

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.
Follow the sample format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME		POSITION TITLE	
Igor Spigelman		Associate Professor	
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Toronto, Toronto	B.Sc.	1983	Biology
University of British Columbia, Vancouver	M.Sc.	1986	Neuroscience
University of British Columbia, Vancouver	Ph.D.	1988	Pharmacology
Toronto Hospital and University of Toronto	Postdoc	1988-1991	Neuropharmacology

EMPLOYMENT

1991-1998 Assistant Professor - Section of Oral Biology, School of Dentistry, UCLA.
1998-present Associate Professor - Division of Oral Biology & Medicine, UCLA School of Dentistry.

HONORS and AWARDS

- 1) Faculty of Medicine - Summer Graduate Studentship, The University of British Columbia, 1986.
- 2) Canadian Federation of Biological Sciences - CSPCA Animal Alternatives Award, Guelph, 1986.
- 3) Health Sciences Research Award for Neuroscience - The University of British Columbia, 1986.
- 4) Canadian Heart Foundation Studentship, June 1986 - June 1988.
- 5) British Columbia Post-secondary Scholarship, August 1987.
- 6) Ontario Mental Health Postdoctoral Fellowship, June 1988 - May 1991.
- 7) UCLA Academic Senate Research Award, June 1991 - May 1993.
- 8) UCLA Dental Research Institute Opportunity Funding Award, 1997-1998.
- 9) American Heart Association John Alexander MD Grant-in-Aid Award, May 1998.

Selected Peer-Reviewed Publications

- 19) **Spigelman, I.**, Tymianski, M., Wallace, M.C., Carlen, P.L. and Velumian, A.A. Modulation of hippocampal synaptic transmission by low concentrations of cell-permeant Ca²⁺ chelators: effects of Ca²⁺ affinity, chelator structure, and binding kinetics. Neuroscience, 75: 559-572, 1996.
- 20) Wasterlain, C.G., Shirasaka, Y., Thompson, K., Mazarati, A. and **Spigelman, I.** Chronic epilepsy with damage restricted to the hippocampus: possible mechanisms, Epilepsy Research, 26:255-265, 1996.
- 21) **Spigelman, I.**, Yan, X-X., Obenaus, A., Lee, E. Y-S., Wasterlain, C. G. and Ribak, C. E. Dentate granule cells form novel basal dendrites in a rat model of temporal lobe epilepsy, Neuroscience, 86: 109-120, 1998.
- 22) **Spigelman, I.**, Obenaus, A., Mazarati, A. and Wasterlain, C.G. Intravenously administered cell-permeant Ca²⁺ buffer decreases evoked synaptic potentials in the rat dentate gyrus *in vivo*, Brain Research, 810: 269-273, 1998.
- 23) Kang, M., **Spigelman, I.** and Olsen, R.W. Alteration in the sensitivity of GABA_A receptors to allosteric modulatory drugs in rat hippocampus following chronic intermittent ethanol treatment, Alcoholism: Clinical and Experimental Research, 22: 2165-2173, 1998.
- 24) Mihalek, R.M, Banerjee, P.K., Korpi, E.R, Quinlan, J.J., Firestone, L.L., Mi, Z.P., Lagenaur, C., Tretter, V., Sieghart, W., Anagnostaras, S.G., Sage, J.R., Fanselow, M.S., Guidotti, A., **Spigelman, I.**, Li, Z.,

- DeLorey, T.M., Olsen, R.W., Homanics, G.E. Attenuated sensitivity to neuroactive steroids in GABA_A receptor delta subunit knockout mice. Proceedings of the National Academy of Sciences USA, 96: 12905-12910, 1999.
- 25) Szucs, P., Polgar, E., **Spigelman, I.**, Porszasz, R. and Nagy, I. Neurokinin-1 receptor expression in dorsal root ganglion neurons of young rats, J. Peripheral Nervous System, 4: 270-278, 1999.
- 26) Neubert, J. K., Maidment, N.T., Matsuka, Y., Adelson, D., Kruger, L. and **Spigelman, I.** Inflammation-induced changes in primary afferent-evoked release of substance P within trigeminal ganglia in vivo. Brain Research, 871: 181-191, 2000.
- 27) Ribak, C. E., Tran, P. H., **Spigelman, I.**, Okazaki, M. M. and Nadler, J. V. Status epilepticus-induced basal dendrites on rodent granule cells contribute to recurrent excitatory circuitry. Journal of Comparative Neurology, 428: 240-253, 2000.
- 28) Yan, X-X., **Spigelman, I.**, Tran, P. H., and Ribak, C.E. Atypical features of rat dentate granule cells: recurrent basal dendrites and apical axons. Anatomy and Embryology, 203:203-209, 2001.
- 29) Matsuka, Y., Neubert, J. K., Maidment, N.T. and **Spigelman, I.** Concurrent release of ATP and substance P within guinea pig trigeminal ganglia *in vivo*, Brain Research, 915: 248-255, 2001.
- 30) **Spigelman, I.**, Li, Z., Banerjee, P.K., Mihalek, R. M., Homanics, G. E. and Olsen, R. W. Behavior and physiology of mice lacking the GABA_A receptor δ subunit, Epilepsia, 43 (Suppl. 5): 3-8, 2002.
- 31) Neubert, J. K., Maidment, N.T., Matsuka, Y., and **Spigelman, I.** Microdialysis in trigeminal ganglia, Brain Research Methods 10: 102-108, 2002.
- 32) Cagetti, E. Liang, J. **Spigelman, I.** and Olsen, R.W. Withdrawal from chronic intermittent ethanol treatment changes subunit composition, reduces synaptic function and decreases behavioral responses to positive allosteric modulators of GABA_A receptors, Molecular Pharmacology, 63: 53-64, 2003.
- 33) Marvizón, J. C. G., Wang, X., Matsuka, Y., Song, B., Neubert, J. K. and **Spigelman, I.** Relationship between capsaicin-evoked substance P release and NK1 receptor internalization in the rat dorsal horn, Neuroscience 118: 535 – 545, 2003.
- 34) **Spigelman, I.**, Li, Z., Liang, J., Cagetti, E., Mihalek, R. M., Homanics, G. E. and Olsen, R. W. Reduced inhibition and sensitivity to neurosteroids in hippocampus of mice lacking the GABA_A receptor δ subunit, Journal of Neurophysiology, 90: 903-910, 2003.
- 35) Dashtipour, K., Wong, A. M., Obenaus, A., **Spigelman, I.** and C. E. Ribak, Temporal profile of basal dendrite formation after status epilepticus Epilepsy Research, 54: 141-51, 2003.
- 36) Matsuka Y. and **Spigelman, I.** Hyperosmolar solutions selectively block action potentials in rat myelinated sensory fibers: implications for diabetic neuropathy. Journal of Neurophysiology, 91: 48-56, 2004.

BOOK CHAPTERS

- 1) Carlen, P. L., Davies, M. F., Rougier-Naquet, I., Reynolds, J. N. and **Spigelman, I.** Sedative drug withdrawal seizures: cellular electrophysiological mechanisms, In: Generalized Epilepsy: Neurobiological approaches, M. Avoli, P. Gloor, G. Kostopoulos and R. Naquet editors., Birkhauser Boston Inc., pp. 460-470, 1990.
- 2) **Spigelman, I.** and Puil, E. Substance P actions on sensory neurons. In: Substance P and Related Peptides: Cellular and Molecular Physiology, S. E. Leeman, J. E. Krause and F. Lembeck editors, Annals of the New York Academy of Sciences, Vol. 632, pp. 220-228, 1991.
- 3) Chiappelli, F., Abanmy, A., Hodgson, D., Mazey, K. A., Messadi, D. V., Mito, R. S., Nishimura, I., **Spigelman, I.** Clinical, experimental and translational psychoneuroimmunology research models in oral biology and medicine. In: Psychoneuroimmunology III, R. Ader, D. L. Felten and N. Cohen editors, Vol 2, pp. 645-670, Academic Press, 2001.
- 4) **Spigelman, I.**, Neubert, J. K., Matsuka, Y. and Maidment, N. T. Extracellular Sampling In: Methods in Pain Research, L. Kruger editor, CRC Press, Chapter 7, pp. 133-146, 2001.
- 5) **Spigelman, I.**, Gold, M. S. and Light A. R. Electrophysiological Methods in Pain Research. In: Methods in Pain Research, L. Kruger editor, CRC Press, Chapter 8, 147-168, 2001.

- Principal Investigator/Program Director (Last, first, middle): _____
- 6) **Spigelman, I.** GABAergic Inhibition in Status Epilepticus. In: Status Epilepticus, Mechanisms and Management, C.G. Wasterlain editor, MIT Press, 2003, (in press).

OTHER SUPPORT

- 1164-GII 07/01/98 - 06/31/01
American Heart Association
Neuroprotective Calcium Buffers in Cerebral Ischemia The objectives are to investigate the electrophysiology and therapeutic efficacy of a new class of neuroprotective agents in experimental stroke.
Role: PI
- R01 AA07680-07 (PI - Richard W. Olsen) 05/01/02 - 04/30/07
National Institutes of Health
GABA receptor complex in Alcohol Dependence The objectives are to determine whether persistent alterations in the GABA_A receptor complex can provide a molecular explanation for the development of physical dependence on ethanol in an animal model of alcoholism.
Role: co-investigator
- F98-34 01/01/99 - 12/31/02
Whitehall Foundation
Mechanisms of signal gating within sensory ganglia The long-term objective is to provide an in-depth understanding of the ganglionic processing of sensory signals destined to arrive at central synapses.
Role: PI
- R01 NS38331 (PI - Charles E. Ribak) 07/01/99 - 06/30/04
National Institutes of Health
Seizure-induced basal dendrites on dentate granule cells The objectives are to determine whether formation of basal dendrites on granule cells contributes to the persistent hyperexcitability of this region in a model of temporal lobe epilepsy.
Role: co-investigator
- R01 DA12609 (P.I. Juan Carlos Marvizón) 10/01/00 - 09/30/05
NIH
Spinal Neurokinin and Opioid Release in Nociception The overall goal is to understand the mechanisms that control the release of NKs and endogenous opioid peptides in the dorsal horn.
Role: collaborator
- K08 DE14573 (PI - Yoshizo Matsuka) 04/01/02 - 03/31/06
NIDCR
Physiology of ATP Release in Chronic Pain States The overall goal of this proposal is to directly test the hypothesis that ATP is the chemical mediator of cross-depolarization between neurons in sensory ganglia and to determine how release of ATP and cross-depolarization change in pathological pain states.
Role: primary mentor of PI
- NASA NSCOR (Program Project Director – Gregory Nelson) 01/01/04 – 12/31/08
Progressive Alterations of Central Nervous System Structure and Function Are Caused by Charged Particle Radiation,
The overall goals of the project are to evaluate the structural and functional alterations in the brain from charged particle radiation in order to assess the risk to astronauts from prolonged space missions.
Role: co-investigator