Susan J. Borghoff, M.S.P.H., Ph.D., DABT

PRINCIPAL SCIENTIST

VICE PRESIDENT, 21CT

CONTACT INFORMATION

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PROFESSIONAL PROFILE

Dr. Susan Borghoff is based in Research Triangle Park, NC. She is a board-certified toxicologist with over 35 years of experience designing and managing diverse research programs and regulator-driven *in vitro* and *in vivo* toxicology studies for commercial and federal clients. Her work has also included scientific and technical oversight, data analysis and interpretation, and preparation of both Final GLP Study Reports for regulatory submission and peer-reviewed scientific manuscripts. Dr. Borghoff has directed scientific research to support dose-response and hazard identification for incorporation into human health risk assessments.

Dr. Borghoff is a recognized expert on mechanisms by which agents cause toxicity, modulate endocrine pathways, and cause cancer in rodents, and the relevance of these responses for assessing human risk. Most recently, she has been involved in evaluating mechanistic data combined with experimental cancer animal studies to assess the potential of selected sweeteners to cause cancer in humans. Her research also has focused on understanding the metabolism and pharmacokinetics of agents using physiologically based pharmacokinetic (PBPK) models for extrapolation of risk to humans. She has been involved with critical reviews of toxicity and carcinogenicity studies, advising on specific study designs to fill data gaps for understanding modes/mechanisms of action, and as an Expert Panel member for scientific oversight of industry-sponsored toxicity and carcinogenicity testing programs. Dr. Borghoff's experience also includes implementing a program to conduct GLP regulatory studies associated with the United States Environmental Protection Agency (EPA)-mandated Endocrine Disruption Screening Program (EDSP) and co-chairing a workshop titled, "Lessons Learned, Challenges, and Opportunities: The US Endocrine Disruptor Screening Program," held in Research Triangle Park in 2013, to assess this program.

Dr. Borghoff has served as a reviewer on a number of panels and working groups for international organizations, including EPA, National Cancer Institute, International Programme on Chemical Safety (IPCS), and European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC). She also served on three Monograph Working Groups (Vol. 73, 77, and 82) of the International Agency for Cancer Research (IARC), in addition to acting as Observer for Monograph Vol.115, 134, and for the advisory group meeting to recommend priorities (March 2019). She has been a reviewer for various grants through the National Institutes of Health (NIH), the National Institute of Environmental Health Sciences (NIEHS), and EPA.

Dr. Borghoff received the Frank R. Blood Award in 1994 for the best paper of the year published in a Society of Toxicology (SOT) research journal, and an SOT Risk Assessment Specialty Section Award in 2000. She is a member of SOT's North Carolina Chapter, and at the national level, has served on SOT Council, as well as various committees (e.g., Program, Awards, Education). Dr. Borghoff was a member of SOT's TSCA Reform Task Force and was the Audit Committee Co-Chair. She has also served as an Associate Editor for *Toxicological Sciences*, along with other editorial positions for several scientific journals, including the editorial board of the *International Journal of Toxicology.*

Dr. Borghoff received her Ph.D. and MSPH in Environmental Sciences and Engineering from the University of North Carolina, and a B.S. in Chemistry from East Stroudsburg University in Pennsylvania. Dr. Borghoff became a Diplomate of the American Board of Toxicology in 1994.

EDUCATION AND DEGREES EARNED

Ph.D., Environmental Sciences and Engineering, University of North Carolina

M.S.P.H., Environmental Sciences and Engineering, University of North Carolina

B.S., Chemistry (*magna cum laude*), East Stroudsburg University, East Stroudsburg, PA

CERTIFICATIONS

Diplomate, American Board of Toxicology (Recertification: 1999, 2004, 2009, 2014, 2020, 2025)

PROFESSIONAL AFFILIATIONS

1984–Present	North Carolina Chapter of the Society of Toxicology
1986–Present	Society of Toxicology (Full Member over 35 yrs)
2019–Present	American Society for Cellular and Computational Toxicology
2015–2017	Audit Committee; Co-chair 2015, Chair 2016 (appointed)
2013–2016	TSCA Reform Task Force (appointed)
2009–2011	Councilor (elected)
2005–2008	Education Committee (elected)
2002–2004	Awards Committee (elected)
1999–2004	Program Committee (appointed)
2002–2004	Secretary/Treasurer of BMSS
2007–Present	American College of Toxicology

2013–Present	SETAC (Society of Environmental Toxicology and Chemistry)
2018–Present	Toxicology Forum
1992–2010	International Society for the Study of Xenobiotics
2003–2010	RTP Drug Metabolism Discussion Group (Executive Board

AWARDS AND HONORS

2017	Recognized by the Biological Modeling Specialty Section of the Society of Toxicology for publication of one of the top nine modeling papers in 2017: Borghoff SJ, Ring C, Banton M, Leavens TL. 2016. Physiologically based pharmacokinetic model for ethyl tertiary-butyl ether and tertiary-butyl alcohol in rats: Contribution of binding to α2u-globulin in male rats and high-exposure nonlinear kinetics to toxicity and cancer outcomes. J Appl Toxicol 37(5):621–640, doi 10.1002/jat.3412.
2000	Society of Toxicology Risk Assessment Specialty Section Award for outstanding presentation in risk assessment: "A physiologically-based pharmacokinetic model for methyl tert-butyl ether in humans" (Student Award—Amy Collins Licata).
1994	Frank R. Blood Award for Outstanding Paper published in SOT journal: Borghoff SJ, Lagarde WH. 1993. Assessment of binding of 2,4,4-trimethyl-2-pentanol to low-molecular weight proteins isolated from kidneys of male rats and humans. Toxicol Appl Pharmacol 119:228–235.
1987	National Kidney Foundation Research Fellowship, North Carolina Society of Toxicology—Study Travel Award
1986	National Society of Toxicology—Study Travel Award
1982–1987	Public Health Traineeship—University of North Carolina

EDITORIAL AND REVIEWER ACTIVITIES

Associate Editor

Toxicological Sciences (2004–2008)—focus on reviews associated with PBPK models, pharmacokinetics, endocrine disruptors, kidney toxicity, and cancer

Editorial Board

International Journal of Toxicology (2014–2024)
Chemico-Biological Interactions (2000–2008)
Toxicological Sciences (2000–2003)
Toxicology Letters (1995-2000)

Ad Hoc Reviewer

Regulatory Toxicology and Pharmacology
Environmental Health Perspectives
Toxicology and Applied Physiology
CRC Reviews in Toxicology
Journal of Toxicology and Environmental Health
Life Sciences Reviews
Toxicological Pathology
Risk Analysis

NATIONAL & INTERNATIONAL ADVISORY COMMITTEES, SCIENTIFIC MEETING ORGANIZER, AND INVITED SPEAKER

Chair and Speaker, Informational session: Five decades of evaluating the safety of aspartame consumption: Has anything changed? Society of Toxicology, March 2024.

International Agency for Research on Cancer (IARC) - Observer for Monograph on the Evaluation of Carcinogenic Risks to Humans, Volume 134; Aspartame, Methyleugenol, and Isoeugenol, Lyon, France, June 2023.

Session co-chair: "Advances in Thresholds of Toxicological Concern (TTC): Expansion of Databases to Support New Chemical Space." Also presented: "Integration of NAM data to identify chemical substances with endocrine disruptor properties under ECHA/EFSA guidance." 44th Annual Winter Meeting, the Toxicology Forum, Tysons, VA, January 2020.

44th Annual Summer Meeting of the Toxicology Forum (2018). Kinetically Derived Maximum Dose: A Key Initiating Event Impacting Need for Mode of Action Investigations of High-Dose Specific Toxicity (Presenter).

42nd Annual Winter Meeting of the Toxicology Forum (2018). Key Characteristics of Carcinogens: Refining Approaches to Systematic Evaluations of Mechanistic Data (Session Chair); Identification of Mechanistic Data According to Key Characteristics of Carcinogens (KCC) and Review of Studies for Reliability, Relevance, and Activity (Presenter).

American College of Toxicology, Advanced Comprehensive Toxicology Class—Lecture on Kidney Toxicology, August 2017.

42nd Annual Summer Meeting of the Toxicology Forum (2016). Update: Organization and Review of Mechanistic Data According to "Ten Key Characteristics of Carcinogens" (TKCC) (Presenter).

International Agency for Research on Cancer (IARC) — Observer for Monograph on the Evaluation of Carcinogenic Risks to Humans, Volume 115: Some Industrial Chemicals. Lyon, France, 2–9 February 2016.

American College of Toxicology Annual Meeting, November 2013, San Antonio, TX

Session Co-Chair of "Prospective and Retrospective Approaches to Characterize Potential Neurotoxicity"

Invited Speaker of session titled, "Endocrine Disruption Screening — Status of the USEPA and EU programs: State of the Science and Slate for the Future"

Co-Organizer and Session Chair Symposium titled, "Population Diversity Mouse Models and their Use in Toxicology." Toxicology Forum, Aspen, CO, July 2013.

Co-Organizer and Session Chair of a Workshop titled, "Lessons Learned, Challenges, and Opportunities: The US Endocrine Disruptor Screening Program." April 22–23, 2013, Research Triangle Park, NC.

Invited Speaker, Toxicology Forum Meeting, January 2012, "Using a Rat MTBE PBPK Model as a Tool to Evaluate: Mode-of-Action and Route to Route Extrapolation."

Grant reviewer, "Engineered Nanomaterials: Linking Physical and Chemical Properties to Biology (U19)," NIEHS (2010).

Invited Speaker — REACH Symposium, "Fulfilling Technical Requirements." Society of Toxicology presentation (2008).

Ad hoc member of the Voluntary Children's Chemical Evaluation Program (VCCEP) panel to review the assessment of ethylbenzene prepared by the American Chemistry Council (February 2007).

Reviewer on NIEHS Special Emphasis Panel for Absorption, Distribution, Metabolism and Excretion (ADME) Chemical Disposition in Mammals (RFP NIH ES-06-01) (August 17–18, 2006).

EPA Science Advisory Board — Environmental Health Committee, Consultant on the Trichloroethylene Health Risk Assessment: Synthesis and Characterization Review Panel (June 2002).

International Agency for Research on Cancer (IARC) — Working Group Member for Monograph on the Evaluation of Carcinogenic Risks to Humans, Vol. 82, "Traditional Herbal Medicines, Some Mycotoxins, Naphthalene and Styrene" (2002).

International Agency for Research on Cancer (IARC) — Working Group Member for Monograph on the Evaluation of Carcinogenic Risks to Humans, Vol. 77, "Some Industrial Chemicals" (2000).

European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC) — Corresponding member on the MTBE Risk Assessment Document (2000).

USEPA. Invited participant and presenter, Workshop on MTBE Pharmacokinetic-Based Extrapolation (May 2000).

Invited participant in a meeting of the ECETOC Task Force on MTBE Risk Assessment and the Finnish Competent Authorities preparing the European Union's Risk Assessment of MTBE (May 2000).

Invited Speaker, Novartis Crop Protection AG, Basel Switzerland, "Criteria for Evaluating the Ability of a Chemical to Cause α2u-Globulin-Mediated Renal Tumors in Male Rats," (November 1999)

Society of Toxicology Annual Meeting — Organizer, Co-Chair, and participant of the symposium titled, "Aliphatic Ethers as Fuel Oxygenates: Health Effects and Regulatory Issues" (March 1999).

Reviewer of NIEHS Superfund Basic Research Program Grant (October 1999).

International Agency for Research on Cancer (IARC) — Working Group Member for Monograph on the Evaluation of Carcinogenic Risks to Humans, Vol. 73, "Some Agents that Cause Tumors of the Kidney, or Urinary Bladder in Rodents and some other Substances" (1998).

Invited Toxicology Scholar Colloquium Speaker, Center for Biochemical Toxicology, University of Connecticut, "The use of mechanistic information in risk assessment-chemical induced α2u-globulin mediated renal tumors." May 1998.
Invited Participant — Finnish Institute of Occupational Heath, Helsinki, Finland, "Mechanism of MTBE-induced renal tumors in male rats." October 1998.

Invited Participant – Office of Environmental Health Hazard Assessment, Sacramento, CA, "Mechanism of MTBE-induced tumors in rodents." July 22, 1998.

European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC) — Member of the task force preparing a document on Toxicological Mechanisms (1997–2001).

International Program on Chemical Safety, Methyl Tertiary Butyl Ether, Sponsored by Health Canada. (March 1997).

Workshop to Provide Guidance on the Feasibility and Design of Epidemiologic Studies among Populations Exposed to MTBE. Sponsored by the EPA, Panelist (April 4–5, 1995).

Industry Briefing on Oxyfuel Studies. EPA, Washington D.C., Presenter (April 1995).

Potential Acute Health Effects of Oxygenates in Fuels: A Workshop of the Health Effects Institute Oxygenates Review, Chicago, IL. Presenter — Pharmacokinetics of MTBE Across Species (July 1995).

Oxyfuels Information Needs. EPA, Washington D.C., Presenter (September 1995).

PUBLICATIONS

Buerger AN, Vincent MJ, Fitch S, Rivera B, Engel N, Zhang J, Rushton EK, **Borghoff SJ**. 2026. A mechanistic evaluation of the metabolism disrupting potential of methyl *tert*-butyl ether. Curr Res Toxicol 10(Apr 20):100290; doi: 10.1016/j.crtox.2026.100290.

Lea IA, Buerger AN, Vincent MJ,..., Choksi NY, Schaefer H, Britt J, Fitch S, Haws L, **Borghoff SJ**. 2026. Evaluating the potential carcinogenic hazard of diisononyl phthalate in humans via systematic integration of human, animal cancer studies, and mechanistic data. Curr Res Toxicol 10(Apr 30):100295; doi: 10.1016/j.crtox.2026.100295.

Lea IA, Rivera B, Rogers S, **Borghoff SJ**. 2026. Assessment of the carcinogenic potential of automotive gasoline in humans based on mechanistic evidence. Curr Res Toxicol 10:100284; doi: 10.1016/j.crtox.2026.100284.

Patlewicz GY, Mihalchik AL, East A, **Borghoff SJ**, Thompson CM. 2026. Investigating the feasibility of deriving new environmentally relevant thresholds of Toxicological Concern (TTCs) from estimated chronic human equivalent benchmark dose ($eBMD_{HED}$) values. Comput Toxicol 38(June):100417; doi: 10.1016/j.comtox.2026.100417.

Borghoff SJ, Heintz MM, Rivera BN, Haws L, Thompson C. 2025. Evaluation of an anti-thyroid mode of action for thyroid follicular cell adenomas in female mice exposed to tertiary butyl alcohol. Regul Toxicol Pharmacol 163(Dec):105936; doi: 10.1016/j.yrtph.2025.105936.

Borghoff SJ, Rivera B, Fitch S, Buerger AN, Choksi N, Franzen A, Vincent MJ, Covington T, Bus J, Rushton E, Lea IA. 2025. Systematic evaluation of the evidence base on methyl tert-butyl ether supporting a lack of concern for carcinogenic hazard in human based on animal cancer studies and mechanistic data. Curr Res Toxicol 8:100224; doi: 10.1016/j.crtox.2025.100224.

Gauthier A, Behymer W, Bare J, Kramer M, Barranco WT, Longtin JP, **Borghoff S**, Jaques A. 2025. Measurement of vinyl acetate monomer in consumer products and modeled estimates of consumer exposure. J Exp Sci Environ Epidemiol 35(6):933-942; doi: 10.1038/s41370-025-00786-y. PMID: 40533479.

Lea IA, Buerger AN, Feifarek D, Mihalchik A, Heintz MM, Haws LC, Nyambego H, Goyak K, Palermo C, **Borghoff SJ**. 2025. Evaluation of the endocrine disrupting potential of Di-isononyl phthalate. Curr Res Toxicol 8:100220; doi: 10.1016/j.crtox.2025.100220. Corrigendum 8:100233; doi: 10.1016/j.crtox.2025.100233.

Lea IA, Feifarek D, Mihalchik A, Heintz M, Haws L, Nyambego H, Goyak K, Palermo C, **Borghoff SJ.** 2025. Evaluation of the endocrine disrupting potential of Di-isodecyl phthalate. Curr Res Toxicol 8:1002221; doi: 10.1016/j.crtox.2025.100221.

Rivera BN, Lea IA, Fitch S, Choksi N, Franzen A, Bus J, Rushton E, **Borghoff SJ**. 2025. Systematic evaluation of the evidence base on ethyl *tert*-butyl ether and *tert*-butyl alcohol for carcinogenic potential in humans: Lack of concern based on animal cancer studies and mechanistic data. Curr Res Tox 10(Nov 10):100270; doi: 10.1016/j.crtox.2025.100270.

Thompson CM, Dewhurst N, Moundous D, **Borghoff SJ**, Haws LC, Vasquez MZ. 2024. Assessment of the genotoxicity of tert-butyl alcohol in an in vivo thyroid comet assay. Environ Mol Mutagen 65(3–4):129–136; doi: 10.1002/em.22601.

Nelms MD, Antonijevic T, Ring C, Harris DL, Bever RJ, Lynn SG, … **Borghoff S**, et al. 2024. Chemistry domain of applicability evaluation against existing estrogen receptor high-throughput assay-based activity models. Front Toxicol 6:https://doi.org/10.3389/ftox.2024.1346767.

Bever RJ, Edwards SW, Antonijevic T, Nelms MD, Ring C, Harris D, … **Borghoff S**, Markey KJ. 2024. Optimizing androgen receptor prioritization using high-throughput assay-based activity models. Front Toxicol 6:https://www.frontiersin.org/articles/10.3389/ftox.2024.1347364/full.

Henderson RG, Welsh BT, Rogers JM, **Borghoff SJ**, Trexler KR, Bonn-Miller MO, Lefever TW. 2023. Reproductive and developmental toxicity evaluation of cannabidiol. Food Chem Toxicol 176:113786. doi: 10.1016/j.fct.2023.113786.

Henderson RG, Lefever TW, Heintz MM, Trexler KR, **Borghoff SJ**, Bonn-Miller MO. 2023. Oral toxicity evaluation of cannabidiol. Food Chem Toxicol 176:113778. doi: 10.1016/j.fct.2023.113778.

Borghoff SJ, Cohen SS, Jiang X, Lea IA, Klaren WD, Chappell GA, Britt JK, Rivera BN, Choksi NY, Wikoff DS. 2023. Updated systematic assessment of human, animal and mechanistic evidence demonstrates lack of human carcinogenicity with consumption of aspartame. Food Chem Toxicol 172:113549. doi: 10.1016/j.fct.2022.113549.

Goyak KO, Sarang SS, Franzen A, **Borghoff SJ**, Ryman-Rasmussen JP. 2022. Adverse outcome pathway (AOP): α2u-globulin nephropathy and kidney tumors in male rats. Crit Rev Toxicol 52(5):345-357. doi: 10.1080/10408444.2022.2082269.

Lea IA, Pham LL, Antonijevic T, Thompson C, **Borghoff SJ**. 2022. Assessment of the applicability of the threshold of toxicological concern for per- and polyfluoroalkyl substances. Regul Toxicol Pharmacol 133(Aug):105190; doi: 10.1016/j.yrtph.2022.105190. Corrigendum 171(Nov 2026):106172; doi: 10.1016/j.yrtph.2026.106172.

Gentry R, Greene T, Chappell G, Lea I, **Borghoff S**, Yang C, Rathman J, Ribeiro JV, Hobocienski B, Mostrag A, Rodricks J, Clewell H. 2021. Integration of evidence to evaluate the potential for neurobehavioral effects following exposure to USFDA-approved food colors. Food Chem Toxicol 151:112097. doi: 10.1016/j.fct.2021.112097.

Gentry R, Rodricks J, Clewell H, Greene T, Chappell G, Lea I, **Borghoff S**, Yang C, Rathman J, Ribeiro JV, Hobocienski B, Mostrag A. 2021. RE: Response to the Office of Environmental Health Hazard Assessment on comments related to Gentry et al. (2021). Food Chem Toxicol 152:112202. doi: 10.1016/j.fct.2021.112202.

Black MB, Andersen ME, Pendse SN, **Borghoff SJ**, Streicker M, McMullen PD. 2021. RNA-sequencing (transcriptomic) data collected in liver and lung of male and female B6C3F1 mice exposed to various dose levels of 4-methylimidazole for 2, 5, or 28 days. Data in Brief 38:107420. doi: 10.1016/j.dib.2021.107420.

Borghoff SJ, Fitch SE, Black MVB, McMullen PD, Andersen ME, Chappell GA. 2021. A systematic approach to evaluate plausible modes of [action] for mouse lung tumors in mice exposed to 4-methylimidozole. Regul Toxicol Pharmacol 124:104977. doi: 10.1016/j.yrtph.2021.104977.

Chappell GA, Heintz MM, **Borghoff SJ**, Doepker CL, Wikoff DS. 2021. Lack of potential carcinogenicity for steviol glycosides — Systematic evaluation and integration of mechanistic data into the totality of evidence. Food Chem Toxicol 150:112045. doi: 10.1016/j.fct.2021.112045.

Chappell GA, Britt JK, **Borghoff, SJ**. 2020. Systematic assessment of mechanistic data for FDA-certified food colors and neurodevelopmental processes. Food Chem Toxicol 140:111310. doi: 10.1016/j.fct.2020.111310.

Chappell GA, Wikoff DS, Doepker CL, **Borghoff SJ**. 2020. Lack of potential carcinogenicity for acesulfame potassium — Systematic evaluation and integration of mechanistic data into the totality of the evidence. Food Chem Toxicol 141:111375. doi: 10.1016/j.fct.2020.111375.

Pham LL, **Borghoff SJ**, Thompson CM. 2020. Comparison of threshold of toxicological concern (TTC) values to oral reference dose (RfD) values. Regul Toxicol Pharmacol 113:104651. doi: 10.1016/j.yrtph.2020.104651.

Chappell GA, **Borghoff SJ**, Pham L, Doepker CL, Wikoff DS. 2019. Lack of potential carcinogenicity for sucralose — Systematic evaluation and integration of mechanistic data into the totality of the evidence. Food Chem Toxicol 135:110898. doi: 10.1016/j.fct.2019.110898.

Wikoff DS, Chappell GA, Fitch S, Doepker CL, **Borghoff SJ**. 2019. Lack of potential carcinogenicity for aspartame – Systematic evaluation and integration of mechanistic data into the totality of the evidence. Food Chem Toxicol 135:110866. doi: 10.1016/j.fct.2019.110866.

van de Ligt J, **Borghoff SJ**, Yoon M, Ferguson LJ, DeMaio W, McClanahan RH. 2019. Nondetectable or minimal detectable residue levels of N-(n-butyl) thiophosphoric triamide in bovine tissues and milk from a 28-d NBPT dosing study. Transl Anim Sci 3(4): 1606-1616. doi: 10.1093/tas/txz153.

Wikoff DS, Rager JE, Chappell GA, Fitch S, Haws L, **Borghoff SJ**. 2018. A framework for systematic evaluation and quantitative integration of mechanistic data in assessments of potential human carcinogens. Toxicol Sci 167(2):322–335. doi: 10.1093/toxsci/kfy279.

Borghoff SJ, Fitch S, Rager JE, Huggett D. 2018. A hypothesis-driven weight-of-evidence analysis to evaluate potential endocrine activity of perfluorohexanoic acid. Regul Toxicol Pharmacol 99:168–181.

Harrill AH, **Borghoff S**, Zorrilla L, Blystone C, Kissling GE, Malarkey D, Shockley K, Travlos G, DeVito MJ. 2018. NTP Research Report on baseline characteristics of Diversity Outbred (J:DO) mice relevant to toxicology studies. National Toxicology Program Research Report 6, Research Triangle Park, NC. Available at: https://www.ncbi.nlm.nih.gov/books/NBK525004/.

Klaren WD, Ring C, Harris MA, Thompson CM, **Borghoff S**, Sipes NS, Hsieh J-H, Auerbach SS, Rager JE. 2018. Identifying attributes that influence *in vitro*-to-*in vivo* concordance by comparing *in vitro* Tox21 bioactivity versus *in vivo* DrugMatrix transcriptomic responses across 130 chemicals. Toxicol Sci 120:709–723. doi: 10.1093/toxsci/kfy220.

Proctor DM, Suh M, Chappell G, **Borghoff SJ**, Thompson CM, Wiench K, Finch L, Ellis-Hutchings R. 2018. An adverse outcome pathway (AOP) for forestomach tumors induced by non-genotoxic initiating events. Regul Toxicol Pharmacol 96:30–40. doi: 10.1016/j.yrtph.2018.04.016.

Suh M, Proctor DM, Chappell G, Rager JE, Thompson CM, **Borghoff S**, Finch L, Ellis-Hutchings R, Wiench K. 2018. A review of the genotoxic, mutagenic, and carcinogenic potentials of several lower acrylates. Toxicology 402–403:50–67. doi: 10.1016/j.tox.2018.04.006.

Thompson CT, Suh M, Chappell G, **Borghoff S**, Ellis-Hutchings R, Wiench K, Finch L, Proctor DM. 2018. Assessment of the mode of action underlying development of forestomach tumors in rodents following oral exposure to ethyl acrylate and relevance to humans. Regul Toxicol Pharmacol 96:178–189. doi: 10.1016/j.yrtph.2018.05.006.

Borghoff SJ, Ring C, Banton M, Leavens TL. 2016. Physiologically based pharmacokinetic model for ethyl tertiary-butyl ether and tertiary-butyl alcohol in rats: Contribution of binding to α2u-globulin in male rats and high-exposure nonlinear kinetics to toxicity and cancer outcomes. J Appl Toxicol 37(5):621-640. doi 10.1002/jat.3412

Hughs BJ, Johnson T, Lynch A, **Borghoff SJ**, Green S, Mensing T, Sarang SS, LeBaron MJ. 2016. Methyl isobutyl ketone-induced hepatocellular carcinogenesis in B6C3F1 mice: A constitutive androstane receptor (CAR)-mediated mode of action. Regul Toxicol Pharmacol 81:421–429.

Wikoff DS, Rager JE, Haws LC, **Borghoff SJ**. 2016. A high dose mode of action for Tetrabromobisphenol A-induced uterine adenocarcinomas in Wistar Han rats: A critical evaluation of key events in an adverse outcome pathway framework. Regul Toxicol Pharmacol 77:143–159. doi: 10.1016/j.yrtph.2016.01.018.

Borghoff SJ, Wikoff D, Harvey S, Haws L. 2016. Dose- and time-dependent changes in tissue levels of tetrabromobisphenol A (TBBPA) and its sulfate and glucuronide conjugates following repeated administration to female Wistar Han Rats. Toxicol Rep 155:104–108. doi:10.1016/j.toxrep.2016.01.007.

Borghoff SJ, Poet TS, Green S, Davis J, Hughes B, Mensing T, Sarang SS, Lynch AM, Hard GC. 2015. Methyl isobutyl ketone exposure-related increases in specific measures of α2u-globulin (α2u) nephropathy in male rats along with in vitro evidence of reversible protein binding. Toxicology 333:1–13.

Wikoff D, Thompson C, Perry C, White M, **Borghoff S**, Fitzgerald L, Haws LC. 2015. Development of toxicity values and exposure estimates for tetrabromobisphenol A (TBBPA): Application in a margin of exposure assessment. J Appl Toxicol 35(11):1292–1308. doi: 10.1002/jat.3132.

Faber W, Kirkpatrick D, Coder P, Li A, **Borghoff S**, Banton M. 2014. Subchronic, reproductive, and maternal toxicity studies with tertiary butyl acetate (TBAC). Regul Toxicol Pharmacol 68:332–342.

Juberg DR, **Borghoff SJ**, Becker RA, Casey W, Hartung T, Holsapple MP, Marty MS, Mihaich EM, Van Der Kraak G, Wade MG, et al. 2014. Lessons learned, challenges, and opportunities: The U.S. Endocrine Disuptor Screening Program. Altex 31(1):63–8.

Becker RA, Bergfelt DR, **Borghoff S**, Davis JP, Hamby BT, O'Connor, J.C., Kaplan, A.M., Sloan, C.S., Tyl, R.W., Wade, M., and Marty, M.S. 2012. Inter-laboratory study comparison of the 15-day intact adult male rat screening assay: Evaluation of an anti-thyroid chemical and a negative control chemical. Birth Defects Res (Part B) 95:63–78.

Borghoff SJ, Parkinson H, Leavens TL. 2010. Physiologically based pharmacokinetic rat model for methyl tertiary-butyl ether; comparison of selected dose metrics following various MTBE exposure scenarios used for toxicity and carcinogenicity evaluation. Toxicology 275(1-3):79–91.

Borghoff SJ, Hard GC, Berdasco NM, Gingell R, Green SM, Gulledge W. 2009. Methyl isobutyl ketone (MIBK) induction of α2u-globulin nephropathy in male, but not female rats. Toxicology 258:131–138.

Leavens TL, **Borghoff SJ.** 2009. Physiologically based pharmacokinetic model of methyl tertiary butyl ether and tertiary butyl alcohol dosimetry in male rats based on binding to α2u-globulin. Toxicol Sci 109(2):321–335.

Clewell RA, Kremer JJ, Williams CC, Campbell JL, Jr., Andersen ME, **Borghoff SJ**. 2009. Kinetics of selected di-n-butyl phthalate metabolites and fetal testosterone following repeated and single administration in pregnant rats. Toxicology 255(1–2):80–90.

Clewell RA, Kremer JJ, Williams CC, Campbell JL, Jr., Andersen ME, **Borghoff SJ**. 2008. Tissue exposures to free and glucuronidated monobutylphthalate in pregnant and fetal rat following exposure to di-n-butylphthalate: Evaluation with a PBPK model. Toxicol Sci 103(2):241–259.

Liao KH, Tan Y, Conolly RB, **Borghoff SJ**, Gargas ML, Andersen ME, Clewell HJ. 2007. Bayesian estimation of pharmacokinetic and pharmacodynamic parameters in a mode-of-action-based cancer risk assessment for chloroform. Risk Anal 27:1535–1551.

Ferguson LJ, Lebetkin EH, Lih FB, Tomer KB, Parkinson HD, **Borghoff SJ**., Burka LT. 2007. 14C-Labeled pulegone and metabolites binding to alphα2u-globulin in kidneys of male F-344 rats. J Toxicol Environ Health A.70:1416–1423.

Gaido KW, Hensley JB, Liu D, Wallace DG, **Borghoff S**, Johnson KJ, Hall SJ, Boekelheide K. 2007. Fetal mouse phthalate exposure shows that gonocyte multinucleation is not associated with decreased testicular testosterone. Toxicol Sci 97(2):491–503.

Cruzan G, **Borghoff SJ**, de Peyster A, Hard GC, McClain M, McGregor DB, Thomas MG. 2007. Methyl tertiary-butyl ether mode-of-action for cancer endpoints in rodents. Regul Toxicol Pharmacol 47:156–165.

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