MARGARET M. WHALEN, Ph. D.
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Education:

1979- B.S. in Chemistry. South Dakota School of Mines and Technology, Rapid City, SD

1984- Ph. D. in Biochemistry. University of New Mexico School of Medicine, Albuquerque, NM

1984-1987. Post-doctoral Fellow. Neurobiology Group, Life Sciences Division, Los Alamos National Laboratory, Los Alamos, NM

Professional Experience:

1/2013-present: Adjunct Professor of Cancer Biology, Vanderbilt University, Nashville, TN

7/2009-present: Professor, Department of Chemistry, Tennessee State University, Nashville, TN

7/2004-6/2009: Associate Professor, Department of Chemistry, Tennessee State University, Nashville, TN

1/99-6/2004: Assistant Professor, Department of Chemistry, Tennessee State University, Nashville, TN

8/95-12/98: Assistant Professor, Department of Chemistry, Murray State University, Murray, KY

10/88-5/95: Research Assistant Professor, Department of Medicine, Division of Rheumatology, University of New Mexico School of Medicine, Albuquerque, NM

10/87-9/88: Staff Member, Neurobiology section, Physiology Group (LS-1), Life Sciences Division, Los Alamos National Laboratory, Los Alamos, NM

9/84-9/87: Post-doctoral Fellow, Neurobiology section, Physiology Group, Life Sciences Division, Los Alamos National Laboratory, Los Alamos, NM

8/79-8/84: Graduate Teaching and Research Assistant, Dept. of Biochemistry, University of New Mexico School of Medicine, Albuquerque, NM

Honors

2016 Research Mentorship Award 38th University Wide Research Symposium, Tennessee State University, April 4-8, 2015.

2012. . Research Mentorship Award. 34th University Wide Research Symposium, Tennessee State University, March 15-19, 2010.

2011. Appointed to the Editorial Advisory Board of the Journal of Applied Toxicology

2010. Research Mentorship Award. 32nd University Wide Research Symposium, Tennessee State University, March 15-19, 2010.

2006. Blue and White All-Star Award for Faculty in the Sciences

2006. Who's Who Among America's Teachers

2004. Who's Who Among America's Teachers

2002. Research selected for a press release, American Chemical Society, National Meeting, April 8, 2002, Orlando, FL.
1999. Research selected for a press release, American Chemical Society, National Meeting, March 1999, Anaheim, CA.
1989 and 1988. Nominated as outstanding recent graduate, South Dakota School of Mines and Technology.
1984. Director's Funded Post-doctoral Fellowship, Los Alamos National Laboratory
1984. National Student Research Forum, Galveston, TX

Memberships:

American Society for Biochemistry and Molecular Biology
American Association for Cancer Research
American Chemical Society
Sigma Xi
American Association for the Advancement of Science
Tennessee Academy of Science

Publications in refereed journals:

Brown, S., Wilburn, W., Martin, T., Whalen, M.M. 2017. Butyltin compounds alter secretion of interleukin 6 from human immune cells. J. Appl. Toxicol. In press

Massawe, R., Drabo, L., Whalen, M.M. 2017. Effects of Pentachlorophenol and Dichlorodiphenyltrichloroethane on Secretion of Interferon gamma (IFNγ) and Tumor Necrosis Factor alpha (TNFα) from Human Immune Cells. Toxicol. Mech. Methods 27: 223-235 PMCID:PMC5453502

Martin, T.J., Whalen, M.M. 2017.Exposures to the Environmental Toxicants Pentachlorophenol (PCP) and Dichlorodiphenyltrichloroethane (DDT) Modify Secretion of Interleukin 1-Beta (IL-1β) from Human Immune Cells. Archives of Toxicology 91: 1795-1808 PMCID: PMC5336548

Brown, S., Tehrani, S., Whalen M.M. 2017. Dibutyltin-Induced Alterations of Interleukin 1 Beta Secretion From Human Immune Cells. J. Appl. Toxicology 37:181-191 PMCID:PMC5114172

Lawrence, S., Pellom, Jr., S.T., Shanker, A., Whalen, M.M. 2016. Tributyltin Exposure Alters Cytokine Levels in Mouse Serum. J. Immunotox. 13:870-878 PMCID:PMC5159249

Amara S,[1] Whalen M,[2] Tiriveedhi V [3] 2016 High salt induces anti-inflammatory MΦ2-like phenotype in peripheral macrophages. Biochemistry and Biophysics Reports 7: 1-9. PMCID: PMC4877052

Anisuzzaman, S,. Whalen, M.M. 2016. Tetrabromobisphenol A and Hexabromocyclododecane Alter Secretion of IL-1β from Human Immune Cells. J. Immunotox. 13:403-416 PMCID: PMC4910520

Almughamsi, H., Whalen, M.M. 2016. Hexabromocyclododecane and Tetrabromobisphenol A alter secretion of interferon gamma (IFNγ) from human immune cells. Archives of Toxicology 90:1695-1707 PMCID: PMC4767696

Rana, K., Whalen, M.M. 2015. Activation of Protein Kinase C and Protein Kinase D in Human Natural Killer Cells: Effects of Tributyltin, Dibutyltin, and Tetrabromobisphenol A. Toxicology Mechanisms and Methods 25:680-688. PMCID: PMC4648668

Brown, S, Whalen, MM. 2015. Tributyltin alters secretion of interleukin 1 beta from human immune cells. Journal of Applied Toxicology 35: 895-908 PMCID: PMC4424187

Cato, A, Celada. L, Kibakaya, EC, Simmons, N, Whalen, MM. 2015. Brominated Flame Retardants, Tetrabromobisphenol A and Hexabromocyclododecane activate mitogen-activated protein kinases (MAPKs) in human natural killer cells. Cell Biology and Toxicology 30:559-571 PMCID: PMC4246052

Amara, S., Lopez, K., Brown, S-K, Whalen, M., Myles, E.L.,, Ivy, M.T., Johnson, T., Schey, K.L. Richmond, A. Tiriveedhi, V. 2015. Synergistic effect of pro-inflammatory TNF<alpha> and IL-17 in periostin mediated collagen deposition: Potential role in liver fibrosis. Molecular Immunology 64:26-35 PMCID: PMC4282823

Lawrence, S, Reid, J*, Whalen, MM. 2015. Secretion of interferon gamma (IFNγ) from human immune cells is altered by exposure to tributyltin (TBT) and dibutyltin (DBT). Environmental Toxicology 30:559-571 PMCID: PMC4065226

Celada, L.J., Whalen, M.M. 2014. Effects of Butyltins (BTs) on Mitogen-Activated-Protein Kinase Kinase Kinase (MAP3K) and Ras Activity in Human Natural Killer Cells. Journal of Appl. Toxicol. 34:1002-1011. PMCID:PMC3868639

Hurt, K., Hurd-Brown, T., Whalen, M.M. 2013. Tributyltin and dibutyltin alter secretion of tumor necrosis factor alpha from human natural killer (NK) cells and a mixture of T cells and NK cells. Journal of Appl. Toxicol. 33:503-510 PMCID: PMC3570729

Hurd-Brown, T. Udoji, F., Martin, T., Whalen, M.M. 2013. Effects of DDT and Triclosan on Tumor-cell Binding Capacity and Cell-Surface Protein Expression of Human Natural Killer Cells. Journal of Appl. Toxicol. 33:495-502 PMCID: PMC3459142

Hurd,T., Walker, J., Whalen, M.M. 2012. Pentachlorophenol decreases tumor-cell-binding capacity and cell-surface protein expression of human natural killer cells. Journal of Appl. Toxicol., 32: 627-634PMCID: PMC3428751

Hurd, T., Whalen, M.M. 2011. Tetrabromobisphenol A decreases cell-surface proteins involved in in human natural killer (NK) cell-dependent target cell lysis. Journal of Immunotoxicology 8: 219-227 PMCID: PMC3145820

Taylor, T.R., Whalen, M.M. 2011. Ziram Activates Mitogen-Activated Protein (MAP) Kinases and Decreases Cytolytic Protein Levels in Human Natural Killer Cells. Toxicology Mechanisms and Methods 21:577-584 PMCID: PMC3183386

Dudimah. F.D., Abraha, A., Wang, X., Whalen, M.M. 2010. Activation of p44/42 in human natural killer cells decreases cell-surface protein expression: Relationship to tributyltin-induced alterations of protein expression. Toxicology Mechanisms and Methods 20:544-555 PMCID: PMC2962685

Abraha, A., Rana, K., Whalen, M.M. 2010. Role of protein kinase C in the TBT-induced inhibition of lytic function and MAPK activation in human natural killer cells. Arch. Environ. Cont. Toxicol. 59:661-669 PMCID: PMC2909453

Person, RJ, Whalen, MM. 2010. Effects of butyltin exposures on MAP kinase dependent transcription regulators in human natural killer cells. Toxicol. Mech. and Meth. 20:227-233 PMCID: PMC2874114

Odman-Ghazi, SO, Abraha, A, Isom, ET, Whalen, MM. 2010. Dibutyltin activates MAP kinases in human natural killer cells, in vitro. Cell Biology and Toxicology, 26:469-479. PMCID: PMC2892640

Udoji, F, Martin, T, Etherton, R, Whalen, MM. 2010. Immunosuppressive effects of triclosan, nonylphenol, and DDT on human natural killer cells, in vitro. J. Immunotoxicology. 7:205-212 PMCID: PMC2890036

Hinkson, NC, Whalen, MM. 2010. Hexabromocyclododecane Decreases Tumor-cell-binding Capacity and Cell-Surface Protein Expression of Human Natural Killer Cells. J. Appl. Toxicol. 30:302-309 PMCID: PMC2876233
Dudimah, FD, Griffey, D, Wang, X, Whalen, MM. 2010 Activation of p44/42 MAPK plays a role in the TBT-induced loss of human natural killer (NK) cell function. Cell Biology and Toxicology 26:435-444 PMCID: PMC2891216
Kibakaya, EC, Stephen, K, Whalen, MM. 2009. Tetrabromobisphenol A has immunosuppressive effects on human natural killer cells. J. Immunotoxicology 6: 285-292 PMCID: PMC2782892
Hinkson, NC, Whalen, MM. 2009. Hexabromocyclododecane decreases the lytic function and ATP levels of human natural killer cells. J. Appl. Toxicol. 29:656-661 PMCID: PMC2788026
Lane, R, Ghazi, SO, Whalen, MM. 2009. Increases in cytosolic calcium ion levels in human natural killer cells in response to butyltin exposure. Arch. Environ. Contam. Toxicol. 57: 816-825 PMCID: PMC2765521
Abraha, A. Whalen, MM. (2009) The role of p44/42 activation in tributyltin-induced inhibition of human natural killer cells: effects of MEK inhibitors. J. Appl. Toxicol. 29:165-173 PMCID:PMC2642538
Powell, JJ, Davis, MV, Whalen, MM. (2009) Glutathione diminishes tributyltin- and dibutyltin-induced loss of lytic function in human natural killer cells. Drug and Chemical Toxicology 32: 9-16 PMCID:PMC2704261
Taylor, TR, Whalen, MM. (2009) Effects of Ziram on tumor-cell-binding capacity, cell-surface marker expression and ATP levels of human natural killer cells. Cell Biology and Toxicology 25: 447-455 PMCID: PMC2732751
Nnodu, U, Whalen, MM. (2008) Pentachlorophenol decreases ATP levels in human natural killer cells. J. Appl. Toxicol. 28:1016-1020 PMCID:PMC2583398
Whalen, MM, DeWitt, JC, Luebke, RW. (2008) Serum supplementation modulates the effects of dibutyltin on human natural killer cell function. Toxicological Science 104: 312-319. PMCID: PMC2245884
Odman-Ghazi, SO, Person, RJ, Whalen, MM. (2008) Effects of tributyltin on protein tyrosine kinases and phospholipase C gamma in human natural killer cells. Toxicol. Mech. Meth., 18:25-33.
Holloway, LN, Pannell, KH, Whalen, MM. (2008) Effect of a series of triorganotins on ATP levels in human natural killer cells. Environ. Toxicol. Pharmacol., 25: 43-50.
Dudimah, FD, Gibson, C, Whalen, MM. (2007) Effect of Dibutyltin (DBT) on ATP levels in human natural killer cells. Environ. Toxicol., 22:117-123
Aluoch, AO, Odman-Ghazi, SO, Whalen, MM. (2007) Pattern of MAP kinases p44/42 and JNK activation by non-lethal doses of tributyltin in human natural killer cells. Arch. Toxicol., 81:271-277.
Dudimah, FD, Odman-Ghazi, SO, Hatcher, F, Whalen, MM. (2007) Effect of Tributyltin (TBT) on the ATP levels in human natural killer cells: Relationship to TBT- induced decreases in NK function. J. Appl. Toxicol., 27:86-94.
Gomez, FD, Apodaca, P, Holloway, LN, Pannell, KH, Whalen, MM. (2007) Effect of a series of triorganotins on the immune function of human natural killer cells. Environ. Toxicol. Pharmacol., 23:18-24
Beach, TM, Whalen, MM. (2006) Effects of organochlorine pesticides on interleukin secretion from lymphocytes. Hum. Exp. Toxicol., 25: 651-659.

Aluoch, AO., Odman-Ghazi, SO, Whalen, MM. (2006) Alteration of an essential NK cell signaling pathway by low doses of tributyltin in human natural killer cells. Toxicology, **224**: 229-237
Whalen, MM and Odman-Ghazi, SO (2006) Effects of adenylyl cyclase and protein kinase A inhibition on signaling enzymes in natural killer cells: comparison to tributyltin. Hum. Exp. Toxicology, **25:** 333-340
Aluoch, AO and Whalen, MM**.** (2006) Effects of interleukins 2 and 12 on TBT-induced alterations of MAP kinases p38 and p44/42 in human natural killer cells. J. Applied Toxicology, **26**: 132-138
Thomas, LD, Shah, H, Green, SA, Bankhurst, AD, and Whalen, MM. (2005) Effects of interleukin 2 and 12 on the levels of granzyme B and perforin and their mRNAs in tributyltin-exposed human natural killer cells. Arch. of Toxicol., **79**: 711-720.
Catlin, R, Shah, H, Bankhurst, AD, and Whalen, MM (2005) Dibutyltin exposure decreases granzyme B and perforin in human natural killer cells. Environmental Toxicology and Pharmacology, **20**: 395-403.
Taylor, TR, Tucker, T. and Whalen, MM. (2005) Persistent inhibition of human natural killer cell function by ziram and pentachlorophenol. Environmental Toxicology, **20:** 418-424.
Aluoch, A. and Whalen, MM. (2005) Tributyltin-induced effects on MAP kinases p38 and p44/42 in human natural killer cells. Toxicology, **209**: 263-277.
Odman-Ghazi, SO, Hatcher, F, and Whalen, MM. (2005) Persistent Immunotoxic Effects of Tributyltin Can be Reversed by Interleukin 2. Environmental Toxicology and Pharmacology, **19**: 25-31.
Reed, A., Dzon, L., Loganathan, B.G., & Whalen, M.M. (2004) Immunomodulation of human natural killer cell cytotoxic function by organochlorine pesticides. Human and Experimental Toxicology, **23**: 463-471.
Wilson, S, Dzon, L, Reed, A, Pruitt, M, and Whalen, MM. (2004) Effects of Extended, In Vitro, Exposures to Low Levels of Organotin and Carbamate Pesticides on Human Natural Killer Cell Cytotoxic Function. Environmental Toxicology, **19**: 554-563
Thomas, LD, Shah, H, Green, SA, Bankhurst, AD, and Whalen, MM. (2004) Tributyltin Exposure Causes Decreased Granzyme B and Perforin Levels in Human Natural Killer Cells. Toxicology, **200:** 221-233
Chen, I-M, Whalen, MM, Bankhurst, A, Sever, CE, Doshi, R, Hardekopf, D, Montgomery, K, and Wilman CL. (2004) A New Human Natural Killer Leukemia Cell Line, IMC-1 Complex Chromosomal Rearrangement Defined by Spectral Karyotyping: Functional and Cytogenetic Characterization. Leukemia Research **28**:275-284.
Jobe, KL**,** Odman-Ghazi, SO, Whalen, MM, and Vercruysse, KP. (2003) Interleukin-12 Release from Macrophages by Hyaluronan, Chondroitin Sulfate A and Chondroitin Sulfate C Oligosaccharides. Immuno. Lett. **89**:99-109.
Bariagaber, AK and Whalen MM. (2003) Decreased Adenylyl Cyclase and cAMP-Dependent Protein Kinase Activities Inhibit the Cytotoxic Function of Human Natural Killer Cells. Human Immunology **64**:866-873.
Odman-Ghazi, SO, Hatcher, F, and Whalen, MM. (2003) Expression of Functionally Relevant Cell Surface Markers in Dibutyltin-exposed Human Natural Killer Cells. Chemico-Biological Interactions **146**:1-18

Whalen, MM, Loganathan, BG, Yamashita, N., and Saito, T. (2003) Immunomodulation of Human Natural Killer Cell Cytotoxic Function by Triazine and Carbamate Pesticides. Chemico-Biological Interactions **145**: 311-319.
Whalen, MM, Wilson, S, Gleghorn, C, Green, SA, and Loganathan BG. (2003) Brief Exposure to Triphenyltin Induces Irreversible Inhibition of the Cytotoxic Function of Human Natural Killer Cells. Environmental Research **92**: 213-230.
Whalen, MM, Williams, TB, Green, SA, and Loganathan, BG. (2002) Interleukins 2 and 12 Produce Recovery of Cytotoxic Function in Tributyltin-Exposed Human Natural Killer Cells. Environmental Research, **88**: 199-209.
Whalen, MM, Walker, L, and Loganathan, BG. (2002) Interleukins2 and 12 Produce Significant Recovery of Cytotoxic Function in Dibutyltin-Exposed Human Natural Killer Cells. Environmental Research **88:**103-115.
Whalen, MM, Ghazi, S, Loganathan, BG, and Hatcher, F. (2002) Expression of CD16, CD18, and CD56 in Tributyltin-Exposed Human Natural Killer Cells. Chemico-Biological Interactions **139:** 159-176.
Whalen, MM, **Green, SA**, and Loganathan BG. (2002) Brief Butyltin Exposure Induces Irreversible Inhibition of the Cytotoxic Function of Human Natural Killer Cells, In Vitro. Environmental Research **88:**19-29.
Whalen, MM and Loganathan, BG. 2001. Butyltin Exposure Causes a Rapid Decrease in cyclic AMP Levels in Human Lymphocytes. Toxicol. Appl. Pharmacol. **171:**141-148.
Whalen, MM, Hariharan, S, and Loganathan, BG. 2000. Phenyltin Inhibition of the Cytotoxic Function of Human Natural Killer Cells. Environmental Research **84:** 162-169.
Whalen, MM and Crews, JD. 2000. Inhibition of Phosphodiesterase Activity Contributes to the Lysis-Sensitive-Target Induced Elevation of cAMP in Human Natural Killer Cells. Biochemical Pharmacology **60:** 499-506.
Whalen, MM, Doshi, RN and Bankhurst AD. 1999. Lysophosphatidylcholine and Arachidonic Acid are Required in the Cytotoxic Response of Human Natural Killer Cells. Cellular Physiology and Biochemistry **9:** 297-309.
Whalen, MM, Loganathan, BG and Kannan, K. 1999. Immunotoxicity of Environmentally Relevant Concentrations of Butyltins on Human Natural Killer (NK) Cells in Vitro. Environmental Research, Environmental Research **81**: 108-116.
Whalen, MM and Green, CB. 1998. Lysis-sensitive Targets Stimulate an Elevation of cAMP in Human Natural Killer Cells. Immunology **93**: 415-420.
Whalen, MM. 1997. Inhibition of Human Natural Killer Cell Function, *in vitro*, by Glucose Concentrations Seen in Poorly Controlled Diabetes. Cellular Physiol. and Biochem. **7:**53-60.
Scott, AA, Head, DR, Kopecky, KJ, Appelbaum, FR, Theil, KS, Grever, MR, Chen, I-M, Whittaker, MH, Griffith, BB, Licht, JD, Waxman, S, Whalen, MM, Bankhurst, AD, Richter, L.C, Grogan, TM, and Willman, CL. 1994. HLA-DR$^-$, CD33$^+$, CD56$^+$, CD16$^-$ Myeloid/Natural Killer Cell Acute Leukemia: A Previously Unrecognized Form of Acute Leukemia Potentially Misdiagnosed as French-American-British Acute Myeloid Leukemia-M3. Blood **84:** 244-255.
Whalen, MM, Doshi, RN, Homma, Y and Bankhurst, AD. 1993. "Phospholipase C Activation in the Cytotoxic Response of Human Natural Killer Cells Requires Protein-tyrosine Kinase Activity. Immunology **79:** 542-547.
Whalen, MM, Doshi, RN and Bankhurst, AD. 1992. "Effects of Pertussis Toxin Treatment on Human Natural Killer Cell Function". Immunology **76:** 402-407.

Whalen, MM and Bankhurst, AD. 1990. "Effects of β-Adrenergic Receptor Activation, Cholera Toxin and Forskolin on Human Natural Killer Cell Function." Biochem. J. **272:** 327-331.
Whalen, MM, Bitensky, MW and Takemoto, DJ. 1990. "The Effect of the Gamma Subunit of the Cyclic GMP Phosphodiesterase of Bovine and Frog (Rana catesbiana) on the Kinetic Parameters of the Enzyme " Biochem. J. **265:** 655-658.
Whalen, MM and Bitensky, MW. 1989. "Comparison of the Phosphodiesterase Inhibitory Subunit Interactions of Frog and Bovine Rod Outer Segments". Biochem. J. **259:** 13-19
Bitensky, MW, Whalen, MM and Torney, DC. 1988. "Life, Evolution, and the Pursuit of Single Photon Sensitivity." Cold Spring Harb. Symp. Quant. Biol. **53:** 303-311.
Bitensky, MW, Whalen, MM, Torney, DC, Tatsumi, M and Yamazaki, A. 1987. "A Common Algorithm for the Transduction, Amplification and Cellular Response to Photons, Hormones, and Neurotransmitters." Prog. In Clin. and Biol. Res. **249:** 3-20.
Bitensky, MW, Torney, D, Yamazaki, A, Whalen, MM and George, JS. 1987. "A Model of the Light-Dependent Regulation of Retinal Rod Phosphodiesterase, Guanylate Cyclase and the Cation Flux". Advances in Expt. Med. and Biol. **221:** 107-121.
Whalen, MM and Wild, GC. 1987. "The Major Gangliosides of the Bovine Pineal Body". Lipids. **22**, 17-21.
Whalen, MM, Wild, GC, Spall, WD & Sebring, RJ. 1986. "Separation of Underivatized Gangliosides by Ion Exchange High Performance Liquid Chromatography". Lipids. 21, 267-270.
Bitensky, MW, George, JS, Whalen, MM & Yamazaki, A. 1985. "Molecular Mechanisms of Visual Excitation: A Concatenation of Nonlinear Cellular Processes". J. Stat. Physics. 39, 513-541.

Book Chapters:
Whalen, MM (2008) Impact of organotin compounds on the function of human natural killer cells. In: Tin Chemistry - Fundamentals, Applications, and Frontiers. Ed. A. Davies, K. Pannell, E. Tiekink and M. Gielen. Wiley

Whalen, MM. (2005) Chapter 6: Effects of selected environmental contaminants on human natural killer immune function. In: Trends in Immunology Research, Ed. BA Veskler pp.103-131 Nova Science Publishers, Inc.

Selected Presentations:
Ismail, F., Wilburn, W., Whalen, M., Exposure of human immune cells to triclosan alters the secretion of Interferon gamma. American Society for Cell Biology Annual Meeting, December 2-6, 2017, Philadelphia, PA

Jamal, S., Wilburn, W., Whalen, M., Triclosan alters the secretion of Tumor Necrosis Factor alpha from human immune cells. American Society for Cell Biology Annual Meeting, December 2-6, 2017, Philadelphia, PA

Brown, S., Boules, M., Hamza, N., Whalen, M. Tributyltin Alters Interleukin 1 beta and Interleukin 6 Production and mRNA expression from Human Immune Cells. American Society for Cell Biology Annual Meeting, December 3-7, 2016, San Francisco, CA

Boules, M., Brown, S., Whalen, M. Role of MAPKs and NFκB in Tributyltin-stimulated Interleukin 1 Beta Secretion and Production from Human Immune Cells. American Society for Biochemistry and Molecular Biology (ASBMB)/Experimental Biology Annual Meeting, April 22-26, 2017, Chicago, IL

Hamza, N., Brown, S., Whalen, M. Signaling Pathways Involved in Tributyltin-Induced Increases in Interleukin 6 Production by Lymphocytes. American Society for Biochemistry and Molecular Biology (ASBMB)/Experimental Biology Annual Meeting, April 22-26, 2017, Chicago, IL

Brown, S., Boules, M., Hamza, N., Whalen, M. Involvement of MAPK Signaling Pathways in Tributyltin-induced Increases of Interleukin 1 beta and Interleukin 6 mRNA in Human Lymphocytes. American Society for Biochemistry and Molecular Biology (ASBMB)/Experimental Biology Annual Meeting, April 22-26, 2017, Chicago, IL

Brown, S., Tehrani, S., Wilburn, W., Whalen, M.M. Dibutyltin Alters Interleukin 1 beta and Interleukin 6 Secretion from Human Immune Cells.. 252nd American Chemical Society National Meeting and Exposition, August 21-25, 2016, Philadelphia, PA

Lawrence, S., Pellom Jr., S.T., Shanker, S.,Whalen, M.M. Tributyltin-induced dysregulation of inflammatory cytokine levels in human and mouse immune cells. American Association for Cancer Research (AACR) Annual Meeting, April 16-20, 2016, New Orleans, LA

Wilburn, W., Whalen, M.M. Tributyltin Alters Secretion of Interleukin 6 (IL-6) From Human Immune Cells. American Society for Biochemistry and Molecular Biology (ASBMB)/Experimental Biology Annual Meeting, April 2-6, 2016 San Diego, CA

Martin, T., Whalen, M.M. Pentachlorophenol and Dichlorodiphenyltrichloroethane Alter Secretion of Interleukin 1 Beta (IL-1β) from Human Immune Cells. American Society for Biochemistry and Molecular Biology (ASBMB)/Experimental Biology Annual Meeting, April 2-6, 2016 San Diego, CA

Massawe, R., Whalen, M.M. Effects of Pentachlorophenol (PCP) on Secretion of Interferon Gamma (IFNγ) from Human Immune Cells. American Society for Biochemistry and Molecular Biology (ASBMB)/Experimental Biology Annual Meeting, April 2-6, 2016 San Diego, CA

Boules, M., Brown, S., Whalen, M.M. Role of ERK1/2 and p38 MAPKs in Tributyltin-stimulated Interleukin 1 Beta Secretion and Production from Human Immune Cells. American Society for Biochemistry and Molecular Biology (ASBMB)/Experimental Biology Annual Meeting, April 2-6, 2016 San Diego, CA

Brown, S., Wilburn, W., Whalen, M.M. Dibutyltin Exposures Alter Secretion of Interleukin 6 from Human Immune Cells. American Society for Biochemistry and Molecular Biology (ASBMB)/Experimental Biology Annual Meeting, April 2-6, 2016 San Diego, CA

Brown, S., Boules, M., Whalen, M.M. Effects of Tributyltin exposure and MAPK stimulation on Interleukin 1 beta Production and mRNA expression from Human Immune Cells. 2015 National Meeting of the American Society for Cell Biology (ASCB) /International Federation for Cell Biology (IFCB) Meeting, December 12-16, San Diego, CA

Lawrence, S. Pellom Jr., S.T. Whalen, M.M., Shanker, A. Tributyltin alters the Production and Secretion of Inflammatory Cytokines from Human and Mouse Immune Cells. American Association for Cancer Research (AACR), April 18-22, 2015, Philadelphia, PA

Wilburn, W., Brown, S., Whalen, M.M. Tributyltin Decreases Secretion of Interleukin 6 (IL-6) From Human Immune Cells. American Society for Biochemistry and Molecular Biology (ASBMB), March 28-April 1, 2015, Boston, MA.

Almughamsi, H., Whalen, M.M. Hexabromocyclododecane and tetrabromobisphenol A alter secretion of interferon gamma (IFNγ) from human immune cells. American Society for Biochemistry and Molecular Biology (ASBMB), March 28-April 1, 2015, Boston, MA.

Brown, S., Whalen, M.M. Effects of Tributyltin Exposures on Interleukin 1 beta Secretion and Production from Human Immune Cells. American Society for Biochemistry and Molecular Biology (ASBMB), March 28-April 1, 2015, Boston, MA.

Brown, S., Whalen, M.M. Dibutyltin-induced alterations of interleukin 1 beta secretion from human immune cells. American Society for Cell Biology (ASCB) December 6-10, 2014, Philadelphia, PA

Brown, S., Whalen, M.M. Mechanism of tributyltin-stimulated interleukin-1 beta secretion from human lymphocytes . 248th American Chemical Society (ACS) National Meeting & Exposition, August 10-14, 2014 San Francisco, CA

Almughamsi, H.**,** Whalen, M.M. Secretion of interferon gamma (ifny) from human immune cells is altered by exposure to hexabromocyclododecane . 248th A**merican Chemical Society (A**CS**)** National Meeting & Exposition**,** August 10-14, 2014 San Francisco, CA

Lawrence, S. Pellom Jr., S.T. Hurd-Brown, T., Shanker, A., Whalen, M.M.
Elevation of tumor-promoting cytokines in mice exposed to the environmental contaminant tributyltin. American Association of Cancer Research (AACR) Annual Meeting, April 5-9, 2014, San Diego, California

Brown, S., Whalen, M.M. Effects of tributyltin exposures on secretion of interleukin 1 beta from human immune cells. American Association of Biochemistry and Molecular Biology (ASBMB) Annual Meeting, April 26-30, 2014, San Diego, California

Hurd-Brown, T., Whalen, M.M. Effects of Pentachlorophenol (PCP) on the Mitogen Activated Kinase (MAPK) pathway in Natural Killer Cells. 246th American Chemical Society National Meeting, September 8-12, 2013, Indianapolis, IN.

Celada, L. Whalen, M.M. The effect of tetrabromobisphenol A on human natural killer cells.American Society for Biochemistry and Molecular Biology 2012 Annual Meeting, April 20-24, 2013, Boston, MA.

Celada, L, Whalen, M.M. The effect of butyltins and a flame retardant on mitogen-activated-protein-kinase kinase kinases (MAP3Ks) in human natural killer cells. 244th Annual ACS meeting, Philadelphia, PA, August 19-24, 2012

Hurt, K., Whalen, M.M. Exposure to tributyltin alters the secretion of tumor necrosis factor alpha from human lymphocytes. American Society for Biochemistry and Molecular Biology 2012 Annual Meeting, April 21-25, 2012, San Diego, CA.

Hurd-Brown, T., Udoji, F., Martin, T., Whalen, M.M. 4, 4'-Dichlorodiphenyltrichloroethane (DDT) and Triclosan (TCS) Decrease Tumor-cell-binding Capacity and Cell-Surface Protein Expression of Human Natural Killer Cells. American Association for Cancer Research Annual Meeting, March 31-April 4, 2012 McCormick Place West, Chicago, IL

Hurd, T., Walker, J., Whalen, M.M. Pentachlorophenol decreases target-cell binding function and cell surface protein expression in human natural killer cells. 242nd American Chemical Society National Meeting, Denver, CO August 28-September 1, 2011.

Whalen, M.M. Tetrabromobisphenol A activates mitogen-activated protein kinases in human natural killer cells. Experimental Biology 2011, American Association of Biochemistry and Molecular Biology National Meeting, April 9-13, 2011, Washington, DC.

Reid, J., Whalen, M.M. The brominated flame retardants hexabromocyclodocecane and tetrabromobisphenol A decrease secretion of interferon gamma from human natural killer cells. Experimental Biology 2011, American Association of Biochemistry and Molecular Biology National Meeting, April 9-13, 2011, Washington, DC.

Rana, K., Whalen M.M. Activation of Protein Kinase D is part of the NK cell signaling pathway activated in the tumor-cell destroying process. Experimental Biology 2011, American Association of Biochemistry and Molecular Biology National Meeting, April 9-13, 2011, Washington, DC.

Celada, L., Whalen, M.M. Mitogen-activated protein kinase kinase kinase (MAP3K) and GTPase activity in human natural killer (NK) cells exposed to dibutyltin (DBT). Experimental Biology 2011, American Association of Biochemistry and Molecular Biology National Meeting, April 9-13, 2011, Washington, DC.

Whalen, MM., Martin, T. Triclosan causes persistent suppression of the immune function of human natural killer cells. Spring 2010 National Meeting and Exposition of the American Chemical Society, March 21-25, San Francisco, CA

Etherton, R, Whalen, MM. Nonylphenol interferes with the immune function of human natural killer cells. Spring 2010 National Meeting and Exposition of the American Chemical Society, March 21-25, San Francisco, CA

Abraha, AB, Whalen, MM. Role of p44/42 activation in TBT-induced losses of granzyme B and perforin in human natural killer cells. American Society for Biochemistry and Molecular Biology/Experimental Biology 2010 Annual Meeting, Anaheim, CA, April 24-28, 2010.

Celada, L, Whalen, MM. Tributyltin causes activation of the MAP3K, c-raf, but not Ras in human natural killer cells. American Society for Biochemistry and Molecular Biology/Experimental Biology 2010 Annual Meeting, Anaheim, CA, April 24-28, 2010.

Rana, K, Whalen, MM. Effect of TBT exposures on Protein kinase D activity of human natural killer cells. American Society for Biochemistry and Molecular Biology/Experimental Biology 2010 Annual Meeting, Anaheim, CA, April 24-28, 2010.

Taylor, TR, Whalen, MM. Effects of Ziram on Human Natural Killer Cells MAP kinases and Cytolytic Proteins. American Society for Biochemistry and Molecular Biology/Experimental Biology 2010 Anaheim, CA, April 24-28, 2010.

Kibakaya, EC, Stephen, K, Whalen, MM. Teterabromobisphenol A interferes with the immune function of human natural killer cells. 238th American Chemical Society National Meeting, Washington DC, August 16-20, 2009.

Odman-Ghazi, S, Whalen, MM. Effects of exposures to dibutyltin on signaling pathways and cytosolic calcium ion levels in human natural killer cells. 238th American Chemical Society National Meeting, Washington DC, August 16-20, 2009.

Udoji, F, Whalen, MM. Analysis of effects of dichloro-diphenyl-trichloroethane (DDT) on natural killer cells. 238th American Chemical Society National Meeting, Washington DC, August 16-20, 2009.

Whalen, MM. Effect of pentachlorophenol on MAP kinases in human natural killer cells. American Society for Biochemistry and Molecular Biology/Experimental Biology 2009 Annual Meeting, New Orleans, LA, April 18-22, 2009.

Abraha, AB, Whalen, MM. Inhibition of lytic function of human NK cells by Tributyltin: Role of Protein Kinase C. American Society for Biochemistry and Molecular Biology/Experimental Biology 2009 Annual Meeting, New Orleans, LA, April 18-22, 2009.

Hinkson, NC, Whalen, MM. Hexabromocyclododecane decreases the lytic function and ATP levels of human natural killer cells. American Society for Biochemistry and Molecular Biology/Experimental Biology 2009 Annual Meeting, New Orleans, LA, April 18-22, 2009.

Taylor, TR, Whalen, MM. Effects of Ziram on Human Natural Killer Cells MAP kinases p38 and p44/42. American Society for Biochemistry and Molecular Biology/Experimental Biology 2009 Annual Meeting, New Orleans, LA, April 18-22, 2009.

Celada, L, Whalen, MM. Tributyltin causes activation of c-raf in human natural killer cells. American Society for Biochemistry and Molecular Biology/Experimental Biology 2009 Annual Meeting, New Orleans, LA, April 18-22, 2009.

Person, RJ, Whalen, MM. The effects of tributyltin on the transcription regulator AP-1. American Society for Biochemistry and Molecular Biology/Experimental Biology 2009 Annual Meeting, New Orleans, LA, April 18-22, 2009.

Whalen MM**,** Invited speaker, Workshop Session: Natural killer cells as targets of drugs, toxicants, and biologicals. 47th Society of Toxicology Meeting. "Environmental immunotoxicants on human NK cells. Seattle, WA, March 19, 2008.

Stephen, K, Whalen, MM. Inhibition of human natural killer cell lytic function by the brominated flame retardants, hexabromocyclododecane and tetrabromobisphenol A. 235th Annual American Chemical Society National Meeting, New Orleans, LA , April 6-10, 2008.

Nnodu, U, Whalen, MM. Decreases in ATP levels of human natural killer cells induced by exposure to Pentachlorophenol. Experimental Biology 2008- American Society of Biochemistry and Molecular Biology. San Diego, CA, April 5-9, 2008

Taylor, T, Whalen, MM. Effects of ziram on tumor cell binding capacity, cell-surface marker expression, and ATP levels of human natural killer cells. Experimental Biology 2008- American Society of Biochemistry and Molecular Biology. San Diego, CA, April 5-9, 2008

Odman-Ghazi, SO, Isom, ET, Whalen, MM. Alteration of NK Cell Signaling Pathways by Exposure of Human Natural Killer Cells to Dibutyltin. Experimental Biology 2008- American Society of Biochemistry and Molecular Biology. San Diego, CA, April 5-9, 2008

Dudimah, FD, Whalen, MM. Selective Activation of P-p44/42 by Phorbol 12-myristate 13-acetate (PMA) in Human Natural killer Cells Results in loss of Cytotoxic Function. Experimental Biology 2008- American Society of Biochemistry and Molecular Biology. San Diego, CA, April 5-9, 2008

Abraha, AB, Whalen, MM. The role of MEK in TBT-induced activation of p44/42 in human natural killer cells. Experimental Biology 2008- American Society of Biochemistry and Molecular Biology. San Diego, CA, April 5-9, 2008

Nnodu, U, Whalen, MM. Decreases in ATP levels of human natural killer cells induced by exposure to Pentachlorophenol. Third Annual Posters at the Capitol Presentation, Nashville, TN, February 6, 2008.

Stephen, K, Whalen, MM. Inhibition of human natural killer cell lytic function by the brominated flame retardants, hexabromocyclododecane and tetrabromobisphenol A. Third Annual Posters at the Capitol Presentation, Nashville, TN, February 6, 2008.

Whalen, MM. Effects of organotin compounds on human natural killer lymphocytes. Invited Seminar, presented to the risk assessments group of the Environmental Protection Agency's (EPA) National Center for Environmental Assessment (NCEA), Cincinnati, OH January 12, 2006.

Whalen, M.M. and Ghazi, S.O. "Inhibition of adenylyl cyclase and cAMP-dependent protein kinase increases the expression of phospholipase C gamma 1 and p44/42 MAPK in human natural killer cells", 2005 FEBS-IUBMB Congress, July 6, 2005, Budapest, Hungary.

Whalen, MM The interaction of organotins with human natural killer cells. Invited talk. 11th International Conference on the Coordination and Organometallic Chemistry of Germanium, Tin, and Lead (ICCOC-GTL-11) Santa Fe, NM, June 27-July 2, 2004.

Whalen, MM. Effects of organotin contaminants on human natural killer lymphocyte function. Invited seminar University of Texas at El Paso, April 9, 2004

Whalen, MM. Cytotoxic function of natural killer lymphocytes as a biomarker for chemically-induced immune dysfunction. EPA/EPSCOR Special Conference on Biomarkers, Invited Speaker, Lexington, KY May 11-12, 2003.

Whalen, MM., Regulation of the Cytotoxic Function of Human Natural Killer Lymphocytes: Effect of Butyltin Compounds. Invited Seminar, USDA Western Regional Nutrition Center, University of California at Davis, Davis, CA, September 16, 2002

Whalen, MM., Regulation of the Tumor-killing Function of Human Natural Killer Lymphocytes: Effect of Butyltin Compounds. Invited Seminar, National Institute of Advanced Industrial Science and Technology (AIST) Nagoya, JAPAN, June 27, 2002

Whalen, MM. Regulation of the Tumor -killing Function of Human Natural Killer Lymphocytes: Effect of Butyltin Compounds. Vanderbilt University, Department of Chemistry, Nashville, TN, April 15, 2002.

Whalen, M.M. "Health Effects of Radiation", Teaching Radiation, Energy and Technology (TREAT)Workshop, DOE/EPA Environmental Waste Management Education and Community Involvement Project, Savannah State University, July 23-26, 2001, Savannah, GA.

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Program Director
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Past Funding:
Grant funded May 1, 2007-April 30, 2011, as principal investigator on subproject #2,:
$580,296.00 (direct costs). National Institutes of Health: MBRS-SCORE program
Inhibition of Human Natural Killer Cells by Butyltins
Grant funded January 1, 2003- December 31, 2006, as principal investigator on subproject #8,:
$565,918.00 (direct costs). National Institutes of Health: MBRS-SCORE program
Inhibition of the Cytotoxic Response of Human NK cells by Butyltins
Grant funded 2000-2002, as principal investigator on subproject #7:
$319,742.00 (direct costs). National Institutes of Health: MBRS program.
Inhibition of the Cytotoxic Response of Human NK cells by Butyltins
Grant funded 1998-2002, as principal investigator:
$94,500.00 (direct and indirect costs) National Institutes of Health: Academic Research Enhancement Award (AREA).Target Cell Induced Elevation of cAMP in Human NK Cells.