SOT). Baltimore, MD.
- > S.E. Brown, K.E. Sant, S.M. Fleischman, L. Zhao, A.R. Timme-Laragy. June, 2016. Effects of Butylparaben exposure on pancreatic development in zebrafish (*Danio rerio*) embryos. North Atlantic Chapter of the Society of Environmental Toxicology and Chemistry (NAC SETAC) Annual Meeting. Amherst, MA.
- > S.E. Brown, K.E. Sant, S.M. Fleischman, L. Zhao, A.R. Timme-Laragy. June, 2016. Effects of Butylparaben exposure on pancreatic development in zebrafish (*Danio rerio*) embryos. Society of Toxicology Annual Meeting (SOT). New Orleans, LA.
- > S.E. Brown, K.E. Sant, K Melendez and A.R. Timme-Laragy. November 2015. Measuring Tissue-specific Glutathione (GSH) Utilization in the Developing Embryo. Society for Redox Biology and Medicine (SFRBM). Boston, MA.
- > S.E. Brown, K.E. Sant, K Melendez and A.R. Timme-Laragy. October 2015. Measuring Tissue-specific Glutathione (GSH) Utilization in the Developing Embryo. Northeast Regional Chapter meeting of the Society of Toxicology, Boston, MA.
- > S.E. Brown, K.E. Sant, K Melendez and A.R. Timme-Laragy. October 2015. Measuring Tissue-specific Glutathione (GSH) Utilization in the Developing Embryo. North Atlantic Chapter of the Society of Environmental Toxicology and Chemistry (NAC SETAC) Annual Meeting. Freeport, ME.

Presentations