

## Leta K. Nutt, Ph.D.

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**Citizenship:** United States

### Education:

2002 The University of Texas MD Anderson (Cancer Biology, Ph.D.)  
Thesis advisor- David McConkey, Ph.D.

1998 The University of Texas Health Science Center (Integrative Biology, M.S.)

1992 Texas A & M University (Marine Biology, B.S.)

### Postdoctoral Training:

2003–2008 Duke University School of Medicine (Laboratory of Sally Kornbluth, Ph.D.)

2002–2003 Karolinska Institutet (Laboratory of Sten Orrenius, Ph.D.)

### Academic Appointments:

2009-present Assistant Member, Department of Pathology  
St. Jude Children's Research Hospital, Memphis, TN

2010- Member, Cancer and Developmental Biology Graduate Program, UTHSC

2014- Co-Cancer and Developmental Biology Track Head, UTHSC

### Fellowships and Honors:

2015-2019 American Cancer Society Research Scholar Award

2009-2011 V Foundation V Scholar

2007–2010 Leukemia Lymphoma Special Fellow

2006 Keystone Symposia Scholarship (Metabolomics: From Bioenergetics to Apoptosis)

2005 Bell Award for Cancer Research, Duke University Medical Center

2005 AAAS/Science Program for Excellence in Science

2004 Keystone Symposia (Apoptosis in Development) Conference Assistant

2004–2007 NIH Individual NRSA F32 GM07 22R2-01

2002–2003 Karolinska Institutet Visiting Scientist Stipend

2002–2003 Wenner-Gren Foundation Fellowship for Visiting Scientists

2002 Presidents' Research Scholarship

2002 Shell Oil Foundation Scholarship for Excellence in Toxicology

2002 Andrew Sowell-Wade Huggins Endowed Scholarship

2002 UT MD Anderson Cancer Biology Retreat: First Place Best Oral Presentation  
 2000–2002 NIH Cancer Immunobiology Training Grant Research Fellow  
 CA09598 (competitive)  
 1999–2002 American Legion Auxiliary Fellow in Cancer Research (3-y grant)  
 2002 American Women in Science Scholarship  
 2000 Graduate School of Biomedical Sciences Travel Grant  
 Award (competitive)  
 1996 Travel Grant Award. Biophysical Society Meeting

**Professional Service:**

Cellular Signaling and Regulatory Systems Study Section (CSRS),  
 National Institutes of Health, *Ad hoc* member, 2014

*Ad hoc* reviewer: Molecular Cell, Journal of Cell Biology, Molecular Biology  
 of the Cell, EMBO Journal, Developmental Cell, Cell Death and Differentiation,  
 Journal of Biological Chemistry

**Teaching:**

2006 Teaching Assistant  
 Science Journalism Program, Marine Biological Laboratories, Woods Hole, MA  
  
 2001 Teaching Assistant  
 Introduction to Biochemistry, University of Texas Graduate School of Biomedical  
 Sciences, Houston, TX  
  
 2000 Lecturer in Toxicology II  
 University of Texas Graduate School of Biomedical Sciences, Houston, TX  
  
 1998 Guest Lecturer  
 Science 6303: Recent developments in biomedical science applicable to  
 secondary science teachers  
 University of Texas-Pan American, Edinburg, TX

**Courses**

April 2008 Protein Purification and Characterization  
 Cold Spring Harbor Laboratories  
  
 October 2001 Apoptosis: Mechanisms and Implications for Human Disease  
 Karolinska Institutet Nobel Conference No. 37  
  
 May 2001 Advanced Course in Mitochondrial Physiology  
 Buck Institute, Navoto, CA

## Invited Oral Presentations

- 2014 Department of Pediatrics, MD Anderson Cancer Center, Houston, TX
- 2014 Department of Biological Chemistry, Johns Hopkins University School of Medicine, Baltimore, MD
- 2014 Department of Pharmacology and Toxicology, Geisel School of Medicine at Dartmouth, Hannover, NH
- 2014 Department of Molecular Physiology and Biophysics, Vanderbilt Medical Center, Nashville, TN
- 2014 Department of Cell Biology, Memorial Sloan Kettering Cancer Center, New York, NY
- 2013 Department of Cancer Biology, USA Mitchel Cancer Center, Birmingham, AL
- 2011 Triangle Death Meeting, Duke University, Durham, NC
- 2008 Department of Physiology, Tulane Medical School, New Orleans, LA
- 2008 Department of Cancer Biology Seminar, Vanderbilt University, Nashville, TN
- 2008 Department of Biochemistry, St. Jude Children's Research Hospital, Memphis, TN
- 2008 Department of Metabolism and Aging, Scripps Institute, Jupiter, Florida
- 2008 Laboratory of Human Carcinogenesis, NCI, Bethesda, MA
- 2008 Department of Molecular and Integrative Physiology, University of Michigan, Ann Arbor, MI
- 2008 Department of Cell and Developmental Biology, UNC-Chapel Hill, NC
- 2005 Cold Spring Harbor Meeting on Cell Death, Cold Spring Harbor, NY
- 2005 Metabolism Research Forum, Sarah W. Stedman Nutrition and Metabolism Center. Duke University, Durham, NC
- 2001 Department of Cancer Biology and Pharmacology Seminar, Duke University, Durham, NC
- 2001 Department of Cancer Biology Seminar, Vanderbilt University, Nashville, TN
- 2001 Scheele Symposium, Stockholm, Sweden

- 2001 Texas Medical Center Gene Therapy Symposium, Houston, Texas
- 1998 American Heart Association Meeting, Dallas, Texas
- 1996 Biophysical Society Meeting, Baltimore, MD

## Bibliography

McCoy F, Darbandi R, **Nutt LK**. "Methods for the study of caspase activation in the *Xenopus laevis* oocyte and egg extract," *Methods Mol Biol*. 1133:119-40. 2014.

McCoy F, Darbandi R, Lee HC, Bharatham K, Moldoveanu T, Grace CR, Dodd K, Lin W, Chen SI, Tangallapally RP, Kurokawa M, Lee RE, Shelat AA, Chen T, Green DR, Harris RA, Lin SH, Fissore RA, Colbran RJ, **Nutt LK**. Metabolic activation of CaMKII by coenzyme A. *Mol Cell*. 52(3):325-39, 2013. **(FEATURED ARTICLE, evaluated by Faculty of 1000)**

McCoy F, Darbandi R, Chen S, Eckard L, Dodd K, Jones K, Baucum AJ, Gibbons JA, Lin S, Colbran RJ, **Nutt LK**. Metabolic regulation of CaMKII and caspases in *Xenopus laevis* egg extracts. *J Biol Chem*. 288(13):8838-48, 2013.

McCoy F, Eckard L, **Nutt LK**. Janus-faced PIDD: a sensor for DNA damage-induced cell death or survival? *Mol Cell*. 47(5):667-8, 2012.

Schafer ZT, **Nutt LK**. Understanding tumor cell metabolism: The secret to winning the war(burg) on cancer? *Semin Cell Dev Biol*. 23(4):351, 2012.

**Nutt LK**. The *Xenopus* oocyte: A model for studying the metabolic regulation of cancer cell death. *Semin Cell Dev Biol*. 23(4):412-8, 2012.

Yang CS, Gan E, Thomenius MJ, Gan EC, Tang W, Freel CD, Merritt TJ, **Nutt LK†**, Kornbluth S†. Metabolic regulation of *Drosophila* apoptosis through inhibitory phosphorylation of Dronc. *EMBO J*. 29(18):3196-3207, 2010 **(†Co-senior authors)**.

Andersen JL, Johnson CE, Freel CD, Parrish AB, Day JL, Buchakjian MR, **Nutt LK**, Thompson JW, Moseley MA, Kornbluth S. Restraint of apoptosis during mitosis through interdomain phosphorylation of caspase-2. *EMBO J*. 28(20):3216-27, 2009.

**Nutt LK**, Buchakjian MR, Gan E, Darbandi R, Yoon SY, Qiju Wu J, Miyamoto YJ, Gibbon JA, Andersen JL, Freel CD, Tang W, He C, Kurokawa M, Wang Y, Margolis SS, Fissore RA, Kornbluth S. Metabolic control of oocyte apoptosis mediated by 14-3-3 $\zeta$ -regulated dephosphorylation of caspase-2. *Dev Cell* 16(6):856-66, 2009. **(FEATURED ARTICLE)**

Lee YC, Block G, Chen H, Folch-Puy E, Fornjy R, Jalili R, Jendresen CB, Kimura M, Kraft E, Lindemose S, Lu J, McLain T, **Nutt L**, Ramon-Garcia S, Smith J, Spivak A, Wang ML, Zanic M,

Lin SH. One-step isolation of plasma membrane proteins using magnetic beads with immobilized concanavalin A. *Protein Expr Purif.* 62(2):223-9, 2008. (co-authors are listed in alphabetical order)

Tang W, Qiju Wu J, Guo Y, Hansen DV, Perry JA, Freel CD, **Nutt L**, Jackson PK, Kornbluth SA. Cdc2 and Mos regulate Emi2 stability to promote the meiosis I–meiosis II transition. *Mol Biol Cell* 19(8):3536-43, 2008.

Zhu W, Ukomadu C, Jha S, Senga T, Dhar SK, Wohlschlegel JA, **Nutt LK**, Kornbluth S, Dutta A. MCM10 and And-1/CTF4 recruit DNA polymerase  $\alpha$  to chromatin for initiation of DNA replication. *Genes Dev* 21(18):2288-99, 2007.

Margolis SS, Perry JA, Forester CM, **Nutt LK**, Guo Y, Jardim MJ, Thomenius MJ, Freel CD, Darbandi R, Ahn JH, Arroyo JD, Wang XF, Shenolikar S, Nairn AC, Dunphy WG, Hanh WC, Virshup DM, Kornbluth S. Role for the PP2A/B56 $\delta$  phosphatase in regulating 14-3-3 release from Cdc25 to control mitosis. *Cell* 127(4):759-73, 2006.

Walterscheid JP, Nghiem DX, Kazimi N, **Nutt LK**, McConkey DJ, Norval M, Ullrich SE. *Cis*-urocanic acid, a sunlight-induced immunosuppressive factor, activates immune suppression via the 5-HT<sub>2A</sub> receptor. *Proc Natl Acad Sci U S A* 103(46):17420-5, 2006.

**Nutt LK**, Margolis SS, Jensen M, Herman CE, Dunphy WG, Rathmell JC, Kornbluth S. Metabolic regulation of oocyte cell death through the CaMKII-mediated phosphorylation of caspase 2. *Cell* 123(1):89-103, 2005. (COVER STORY)

Bustamante J, **Nutt L**, Orrenius S, Gogvadze V. Arsenic stimulates release of cytochrome c from isolated mitochondria via induction of mitochondrial permeability transition. *Toxicol Appl Pharmacol.* 207(2 Suppl):110-6, 2005.

**Nutt LK**, Gogvadze V, Uthaisang W, Mirnikjoo B, McConkey DJ, Orrenius S. Indirect effects of Bax and Bak initiate the mitochondrial alterations that lead to cytochrome c release during arsenic trioxide-induced apoptosis. *Cancer Biol Ther* 4(4):459-67, 2005.

Casaletto JB, **Nutt LK**, Wu Q, Moore JD, Etkin LD, Jackson PK, Hunt T, Kornbluth S. Inhibition of the anaphase-promoting complex by the Xnf7 ubiquitin ligase. *J Cell Biol* 169(1):61-71, 2005.

Dare E, Tofighi R, **Nutt L**, Vettori MV, Emgard M, Mutti A, Ceccatelli S. Styrene 7,8-oxide induces mitochondrial damage and oxidative stress in neurons. *Toxicology* 201(1-3):125-32, 2004.

McConkey DJ, **Nutt L**. Measurement of changes in intracellular calcium during apoptosis. *Methods Mol Biol* 282:117-30, 2004.

Uthaisang W, **Nutt LK**, Orrenius S, Fadeel B. Phosphatidylserine exposure in Fas type I cells is mitochondria-dependent. *FEBS Lett* 545(2-3):110-4, 2003.

**Nutt LK**, Chandra J, Patear A, Roth JA, Swisher SG, O'Neil RG, McConkey DJ. Bax-mediated Ca<sup>2+</sup> mobilization promotes cytochrome c release in apoptosis. *J Biol Chem* 277(23): 20301-8, 2002.

- Nutt LK**, Patear A, Pahler J, Fang B, Roth J, McConkey DJ, Swisher SG. Bax and Bak promote apoptosis by modulating endoplasmic reticular and mitochondrial  $Ca^{2+}$  stores. *J Biol Chem* 277(11):9219-25, 2002.
- McConkey DJ, **Nutt LK**. Calcium flux measurements in apoptosis. *Methods Cell Biol* 66:229-46, 2001.
- Nutt LK**, O'Neil RG. Effect of elevated glucose on endothelin-induced, store-operated and non-store-operated calcium influx in renal mesangial cells. *J Am Soc Nephrol* 11:1225-35, 2000.
- McConkey DJ, Lin Y, **Nutt LK**, Ozel HZ, Newman RA. Cardiac glycosides stimulate  $Ca^{2+}$  increases and apoptosis in androgen-independent, metastatic human prostate adenocarcinoma cells. *Cancer Res* 60(14):3807-12, 2000.
- Tao W, Zwischenberger JB, Nguyen TT, Vertrees RA, McDaniel LB, **Nutt LK**, Herndon DN, Kramer GC. Gut mucosal ischemia during cardiopulmonary bypass results from blood flow redistribution and increased oxygen demand. *J Thorac Cardiovasc Surg* 110(3):819-28, 1995.
- McDaniel LB, Zwischenberger JB, Vertrees RA, **Nutt L**, Uchida T, Nguyen T, Kramer GC. Mixed venous oxygen saturation during cardiopulmonary bypass poorly predicts regional venous saturation. *Anesth Analg* 80(3):466-72, 1995.
- Tao W, Zwischenberger JB, Nguyen TT, Vertrees RA, **Nutt LK**, McDaniel LB, Kramer GC. Hypertonic saline/dextran for cardiopulmonary bypass reduces gut tissue water but does not improve mucosal perfusion. *J Surg Res* 57:718-25, 1994.
- Vertrees RA, Tao W, Kramer GC, **Nutt LK**, McDaniel LB, Devin SD, Jesmock G, Zwischenberger JB. Tumor necrosis factor monoclonal antibody prevents alterations in leukocyte populations during cardio-pulmonary bypass. *ASAIO J* 40(3):m554-559, 1994.