

Courtney Nicholas

Ohio State University
Graduate School
program in Molecular, Cellular, and Developmental Biology
department of Medicine, division of Pulmonary, Allergy,
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Education

- 9/05-present *Graduate Curriculum*, program in Molecular, Cellular, and Developmental Biology, Ohio State University, Columbus OH
- Spring 2004 CHEM 641 – *Graduate Biochemistry II*
Hunter College, City University of New York, NY
- BIOL 714 – *Graduate Molecular Cell Biology*
Hunter College, City University of New York, NY
- Fall 2003 CHEM 640 – *Graduate Biochemistry I*
Hunter College, City University of New York, NY
- 1995-2000 Bachelor of Science, Biology
The University of Scranton, Scranton PA

Professional Experience

- 6/00- 9/05 Research Technician, Leonard Augenlicht Laboratory; Montefiore Medical Center/Albert Einstein Cancer Center, Bronx NY

Publications

- Apigenin blocks lipopolysaccharide-induced lethality in vivo and pro-inflammatory cytokine expression by inactivating NF- κ B through the suppression of p65 phosphorylation.* Courtney Nicholas, Sanjay Batra, Melissa A Vargo, Oliver H Voss, Mikhail A Gavrilin, Mark D Wewers, Denis C Guttridge, Erich Grotewold, and Andrea I Doseff. **The Journal of Immunology**. In Press.
- p27kip1 Regulates cdk2 activity in the proliferating zone of the mouse intestinal epithelium: potential role in neoplasia*
Smartt HJ, Guilmeau S, Nasser SV, Nicholas C, Bancroft L, Simpson SA, Yeh N, Yang W, Mariadason JM, Koff A, Augenlicht LH. **Gastroenterology**. 2007 Jul;133(1):232-43.
- Inactivation of p21^(WAF1/cip1) enhances intestinal tumor formation in Muc2^{-/-} mice.* Yang WC, Velcich A, Lozonschi I, Liang J, Nicholas C, Zhuang M, Bancroft L, Augenlicht LH. **American Journal of Pathology**. 2005 Apr; 166(4):1239-46.
- Gene Expression Profiling of Intestinal Epithelial Cell Maturation along the Crypt-Villus Axis.* John M. Mariadason, Courtney Nicholas, Kaitlin E. L'Italien, Min Zhuang, Helena J.M. Smartt, Barbara G. Heerdt, Wancai Yang, Georgia A. Corner, Andrew J. Wilson, Lidija Klampfer, Diego Arango, and Leonard H. Augenlicht. **Gastroenterology**. 2005 Apr; 128(4):1081-8.
- Molecular mechanisms of action and prediction of response to oxaliplatin in colorectal cancer cells.* Arango D, Wilson AJ, Shi Q, Corner GA, Aranes MJ, Nicholas C, Lesser M, Mariadason JM, Augenlicht LH. **British Journal of Cancer**. 2004 Nov 29;91(11):1931-46.

Gene Expression Profiling Based Prediction of Response of Colon Carcinoma Cells to 5-Fluorouracil and Camptothecin. John M. Mariadason, Diego Arango, Andrew J. Wilson, Georgia A. Corner, **Courtney Nicholas**, Maria J. Arañes, Martin Lesser, Edward L. Schwartz, Quihu Shi, Leonard H. Augenlicht. **Cancer Research**, 2003 December 15;63(24):8791-812.

Targeted Inactivation of p27^{kip1} is Sufficient for Large and Small Intestinal Tumorigenesis in the Mouse, which can be Augmented by a Western-Style High-Risk Diet. Yang W, Bancroft L, **Nicholas C**, Lozonschi I, Augenlicht LH. Albert Einstein Cancer Center, Montefiore Medical Center, 111 East 210th Street, Bronx NY 10467. **Cancer Research**. 2003 August 15;63(16):4990-6.

c-Myc overexpression sensitises colon cancer cells to camptothecin-induced apoptosis. D Arango, JM Mariadason, AJ Wilson, GA Corner, **C Nicholas**, MJ Aranes, LH Augenlicht. Albert Einstein Cancer Center, Montefiore Medical Center, Oncology Department, 111 East 210th Street, Bronx NY 10467 USA. **British Journal of Cancer** (2003) 89, 1757-1765.

Colorectal cancer in mice genetically deficient in the mucin Muc-2. Velcich A, Yang W, Heyer J, Fragale A, **Nicholas C**, Viani S, Kucherlapati R, Lipkin M, Yang K, Augenlicht L. **Science**. 2002 1; 295(5560): 1726-9

p21^(WAF1/cip1) Is an Important Determinant of Intestinal Cell Response to Sulindac in vitro and in vivo. Yang W, Velcich A, Mariadason J, **Nicholas C**, Corner G, Houston M, Edelman W, Kucherlapati R, Holt PR, Augenlicht LH. **Cancer Research**, 2001 August 15;61(16):6297-302.

Abstracts

The flavonoid apigenin inhibits the production of inflammatory cytokines by inhibiting the phosphorylation and inactivation of NF- κ B in LPS-stimulated monocytes and in vivo. **Nicholas, C.**, Batra, Vargo, M.A., Voss, O.H., Gavrilin, M.A., Guttridge, D., Wewers, M.D., Grotewold, E., and Doseff, A.I. Department of Internal Medicine, Division of Pulmonary, Critical Care, and Sleep Medicine. Dorothy M. Davis Heart & Lung Research Institute, The Ohio State University, Columbus, OH. Poster presented as part of the Second Annual Pulmonary Research Day, September 28, 2007.

The Role of HSP27 and PKC δ as Regulators of Caspase-3 during Apoptosis. **Nicholas, C.**, Voss, O.H., Batra, S., Malavez, Y., Sánchez-Peña, I., Doseff, A.I. Department of Internal Medicine, Division of Pulmonary, Critical Care, and Sleep Medicine. Dorothy M. Davis Heart & Lung Research Institute, The Ohio State University, Columbus, OH. Poster presented as part of the First Annual Pulmonary Research Day, September 22, 2006.

Regulation of Cell Death by Phosphorylation of Caspase-3. Sanchez-Pena, I., **Nicholas, C.**, Voss, O.H., Malavez, Y., and Doseff, A.I. Department of Internal Medicine, Department of Molecular Genetics, Dorothy M. Davis Heart and Lung Research Institute, The Ohio State University, Columbus OH. Ohio Student Research Forum, August 11, 2006. Poster presented as part of NIH Research Experience for Undergraduates program, Summer 2006.

Prediction of sensitivity to sulindac in colon carcinoma cells by gene expression profiling. AJ Wilson, D Arango, Q Shi, G Corner, **C Nicholas**, M Arañes, H Smartt, M Lesser, JM Mariadason, LH Augenlicht. Albert Einstein Cancer Center, Montefiore Medical Center, Bronx NY, School of Public Health, New York Medical College, Valhalla NY, Biostatistics Unit, North Shore – Long Island Jewish Research Institute, Manhasset NY. Abstract for the 95th Annual Meeting of the American Association for Cancer Research, Orlando FL, April 2004.

Hypermethylation of p21^{WAF1/cip1} is linked to intestinal tumor formation and lack of response to sulindac in mice. WanCai Yang, Laura Bancroft, **Courtney Nicholas**, Ioana Lozonschi, Sharon Simpson, Leonard H Augenlicht. Albert Einstein Cancer Center, Montefiore Medical Center, Bronx NY. Abstract for the 95th Annual Meeting of the American Association for Cancer Research, Orlando FL, April 2004.

Analysis of the Genetic Reprogramming that Defines Differentiation Along the Intestinal Crypt-Villus Axis. JM Mariadason, **C Nicholas**, K L'Italien, GA Corner, S Simpson, W Yang, AJ Wilson, L Klampfer, BG Heerdt, D Arango and LH Augenlicht. Montefiore Medical Center, Albert Einstein Cancer Center, Bronx NY 10467. Albert Einstein Cancer Center, Montefiore Medical Center, Bronx NY. Abstract for the 95th Annual Meeting of the American Association for Cancer Research, Orlando FL, April 2004.

Gastrointestinal tumor susceptibility of p27kip1-deficient mice and modulation by a Western-style high-risk diet. WanCai Yang, Laura Bancroft, **Courtney Nicholas**, Ioana Lozonschi, Leonard H Augenlicht. Oncology Department, Albert Einstein Cancer Center, Montefiore Medical Center, Bronx NY. Abstract for the 94th Annual Meeting of the American Association for Cancer Research, Washington DC, July 2003.

Molecular mechanisms of c-myc induced sensitivity to chemotherapeutic agents in colon carcinoma cells. Diego Arango, John M. Mariadason, Andrew J. Wilson, Georgia A. Corner, Maria J. Arañes, **Courtney Nicholas**, Leonard H. Augenlicht. Albert Einstein Cancer Center, Bronx NY. Abstract for the 94th Annual Meeting of the American Association for Cancer Research, Washington DC, July 2003.

Gene Expression Profiles That Define Differentiation and Tumorigenesis in the Mouse Small Intestine. **Courtney Nicholas**, John M Mariadason, Georgia A Corner, Diego Arango, Wancai Yang, Leonard H. Augenlicht. Young Investigator's Symposium, Montefiore Medical Center, May 2, 2003.

Gene Interaction Determining Sensitivity to Oxaliplatin, a New Chemotherapeutic Agent for Colon Cancer Patients. Diego Arango, John Mariadason, Maria Arañes, **Courtney Nicholas**, Andrew Wilson, Leonard Augenlicht. Abstract for the 93rd Annual Meeting of the American Association for Cancer Research, San Francisco, CA April 2002.

Use of Gene Expression Profiling to Predict Response of Colon Cancer Cells to Chemotherapeutic Agents. J.M. Mariadason, D. Arango, A. Wilson, M. Arañes, **C. Nicholas**, L. Augenlicht. Abstract for the 93rd Annual Meeting of the American Association for Cancer Research, San Francisco, CA April 2002.

Induction of p21WAF1/cip1 by sulindac in Apc1638+/-, p21 +/+, +/-, or +/- mice assayed by quantitative real-time RT-PCR. Wancai Yang, **Courtney Nicholas**, Ioana M. Lozonschi, and Leonard H. Augenlicht. Abstract for the 93rd Annual Meeting of the American Association for Cancer Research, San Francisco, CA April 2002.

Conferences

American Association for Cancer Research 95th Annual Meeting, Orlando FL. March 27-31, 2004
American Association for Cancer Research 94th Annual Meeting, Washington DC. July 11-14, 2003
American Association for Cancer Research 93rd Annual Meeting, San Francisco CA. April 6-10, 2002

Awards

Outstanding Student Oral Presentation award. "The flavonoid apigenin inhibits the production of inflammatory cytokines by promoting the dephosphorylation of NFkB in LPS-stimulated monocytes and in vivo". First annual Medical Life Sciences/Integrated Graduate Programs Symposium. May 12, 2007. second place.

Parviz Lalezari Award for Research Excellence, Young Investigator's Symposium; Montefiore Medical Center, May 2, 2003. First Place.

Technical Experience

DNA isolation and purification

RNA isolation and purification (Qiagen, Trizol)
RNA amplification
Conventional PCR analysis
Cloning
 Restriction Digest
 Ligation
 Transformation/Transfection
 Mini/Maxi Preparation
Protein Preparation (Qiagen, IP)
Western Blotting analysis
Alkaline Phosphatase activity assay for cell
 differentiation
Isolation of histones
Histone Deacetylase assay
Tissue Culture skills
 treatment of cell lines with
 chemotherapeutic agents
 Surgical isolation of MEFs from mouse
 embryos
Cell growth assays – sulforhodamine B
Flow Cytometry and WinList analysis
Operating Room Liaison and data manager for
 clinical research involving patient samples

Animal Models

Computing Experience

Windows operating systems
MS Office Suite
STORM scanner phosphorimaging and
 ImageQuant phosphorimaging software

Mouse handling
 Husbandry and genotyping
 Colony structure and maintenance
 Drug dosing via injection and diet
 Fluid removal
 Extraction of mouse bone marrow
 Isolation of WBCs via Histopaque method
Mouse microsurgical preparation and
 techniques
Intestinal epithelial cell isolation via Weiser
 Method
Bone Marrow and WBC extraction from the
 mouse
AALAC Animal Use protocols
Histological Preparations
 Animal sacrifice (mouse)
 Paraffin embedding of fixed tissues
 H+E tissue staining
acquainted with
 microarray hybridization, GenePix, and
 analysis
 spotting of oligonucleotide slides
 reverse transcription reaction for
 quantitative RT-PCR

acquainted with:
 WinList for FACS
 SPOT imaging system
 Prism graphing program
 basic digital photography
 GenePix Microarray Analysis Software

Interesting and Bizarre Facts:

I can play three musical instruments – flute, piano, and electric bass.
In high school, I was part of a hot air balloon team.
I am certified as an open-water SCUBA diver, but currently enjoy figure skating a great deal.
If given the opportunity to travel anywhere in the world, I would choose Egypt or India.