

January, 2007

CURRICULUM VITAE

NAME: Helmut B. Gottlieb
CITIZENSHIP: Brazil
VISA STATUS: Permanent Resident (Green Card)

BUSINESS ADDRESS: The University of Texas Health Science Center at San Antonio, Department of Surgery/ Trauma
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ACADEMIC BACKGROUND:

Postdoctoral Fellow: Aug. 2004-Present.
Department of Pharmacology, Graduate School of Biomedical Sciences, University of Texas Health Science Center, San Antonio, TX.

Supervisor: J. Thomas Cunningham, Associate Professor of Pharmacology.

Graduate Work: Aug. 1999-Aug. 2004
Ph.D. Degree, Department of Pharmacology & Experimental Therapeutics, School of Graduate Studies, Louisiana State University Health Sciences Center, New Orleans, LA.

Dissertation Title: Water Diuretic Properties of Kappa Opioids: CNS Sites, Mechanisms, and Functions.

Supervisor: Daniel R Kapusta, Professor of Pharmacology.

Undergraduate Work: Jun. 1994-Dec. 1998
B.S. Degree, Department of Biology, Texas A&M University-Kingsville, Kingsville, TX.
Major: Biology/Minor: Chemistry

Honors: Cum Laude

Major Adviser: Glenn Perrigo, Associate Professor of Biology, Department Chair.

TEACHING AND WORK EXPERIENCE:

- **Portuguese/ English Translator**, Dept. of Agriculture, Texas A&M-Kingsville University, 1994.
- **Teacher's Assistant/ Lab. Instructor**, Dept. of Chemistry, Texas A&M-Kingsville University, 1996 -1998. Supervisor: Dr. Nicholas Beller
- **Teacher's Assistant/ Lab. Instructor**, Dept. of Physics, Texas A&M-Kingsville University, 1996 -1998. Supervisor: Dr. Daniel Suson
- **Pharmacy Technician**, Christus Spohn Hospital-Alice, Alice, Texas, June- August 1999. Supervisor: Sylvia Guterrez.
- **Nursing Pharmacology/ Lecturer**, Dept. of Pharmacology and Experimental Therapeutics, LSUHSC-New Orleans, Fall 2003: Lecture on drugs affecting lipids. Course Director: Dr. Peter Winsauer.
- **Nursing Pharmacology/ Lecturer**, Dept. of Pharmacology and Experimental Therapeutics, LSUHSC-New Orleans, Spring 2004: Lecture on drugs affecting lipids. Course Director: Dr. Peter Winsauer.
- **Postdoctoral Fellow**, Dept. of Pharmacology, UTHSC-San Antonio. Summer 2004-Present. Supervisor: JT Cunningham.

AWARDS and HONORS:

- Biology Department Scholarship, Texas A&M University-Kingsville, 1995
- Dean's List, spring 1997
- Biology Department Scholarship, Texas A&M University-Kingsville, 1997
- Dean's List, fall 1997
- UTHSCSA Undergraduate Summer Program-MCAT Exam Preparation, 1997
- Honor Roll, spring 1998

- Biology Department Scholarship, Texas A&M University-Kingsville, 1998

AREAS OF SPECIAL TRAINING:

- Cardiovascular and Renal Pharmacology
- Central Nervous System Pharmacology

PAST AREA OF RESEARCH:

- Louisiana State Health Sciences Center, Aug. 1999-Aug. 2004: Graduate Research Assistant.

- Project Title: Neurochemistry of Vagal Preganglionic Neurons Innervating the Gastric Fundus in Normal and (nNOS) Knock-out Mice.
 - Specific Aim: To test the hypothesis that nNOS activity in the Dorsal Motor Nucleus of the Vagus would be induced by selective denervation of the stomach vagal motor neurons and to determine if the receptor-mediated gastric relaxation is impaired in knock-out mice as compared to control mice.

Supervisor: Dr. P.J. Hornby.

- Project Title: The Participation of Endogenous Central Kappa Opioid Systems in the Regulation of Renal Function
 - Specific Aim: To determine the role and mechanisms of endogenous kappa opioid peptides in mediating the cardiovascular and renal response to hypotonic saline volume expansion in conscious rats.

Supervisor: Daniel R Kapusta.

- Project Title: Activation of Kappa Opioid and ORL1 Receptor Pathways in Selective CNS Regions Produce Different Effects on Cardiovascular and Renal Function.
 - Specific Aim 1: To determine the cardiovascular and renal responses produced by the microinjection of U-50488H and nociceptin, a kappa opioid receptor agonist and an ORL1 receptor agonist respectively, into the paraventricular

nucleus of the Hypothalamus (PVN), the rostral ventrolateral medulla (RVLM) and the anteroventral third ventricular (AV3V) region in ketamine/xylazine-anesthetized rats.

- Specific Aim 2: To determine the cardiovascular responses produced by the microinjection of U-50448H into the parvocellular regions of the PVN in sinoaortic denervated (SAD) rats.

Supervisor: Daniel R Kapusta.

- Project Title: Effective Infectivity and Transgene Expression Using Advanced Lentiviral Vectors in Rat Kidney Cells *In Vitro* and *In Vivo*.
 - To deliver different lentiviral vector constructs (PGK promoter expressing lacZ and PGK promoter expressing EPO-Therapeutic gene) into the kidney via a conscious renal artery injection approach.

Supervisor: Frank Park and Daniel R Kapusta.

PRINCIPAL AREAS OF CURRENT RESEARCH:

- To investigate the central sites, neuronal-humoral mechanisms, and neuronal-pathways by which kappa opioids and Nociceptin receptors control cardiovascular and renal function via: (1) determining via cFos and ICER immunocytochemistry, and retrograde tract tracing the forebrain and hindbrain regions involved in the diuretic, antinatriuretic and renal sympathetic nerve effects produced by the activation of central kappa opioid and Nociceptin systems, (2) determining via excitotoxin lesion the role of the parvocellular neurons of the PVN in the sympathoexcitatory responses produced by kappa opioids, (3) examining via *in vivo* electrophysiology the effects of central kappa opioids and Nociceptin on neurons in the supraoptic and paraventricular nuclei of the hypothalamus.

Supervisor: J Thomas Cunningham.

PUBLICATIONS:

I. Peer-Reviewed Publications

1. Gottlieb HB, Varner KJ, Cabral AM and Kapusta DR. Differential cardiovascular and renal responses produced by microinjection of the kappa opioid, U-50488H, into subregions of the paraventricular hypothalamic nucleus. *J. Pharmacol. Exp. Ther.* 312: 678-685, 2005.
2. Kapusta DR, Burmeister M, Calo G, Guerrini R, Gottlieb HB and Kenigs VA. Functional selectivity of nociceptin/orphanin FQ peptide receptor partial agonists on cardiovascular and renal function. *J. Pharmacol. Exp. Ther.* 314:643-651, 2005.
3. Gottlieb HB and Kapusta DR. Endogenous central kappa opioid systems augment renal sympathetic nerve activity to maximally retain urinary sodium during hypotonic saline volume expansion. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 289(5):R1289-1296, 2005.
4. Gottlieb HB, Ji LL, Jones H, Penny ML, Fleming T, and Cunningham JT. Differential effects of water and saline intake on water deprivation induced c-Fos staining in the rat. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 291(1): R46-R52, 2006.
5. Ji LL, Gottlieb HB, Penny ML, Fleming T, Toney GM, and Cunningham JT. Differential effects of water deprivation and rehydration on Fos and FosB/DeltaFosB staining in the rat brainstem. *Exp. Neurol.* 2006, *In Press*.

II. Abstracts

1. Gottlieb HB and Kapusta DR. Endogenous central kappa opioid systems contribute to sodium retention during hypotonic saline volume expansion in conscious rats. *FASEB J*, **A1143**, Orlando, Florida, April 3-8, 2001.
2. Kapusta DR, Burmeister M, Calo G, Guerrini R, Gottlieb HB and Kenigs VA. Differential cardiovascular and renal responses produced by the central versus peripheral administration of NOP receptor partial agonists. Presented at the VIII international meeting on 'Nociceptin/Orphanin FQ and its receptor', Camerino, Italy, Sept. 14-16, 2003.
3. Gottlieb HB, Varner K, Cabral AM and Kapusta DR. Differential cardiovascular and renal responses produced by the microinjection of a kappa opioid into subregions of the paraventricular hypothalamic nucleus (PVN) in ketamine/xylazine-anesthetized rats. *J Am Soc Nephrol*, **141A**, San Diego, California. November 12 -17, 2003.
4. Gottlieb HB, Fleming T, Ji LL and Cunningham JT. The renal effects and forebrain cFos activation produced by microinjection of a kappa opioid

- agonist, U-50488H, into the lateral ventricle of conscious rats. *FASEB J*, **A212**, San Diego, California, April 2-6, 2005.
5. Ji LL, Fleming T, Penny ML, Gottlieb HB and Cunningham JT. The effects of water deprivation and rehydration on cFos staining in the supraoptic nucleus and perinuclear zone. *FASEB J*, **A165**, San Diego, California, April 2-6, 2005.
 6. Haque M, Gottlieb HB, Kapusta DR and Francis J. Cardiac sympathetic afferent stimulation increases cytokine expression in the hypothalamus of normal rats. *FASEB J*, **A224**, San Diego, California, April 2-6, 2005.
 7. Gottlieb HB, Fleming T, Penny M, Ji LL and Cunningham JT. The effects of water deprivation and rehydration with water or saline on c-Fos staining and plasma vasopressin in male rats. *APS Conference*, Steamboat Springs, Colorado, Jul 16-20, 2005.
 8. Jones HG, Cunningham JT, Gottlieb HB, Ji LL, Fleming T, and Penny M. Expression of cFos and ICER within the supraoptic nucleus. *FASEB J*, **A28**, San Francisco, California, April 1-5, 2006.
 9. Garza JC, Martinez MA, Gottlieb HB, and Cunningham JT. Co-localization of FosB and cFos in the supraoptic nucleus of dehydrated male rats. *FASEB J*, **C598**, San Francisco, California, April 1-5, 2006.
 10. Gottlieb HB, Fleming T, and Cunningham JT. Central nociceptin/Orphanin (N/OFQ) increases inducible cAMP element repressor (ICER) expression in the rat forebrain. *FASEB J*, **C473**, San Francisco, California, April 1-5, 2006.
 11. Gottlieb HB, Penny ML, Ji LL, and Cunningham JT. Intracerebroventricular (ICV) microinjection of a selective kappa opioid agonist increases inducible cAMP element repressor (ICER) expression in the supraoptic nucleus of conscious rats. *FASEB J*, **C480**, San Francisco, California, April 1-5, 2006.
 12. Gottlieb HB, Ji LL, Martinez MA, and Cunningham JT. ICER and c-Fos expression in the hindbrain following central administration of Nociceptin. *International Congress of Neuroendocrinology*. **P171**, Pittsburg, Pennsylvania, Jun 19-22, 2006.
 13. Cunningham JT, Ji LL, Penny ML, Martinez MA, and Gottlieb HB. Role of the central nervous system in chronic increases in vasopressin associated with cirrhosis. *International Congress of Neuroendocrinology*. **P123**, Pittsburg, Pennsylvania, Jun 19-22, 2006.

III. Manuscript Submitted or in Preparation

1. Bajwa A, Gottlieb HB, Kapusta DR and Park F. Effective infectivity and transgene expression using advanced lentiviral vectors in rat kidneys *in vitro* and *in vivo*. *In Preparation*.
2. Gottlieb HB, Martinez MA, Ji L, Cunningham JT. Intracerebroventricular (ICV) microinjection of a selective kappa opioid agonist increases inducible cAMP element repressor (ICER) expression in the supraoptic nucleus of conscious rats. *In preparation*.
3. Gottlieb HB, Fleming T, Cunningham JT. Identification of CNS sites involved in the water diuresis response elicited by central microinjection of nociceptin/orphanin FQ in conscious rats via c-Fos and ICER immunocytochemistry. *Submitted*.

GRANTS:

- Ruth L Kirschstein National Research Service Award-Postdoctoral Fellowship. Role of CNS in Kappa Opioid Diuresis and Antinatriuresis. *Under Review*.

SOCIETY MEMBERSHIP:

- Member of Life Science Club, Texas A&M University-Kingsville, 1997
- Member of American chemical society, Texas A&M University-Kingsville, 1996-1997
- Member of the American Physiological Society (APS), 2005-Present.

ADDITIONAL SKILLS:

- Fluent in Portuguese (1st language) and Spanish
- Computer skills

COMMUNITY SERVICE:

- Alice Physicians & Surgeons Hospital, Aug. 29, 1995 (six weeks).

REFERENCES:

- Dr. J Thomas Cunningham, Ph.D., Associate Professor of Pharmacology
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 - Department of Pharmacology and Experimental Therapeutics
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New Orleans, LA 70112
Office Phone: (504) 568-4740
Fax: (504) 568-2361

- Dr. Kurt Varner, Ph.D., Professor of Pharmacology, Interim Head of Pharmacology.
 - Department of Pharmacology and Experimental Therapeutics
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