

Kenneth E. Miller, Ph.D.

Professor and Chair of Anatomy & Cell Biology
Department of Anatomy & Cell Biology
College of Medicine
Oklahoma State University- Tulsa

Contact Information:

E-mail: kenneth.miller@okstate.edu

Phone: 405-744-6619

Office: 1111 West 17th St, Oklahoma State University, Tulsa, OK 74107-1898

Education:

1978: B.S., Biology, Kansas State University, KS

1984: Ph.D., Anatomy & Neurobiology, University of Vermont, VT

1987: Postdoctoral, Cell Biology & Neuroanatomy, University of Minnesota, MN

Academic Appointments:

2010-present: Chair, Dept. Anatomy & Cell Biology, Oklahoma State University, Center for Health Sciences (OUS-CHS), OK

2008-present: Professor, Dept. Anatomy & Cell Biology, OSU-CHS, OK

2002-2008: Associate Professor, Dept. Anatomy & Cell Biology, OSU-CHS, OK

1998-2002: Assistant Professor, Dept. Cell Biology, Univ. Oklahoma, OK

1990-1998: Assistant Professor, Dept. Anat. Sci., Univ. Oklahoma, OK

1990-1990: Group Leader, Analgesia Program, G.D. Searle & Co. R&D, IL

1988-1990: Research Scientist, Neurotrophic Factors Program, G.D. Searle R&D, Monsanto Co., MO

1987-1988: Res. Asst. Prof., Dept. Neurol. Surgery, Miami Project to Cure Paralysis, Univ. Miami, FL

Honors and Awards:

2007: Oklahoma State University Regents' Award for Outstanding Research

2006-2007: Outstanding Teacher, Spring Semester, OSU 1st Year Medical Class

2001-2002: Univ. Oklahoma HSC Aesculapian Award Outstanding Teacher, Basic Science

2000: University Oklahoma Regents' Award for Superior Teaching

Other Professional Experiences and Memberships:

2011-present: Am. Assoc. Anatomists; Association for Ocular Pharmacology & Therapeutics memberships

2010-present: Association for Research in Vision and Ophthalmology membership

1988-present: International Association for the Study of Pain membership

1982-present: Society for Neuroscience; International Brain Research Organization memberships

2010-present: Oklahoma State Anatomical Board (Legislative appointment)

2008-2010: Organizer and President, Tulsa Chapter, Society for Neuroscience

2003-present: Executive Committee, Oklahoma Center for Neuroscience

2005-2010: Advisory Board: Stimulating Enthusiasm, Exploration and Discovery through Biotechnology Education (SEEDBE), Tulsa Community College

1998: Experimental Biology Meeting Symposium organizer, "Glutamine and Glutamate Metabolism: Organ Specific Regulation"

1995-1998: Education Committee, Society for Neuroscience
1993-present: NIH Grant Review Consultant (NIAMS/NIDA/ADAMHA)
1992-present: Guest reviewer: Brain Research; Neuroscience Lett.; Experimental Neurology; Life Sciences; Neuroscience: Anesthesia and Analgesia; Journal of Neuroscience Research; PLoS Computational Biology; Current Medicinal Chemistry; Journal of Neuroscience Methods
1991-1993: President, Oklahoma Chapter, Society for Neuroscience

Research Support:

Current:

Past:

- 2013-2014: OSU Planning Grant for Establishing an Interdisciplinary Program; "Interdisciplinary Program in Regenerative Medicine. Dates of support", Role: Co-I, Awarded: \$34,900
- 2013-2014: Oklahoma State University Center for Health Sciences Intramural Grant, "Role of GDNF in primary sensory neurons during inflammation.", Role: PI, Awarded: \$12,000
- 2004-2010: Oklahoma State University; 30% commitment, "Glutamate in peripheral afferents after inflammation.", Role: PI, Awarded: \$60,000
- 2012-2013: NIH, "DON, NSC 7365: a novel analgesic", Role: PI, Awarded: \$200,000
- 2012-2013: Oklahoma State University Center for Health Sciences Intramural Grant, "Lissauer's tract: role in spinal facilitation.", Role: PI, Awarded: \$10,000
- 2012-2013: nanoScience Engineering Corporation, "Characterization of Skin", Role: PI, Awarded: \$105,000

Selected Publications:

1. Qin, C., M.J. Chandler, K.E. Miller, and R.D. Foreman, Chemical activation of cardiac receptors affects activity of superficial and deeper T3-T4 spinal neurons in rats. *Brain Res.* 959:77-85, 2003.
2. Qin, C., M.J. Chandler, K.E. Miller, R.D. Foreman, Responses and afferent pathways of C(1)-C(2) spinal neurons to gastric distension in rats. *Autonomic Neurosci.*, 104:128-36, 2003.
3. Komori, N., J. Neal, S.D. Cain, J. Logan, C. Wirsig, and K.E. Miller, Presence of beta-arrestin-1 immunoreactivity in the cutaneous nerve fibers of rat glabrous skin. *Brain Res.* 988:121-129, 2003.
4. Schechter, R., D. Beju, and K.E. Miller, The Effect of Insulin Deficiency in Tau and Neurofilament in the Insulin Knockout Mouse. *Biochem. Biophys. Res. Comm.* 334:979-986, 2005.
5. Foster, S.B., H. Tang, K.E. Miller, and G. Dryhurst, Increased Extracellular Glutamate Evoked by 1-Methyl-4-Phenylpyridinium (MPP+) in the Rat Striatum is Not Essential For Dopaminergic Neurotoxicity and Is Not Derived From Released Glutathione. *Neurotoxicity Res.* 7:251-263, 2005.
6. Qin, C., J.P. Farber, K.E. Miller, and R.D. Foreman, Responses of thoracic spinal neurons to activation and desensitization of cardiac TRPV1-containing afferents in rats. *Am J Physiol Regul Integr Comp Physiol.* 291:R1700-R1707, 2006.
7. Ghosh, C., M. Storey-Workley, S. Usip, J. Hafemeister, K.E. Miller, and R.E. Papka, Glutamate and metabotropic glutamate receptors associated with innervation of the uterine cervix during pregnancy: receptor antagonism inhibits c-Fos expression in rat lumbosacral spinal cord at parturition. *J. Neurosci. Res.* 85(6):1318-35, 2007.
8. Hoffman, E.M., R. Schechter, K.E. Miller, Fixative composition alters distributions of immunoreactivity for glutaminase and two markers of nociceptive neurons, Nav1.8 and TRPV1, in the rat dorsal root ganglion. *J. Histochem. Cytochem.* 58(4):329-44, 2010. PMID:20026672.
9. Hoffman, E.M., R. Schechter, K.E. Miller, Peripheral inhibition of glutaminase reduces carrageenan-induced Fos expression in the superficial dorsal horn of the rat. *Neuroscience Lett.* 472(3):157-160, 2010. PMID: 20132864.
10. Miller K.E., E.M. Hoffman, M. Sutharshan, R. Schechter, Glutamate pharmacology and metabolism in peripheral primary afferents: physiological and pathophysiological mechanisms. *Pharmacology & Therapeutics* 130(3):283-309, 2011. PMID:21276816.
11. Hoffman, E.M., Z. Zhang, M.B. Anderson, K.M. Edwards, R. Schechter, and K.E. Miller, Potential mechanisms for hypoalgesia induced by anti-nerve growth factor immunoglobulin are identified using autoimmune nerve growth factor deprivation. *Neuroscience* 193:452-65, 2011. PMID: 21802499.

12. Miller K.E., J. Balbás, R.L. Benton, T.S. Lam, K.M. Edwards, R.M. Kriebel, and R. Schechter, Glutaminase immunoreactivity and enzyme activity is increased in the rat dorsal root ganglion following inflammation. Special issue: Primary Afferent Nociceptor as a Target for the Relief of Pain. *Pain Research and Treatment* 2012:414697, 2012; PMID: 22229088.
13. Hoffman, E.M., Z. Zhang, K.M. Edwards, R. Schechter, and K.E. Miller, Glutaminase immunoreactivity changes in rat dorsal root ganglion during unilateral adjuvant-induced arthritis. *Journal of Chemical Neuroanatomy*, (in revision), 2013.
14. Ibitokun, B.O., M.B. Anderson, R. Schechter, and K.E. Miller, Synaptic proteins and vesicular glutamate transporters in the rat cornea. *Investigative Ophthalmology & Visual Science*, (submitted), 2013.
15. Wang, T., K.E. Miller, Characterization of glutamatergic neurons in the rat atrial intrinsic cardiac ganglia that project to the cardiac ventricular wall. *Neuroscience*, (submitted), 2013.