

C. NISHADI RAJAPAKSE, PhD
Office of Clinical Research
Mail Drop F106
111 T.W.Alexander Drive, Durham, NC 27709
Phone: 919-316-4531; **e-mail:** rajapak1@niehs.nih.gov

EDUCATION

Ph.D. Molecular Medicine, Wake Forest University, Winston-Salem, NC (May 2004)

B.S. Chemistry, Honors, Salem College, Winston-Salem, NC (May 1995)
Minor, Mathematics

PROFESSIONAL EXPERIENCE

5/2005-Present Post-doctoral IRTA Fellow

Office of Clinical Research, National Institutes of Environmental Health Sciences,
Research Triangle Park, NC

Advisor: Perry J Blackshear, M.D., D.Phil.

5/2004-5/2005 Post-Doctoral IRTA Fellow

Laboratory of Signal Transduction, National Institutes of Environmental Health
Sciences, Research Triangle Park, NC

Advisor: Elizabeth Murphy, Ph.D.

8/1999-3/2004 Graduate Student

Molecular Medicine, Wake Forest University School of Medicine, Winston-Salem, NC

Advisor: David W. Busija, Ph.D.

5/2001-7/2001 Clinical Rotations

Baptist Hospital, Winston-Salem, North Carolina

6/1994-8/1994 National Science Foundation Scholar

Department of Chemistry, University of Nevada-Reno, Reno, Nevada

Advisor: John H. Nelson, Ph.D.

HONORS AND AWARDS

NIH Intramural Research Training Award, NIH/NIEHS, (2004-present)

Graduate Fellowship, Wake Forest University, (1999-2004).

Mary A. Bell Award, Best Poster, NC Chapter for Society for Neuroscience (2003)

College Scholarship, Salem College, Winston-Salem, North Carolina (1991-1995)

National Science Foundation Scholarship, University of Nevada, Reno, Nevada (1994)

Honorary Fellow, Department of Chemistry, University of Wisconsin, Madison, (Jan, 1995)

RECENT COURSES AND TRAINING

Introduction to the Principles and Practice of Clinical Research, NIH Oct '05-Feb, '06
Grantsmanship Training Program, The Grantsmanship Center and Sigma Xi, Jan '06
SNP workshop: Bioinformatics and Genotyping, NIEHS Jan '06

COMMITTEES/SERVICE

National Trainees Assembly (NTA), Judge for NIEHS Science Awards Day (2004)
Downtown Middle School, Winston-Salem, NC, Judge for Science Day (2003)
International Society, Salem College, Winston-Salem, NC, Vice-President (2000-2002)
Beta Beta Beta, Salem College, Winston-Salem, NC, Treasurer (2001)

PROFESSIONAL MEMBERSHIPS

2002-Present *Member*-Society for Neuroscience

1993-1996 *Member*-American Chemical Society

PUBLICATIONS:

PEER-REVIEWED JOURNALS

1. Horiguchi T, Kis B, **Rajapakse N**, Shimizu K, Busija DW. Cortical spreading depression (CSD)-induced tolerance to transient focal cerebral ischemia in halothane anesthetized rats is affected by anesthetic level but not ATP-sensitive potassium channels. *Brain Res.* 2005 Oct 24
2. Busija DW, Katakam P, **Rajapakse NC**, Kis B, Grover G, Domoki F, Bari F. Effects of ATP-sensitive potassium channel activators diazoxide and BMS-191095 on membrane potential and reactive oxygen species production in isolated piglet mitochondria. *Brain Res Bull.* 2005 Jul 30; 66(2):85-90
3. Busija DW, Lacza Z, **Rajapakse N**, Shimizu K, Kis B, Bari F, Domoki F, Horiguchi T. Targeting mitochondrial ATP-sensitive potassium channels- a novel approach to neuroprotection. *Brain Res Rev.* 2004 Nov; 46(3):282-94
4. Nagy K, Kis B, **Rajapakse NC**, Bari F, Busija DW. Diazoxide preconditioning protects against neuronal cell death by attenuation of oxidative stress upon glutamate stimulation. *J Neurosci Res.* 2004 Jun 1;76(5):697-704.
5. Kis B, Nagy K, Snipes JA, **Rajapakse NC**, Horiguchi T, Grover GJ, Busija DW. The mitochondrial K(ATP) channel opener BMS-191095 induces neuronal preconditioning. *Neuroreport.* 2004 Feb 9;15(2):345-9
6. **Rajapakse N**, Kis B, Snipes J, Horiguchi T, Busija D: Diazoxide pretreatment induces delayed preconditioning in astrocytes against oxygen glucose deprivation and hydrogen peroxide-induced toxicity. *J Neurosci Res.* 2003 Jul 15;73(2):206-14.
7. Shimizu K, **Rajapakse N**, Horiguchi T, Payne RM, Busija DW. Neuroprotection against hypoxia-ischemia in neonatal rat brain by novel superoxide dismutase mimetics. *Neurosci Lett.* 2003 Jul 31;346(1-2):41-4.
8. Kis B, **Rajapakse N**, Snipes J, Horiguchi T, Busija D. Diazoxide induces delayed pre-conditioning in cultured rat cortical neurons. *J Neurochem.* 2003 Nov;87(4):969-80.
9. Horiguchi T, Kis B, **Rajapakse N**, Shimizu K, Busija DW. Opening of mitochondrial ATP-sensitive potassium channels is a trigger of 3-nitropropionic acid-induced tolerance to transient focal cerebral ischemia in rats. *Stroke.* 2003 Apr;34(4):1015-20. Epub 2003 Mar 20.
10. Shimizu K, **Rajapakse N**, Horiguchi T, Payne RM, Busija DW. Protective effect of a new nonpeptidyl mimetic of SOD M40401, against focal cerebral ischemia in the rat. *Brain Res.* 2003 Feb 14;963(1-2):8-14.
- 11: Veltkamp R, **Rajapakse N**, Robins G, Puskar M, Shimizu K, Busija D. Transient focal ischemia increases endothelial nitric oxide synthase in cerebral blood vessels. *Stroke.* 2002 Nov;33(11):2704-10.
- 12: Shimizu K, Lacza Z, **Rajapakse N**, Horiguchi T, Snipes J, Busija DW. MitoK(ATP) opener, diazoxide, reduces neuronal damage after middle cerebral artery occlusion in the rat. *Am J Physiol Heart Circ Physiol.* 2002 Sep;283(3):H1005-11.
- 13: **Rajapakse N**, Shimizu K, Kis B, Snipes J, Lacza Z, Busija D. Activation of mitochondrial ATP-sensitive potassium channels prevents neuronal cell death after ischemia in neonatal rats. *Neurosci Lett.* 2002 Jul 26;327(3):208-12.
- 14: Lacza Z, Puskar M, Figueroa JP, Zhang J, **Rajapakse N**, Busija DW. Mitochondrial nitric oxide synthase is constitutively active and is functionally upregulated in hypoxia. *Free Radic Biol Med.* 2001 Dec 15;31(12):1609-15.

Nishadi Rajapakse, Ph.D Curriculum vitae

- 15: **Rajapakse N**, Shimizu K, Payne M, Busija D. Isolation and characterization of intact mitochondria from neonatal rat brain. *Brain Res Brain Res Protoc*. 2001 Dec;8(3):176-83.
- 16: Degi R, Thore C, Bari F, **Thrikawala N**, Nogradi A, Robins G, Domoki F, Beasley TC, Busija DW. Ischemia increases prostaglandin H synthase-2 levels in retina and visual cortex in piglets. *Graefes Arch Clin Exp Ophthalmol*. 2001 Jan;239(1):59-65.
- 17: Domoki F, **Thrikawala N**, Robins GS, Bari F, Busija DW. Kainic acid rapidly induces cyclooxygenase (COX)-2 in piglet cerebral cortex. *Neuroreport*. 2000 Nov 9;11(16):3435-8.
- 18: Domoki F, Veltkamp R, **Thrikawala N**, Robins G, Bari F, Louis TM, Busija DW. Ischemia-reperfusion rapidly increases COX-2 expression in piglet cerebral arteries. *Am J Physiol*. 1999 Sep;277(3 Pt 2):H1207-14.
- 19: Aschner JL, Kovacs N, Perciaccante JV, Figueroa JP, **Thrikawala N**, Robins GS, Busija DW. Endothelial nitric oxide synthase gene transfer enhances dilation of newborn piglet pulmonary arteries. *Am J Physiol*. 1999 Jul;277(1 Pt 2):H371-9.
- 20: Degi R, Bari F, Thore C, Beasley T, **Thrikawala N**, Busija DW. Effect of transient ischemia on induction of cyclooxygenase isoforms in the piglet brain. *Neurobiology (Bp)*. 1998;6(4):467-8
- 21: **Thrikawala N**, Bari F, Beasley TC, Thore C, Busija DW. Effects of ischemia on prostaglandin H synthase-2 expression in piglet choroids plexus. *Prostaglandins Other Lipid Mediat*. 1998 Jun;56(2-3):77-87.
- 22: Degi R, Bari F, **Thrikawala N**, Beasley TC, Thore C, Louis TM, Busija DW. Effects of anoxic stress on prostaglandin H synthase isoforms in piglet brain. *Brain Res Dev Brain Res*. 1998 May 15;107(2):265-76.
- 23: Degi R, Bari F, Beasley TC, **Thrikawala N**, Thore C, Louis TM, Busija DW. Regional distribution of prostaglandin H synthase-2 and neuronal nitric oxide synthase in piglet brain. *Pediatr Res*. 1998 May;43(5):683-9.
- 24: Beasley TC, Bari F, Thore C, **Thrikawala N**, Louis T, Busija D. Indomethacin attenuates early increases in inducible heat shock protein 70 after cerebral ischemia/reperfusion in piglets. *Brain Res Dev Brain Res*. 1998 Jan 14;105(1):125-35.
- 25: Beasley TC, Bari F, Thore C, **Thrikawala N**, Louis T, Busija D. Cerebral ischemia/reperfusion increases endothelial nitric oxide synthase levels by an indomethacin-sensitive mechanism. *J Cereb Blood Flow Metab*. 1998 Jan;18(1):88-96.

SELECTED ABSTRACTS

Rajapakse N, Steenbergen C, Murphy E. AKT phosphorylates VDAC and GSK-3 beta inhibition results in dephosphorylation of akt and vdac in the rat heart. *Journal of Molecular and Cellular Cardiology*, 38 (5): 848-849, 2005. ([WOS abstract](#)) International Society of Heart Research Meeting, New Orleans, LA, June, 2005

C.N. Rajapakse, B. Kis, J Snipes, K. Nagy, D. Busija. Mitochondrial K_{ATP} Channel opener (mK_{ATP}) diazoxide protects cultured astrocytes against anoxia via protein kinase C and ROS-dependent mechanisms. Poster presentation, 33rd Annual Meeting of the Society for Neuroscience, New Orleans, LA, November, 2003.

Nishadi Rajapakse, David Busija. Activation of mitochondrial ATP-sensitive channels (mK_{ATP}) with diazoxide in protecting neurons against ischemic stress. Wake Forest University Graduate Student Poster Day, April 2003.

N. Rajapakse, B. Kis, J. Snipes, K. Nagy, T. Horiguchi, D. Busija. Diazoxide induces delayed preconditioning in astrocytes via a mechanism involving free radical generation and change in mitochondrial membrane potential. Poster presentation, Annual Experimental Biology Meeting, San Diego, CA, April 2003.

Rajapakse N, Kis B, Snipes J, Horiguchi T, Busija D: Diazoxide treatment inhibits cell death in astrocytes against oxygen-glucose deprivation and hydrogen peroxide-induced toxicity. Poster presentation, 32nd Annual Meeting of the Society for Neuroscience, Orlando, FL, November, 2002.

BOOK CHAPTERS

Busija, D.W., Bari, F, Degi, R., Domoki, F., Veltkamp, R., Louis, T.M., **Thrikawala, N.**, and Robins, G. Pathophysiology of COX-2 and NOS-derived metabolites and free radicals during brain ischemia. J. Krieglstein (Ed). *Pharmacology of Cerebral Ischemia*, 1998, 237-241.