CURRICULUM VITAE Dr. Ioannis Dragatsis June 2006

Address

Work	:	The University of Tennessee
		Health Science Center
		Department of Physiology
		894 Union Avenue, rm 502
		Memphis, TN 38163
		Tel. (901) 448-3615
		Fax. (901) 448-7126
		Email. <u>idrag@physio1.utmem.edu</u>
		Email. idragatsis@utmem.edu

A. Education

1982 – 1989	:	Bachelor degree in Pharmaceutical Sciences. University of Athens, Greece (Degree with Honours).			
1987 – 1989	:	Training and Licence in Pharmacy (15 months).			
Nov. 1989 – Mar. 1993	:	Accepted after examinations as a graduate student at the Inst. of Biology N.C.S.R. "Demokritos". Work on a Ph.D. Thesis on "Effects of opioids on the release of the Gonadotropin-Releasing Hormone (GnRH) from the hypothalamus and Luteinizing Hormone (LH) from the pituitary of male rats".			
Apr. 1993 – Oct. 1994 Mandatory military service at the Greek Army	:	Auditor of military pharmaceutical expenses for 9 months and Quality Control Assurance analyst for the Greek Military Pharmaceutical Laboratories for 10 months.			
Nov. 1994 – June 1995	:	Continue graduate studies at the Inst. of Biolog N.C.S.R. "Demokritos".			
June 1995	:	Ph.D. degree with Honours from the Department of Biology, University of Athens, Greece.			
June 1995 – Aug. 1995	:	Inst. of Biology, N.C.S.R. "Demokritos". Work on			

the effects of synthetic peptides from the primary sequence of the delta-opioid receptor on agonist binding and signal transduction.

Sept. 1995 – Aug.1999	:	Postdoctoral Research Scientist Department of Genetics and Development, Columbia University, College of Physicians and Surgeons,		
		Work on the development of mouse models for Huntington's Disease.		
Sept. 1999 – Jan. 2002	:	Associate Research Scientist Department of Genetics and Development, Columbia University, College of Physicians and Surgeons, Work on the development of mouse models for Huntington's Disease.		
Jan. 2002 – to present	:	Assistant Professor Department of Physiology The University of Tennessee		

B. Fellowships

Greek National Scholarship Foundation for excellent academic progress
Fellowship of N.C.S.R. "Demokritos"
Fellowship of N.C.S.R. "Demokritos".

Health Science Center

C. Administrative and Managerial Positions

2002 – to present	:	Member of the IACUC Committee at the
		University of Tennessee
2002 – to present	:	Manager/Director for the Transgenic/chimeric
		mouse Facility at The University of Tennessee
		Health Science Center
2002 – to present	:	Member of Neuroscience Institute at The
-		University of Tennessee Health Science Center

2003 – to present : Member of Graduate Faculty at UTHSC approved to direct theses and dissertations

D. Languages

English Greek French

E. Scientific Societies Memberships

1990 – to present	:	Hellenic Pharmaceutical Association
1994 – to present	:	Hellenic Biochemical and Biophysical Society
2006 – to present	:	Society for Neuroscience

F. Other skills

Computer	:	MS	DOS,	Windows,	word	processing,	Basic,
		mole	ecule de	sign (alcher	ny), Si	gma plot.	

G. Mentorship

Summer Research Scholar

Benji Hassid (Stanford University)

Summer McNair Scholar

Lawrence Muruako (The University of Mississippi, 2006)

Thesis committee member

Bradford Blunt (supervisor: Dr. P. Hofmann).

Graduate student

Jun. 2002- Nov. 2005 : Shuyu E

Postdoctoral Fellows

Jan. 2002 – Sep. 2005	:	Junming Yue, PhD
Feb. 2002 - to present	:	Paula Dietrich, PhD

H. Manuscript/grant review

Invited reviewer for: *Biological Psychiatry, Neurobiology of Disease* External grant reviewer for: *the Italian Telethon Foundation* Reviewer for HDF grant progress reports

I. Teaching

System Biology Course: Four and a half lecture hours on Renal physiology and function

Molecular Sciences 929, The tools of Molecular Biomedical Research (MSCI 929): One and a half lecture hours on *Transgenic Technology*.

Cellular and Molecular Biology (IP 843): One and a half hours on Eukaryotic gene regulation (Transgenesis)

Experimental Neurogenetics of the mouse (NIMH-supported Workshop): One and a half lecture hours and three and a half hands-on training hours on *Making transgenic/knockout mice, Specialized gene perturbation strategies (Cre-loxP System).*

J. Original Publications

Gerozissis K., **Dragatsis I.** and Zioudrou C. (1993) The delta-opioid signal transduction on the gonadotropin-releasing hormone release is eicosanoid dependent. <u>Brain Research</u> 626: 219-224.

Dragatsis I., Papazafiri P., Zioudrou C. and Gerozissis K. (1995) Opioids modify the release of LH at the pituitary level: in vitro studies with entire rat pituitaries. Journal of <u>Endocrinology</u> 145: 263-270.

Dragatsis I., Zioudrou C. and Gerozissis K. (1995) Specific delta-opioid antagonists exert an agonist-independent inhibitory effect, similar to the agonist, on the release of GnRH in vitro. <u>Cellular and Molecular Neurobiology</u> 15: 389-400.

Avgerinos A., Axarlis S., **Dragatsis I**., Karidas T. and Malamataris S. (1995) Extractionless high-performance liquid chromatographic method for the simultaneous determination of piroxicam and 5'-hydroxypiroxicam in human plasma and urine. Journal of Chromatography B: Biomedical Applications 673: 142-146.

Merkouris M., **Dragatsis I.**, Megaritis G., Konidakis G., Zioudrou C., Milligan G. and Georgoussi Z. (1996) Identification of the critical domains of the delta-opioid receptor involved in G protein coupling using site-specific synthetic peptides. <u>Molecular Pharmacology</u> 50: 985-993.

Dragatsis I., Efstratiadis A. and Zeitlin S. (1998) Mouse mutant embryos lacking huntingtin are rescued from lethality by wild-type extraembryonic tissues. <u>Development</u> 125: 1529-1539.

Metzler M., Helgason C.D., **Dragatsis I.**, Zhang T., Gan L., Pineault N., Zeitlin S.O., Humphries R.K. and Hayden M.R. (2000) Huntingtin is required for normal hematopoiesis. <u>Human Molecular Genetics</u> 9: 387-394.

Dragatsis I., Dietrich P. and Zeitlin S. (2000) Expression of the Huntingtin-associated protein 1 gene in the developing and adult mouse. <u>Neuroscience Letters</u> 282: 37-40.

Dragatsis I. and Zeitlin S. (2000) CaMKIIalpha-Cre transgene expression and recombination patterns in the mouse brain. <u>Genesis</u> 26: 133-135.

Dietrich P., **Dragatsis I**., Xuan S., Zeitlin S. and Efstratiadis A. (2000) Conditional mutagenesis in mice with heat shock promoter-driven cre transgenes. <u>Mammalian</u> <u>Genome</u> 11: 196-205.

Dragatsis I., Levine M.S. and Zeitlin S. (2000) Inactivation of Hdh in the brain and testis results in progressive neurodegeneration and sterility in mice. <u>Nature Genetics</u> 26: 300-306.

Dragatsis I. and Zeitlin S. (2001) A method for the generation of conditional gene repair mutations in mice. <u>Nucleic Acids Research</u> 29: e10.

Reiner A., Del Mar N., Meade C.A., Yang H., **Dragatsis I.**, Zeitlin S. and Goldowitz D. (2001) Neurons lacking huntingtin differentially colonize brain and survive in chimeric mice. Journal of Neuroscience 21:7608-7619.

Chiao E., Fisher P., Crisponi L., Deiana M., **Dragatsis I.**, Schlessinger D., Pilia G. and Efstratiadis A. (2002) Overgrowth of a mouse model of the Simpson-Golabi-Behmel syndrome is independent of IGF signaling. <u>Developmental Biology</u> 243:185-206.

Zechner U., Hemberger M., Constância M., Orth A., **Dragatsis I.**, Lüttges A., Hameister H. and Fundele R. (2002) Proliferation and growth factor expression in abnormally enlarged placentas of mouse interspecific hybrids. <u>Developmental Dynamics</u> 224:125-134.

Mason, J.L., Xuan, S., **Dragatsis, I.**, Efstratiadis, A. & Goldman J.E. (2003) Insulin-like growth factor (IGF) signaling through type 1 IGF receptor plays an important role in remyelination. <u>The Journal of Neuroscience</u> 23:7710-7718.

Zakharenko, S.S., Patterson, S.L., **Dragatsis, I.**, Zeitlin, S.O, Siegelbaum, S.A., Kandel, E.R. & Morozov, A. (2003) Presynaptic BDNF required for a presynaptic but not postsynaptic component of LTP at hippocampal CA1-CA3 synapses. <u>Neuron</u> 39: 975-990.

Menalled, L.B., Sison, J.D., **Dragatsis, I.**, Zeitlin, S. & Chesselet, M.F. (2003) Time course of early motor and neuropathological anomalies in a knock-in mouse model of huntington's disease with 140 CAG repeats. <u>The Journal of Comparative Neurology</u> 465: 11-26.

Reiner, A., **Dragatsis, I.**, Zeitlin, S. & Goldowitz, D. (2003) Wild-type huntingtin plays a role in brain development and neuronal survival. <u>Molecular Neurobiology</u> 28: 259-276.

Okamoto, H., Nakae, J., Kitamura, T., Park, B.C., **Dragatsis, I.** & Accili, D. (2004) Transgenic rescue of insulin receptor-deficient mice. <u>Journal of Clinical Investigation</u> 114: 214-223.

Trushina, E., Dyer, R.B., Badger, J.D., Ure, D., Eide, L., Tran, D.D., Vrieze, B., Legendre-Guillemin, V., McPherson, P.S., Mandavilli, B.S., Van Houten, B., Zeitlin, S., McNiven, M., Aebersold, R., Hayden, M., Parisi, J.E., Seeberg, E., **Dragatsis, I.**, Doyle, K., Bender, A., Chacko, C. & McMurray, C.T. (2004) Mutant huntingtin impairs axonal trafficking in mammalian neurons in vivo and in vitro. <u>Molecular and Cellular Biology</u> 24: 8195-8209.

McMinn, J.E., Liu, S.M., Ludwig, T., **Dragatsis, I.**, Dietrich, P. & Chua, S.C. Jr. (2004) An allelic series for the leptin receptor gene generated by CRE and FLP recombinase. <u>Mammalian Genome</u> 15: 677-685.

Dragatsis, I., Zeitlin, S. & Dietrich, P. (2004) Huntingtin-associated protein 1 (Hap1) mutant mice bypassing the early postnatal lethality are neuroanatomically normal and fertile but display growth retardation. <u>Human Molecular Genetics</u> 13: 3115-3125.

Helton, R., Cui, J., Scheel, J., Ellison, J.A., Ames, C., Gibson, C., Blouw, B., Ouyang, L., **Dragatsis, I.,** Zeitlin, S., Johnson, R.S., Lipton, S.A. & Barlow, C. (2005) Brain-specific knock-out of hypoxia-inducible factor-1 lpha reduces rather than increases hypoxic-ischemic damage. Journal of Neuroscience 25: 4099-4107.

McMinn, J.E., Liu, S.M., Liu, H., **Dragatsis, I.**, Dietrich, P., Ludwig, T. & Chua, S.C. Jr. (2005) Neuronal deletion of Lepr elicits diabesity without affecting cold tolerance or fertility. <u>AJP - Endocrinology and Metabolism</u> 289:E403-E411.

Zhang, Y., Leavitt, B., van Raamsdonk, J., **Dragatsis, I.**, Goldowitz, D., McDonnald, M., Hayden, M. & Friedlander, R.M. Huntingtin Is a Functional Caspase-3 Inhibitor. Submitted for publication.

Reiner, A., Goldowitz, D., Del Mar, N., Meade, C.A., Liu, L., Sun, Z., Dietrich, P., Yue, J. & **Dragatsis, I.** A spontaneous elongation of the CAG-repeat region of the R6/2 transgene increases lifespan and attenuates NII formation. Submitted for publication.

Liu, L., Geisert, E.E., Frankfurter, A., Spano, A.J., Jiang, X., Yue, J., **Dragatsis, I.** & Goldowitz, D. Reporting class-iii ß tubulin expression with yellow fluorescent protein as a marker for neuronal development and differentiation in transgenic mice. Submitted for publication.

K. Books - Proceedings

Papazafiri P., **Dragatsis I**., Zioudrou C. and Gerozissis K. (1992) Regulation of the release of GnRH and LH by opioid peptides in vitro. In Wegmann R. J. and Wegmann M. A. (eds.), Recent Advances in Cellular and Molecular Biology, Vol. 3, Neurobiochemical transmitter pathways, adrenoceptors and muscarinic receptors. Peeters Press, Leuven, Belgium, pp. 163-171.

Dragatsis I., Gerozissis K., Papazafiri P. and Zioudrou C. (1992) Effects of delta-opioid peptides on the secretion of GnRH and metabolites of arachidonic acid, in vitro. Proceedings of the 6th Hellenic Pharmaceutical Congress pp. 448-453 (in Greek).

Dragatsis I., (1995) Effects of opioids on the release of the Gonadotropin-Releasing Hormone (GnRH) from the hypothalamus and Luteinizing Hormone (LH) from the pituitary of male rats. Ph.D. Thesis, University of Athens, Greece (in Greek).

Dietrich P. and **Dragatsis I**. (2005) Knock-in and Knock-out models of Huntington disease. In LeDoux M. (ed), Animal Models of Movement Disorders. Academic Press pp.317-328.

L. Communications

- 1. Gerozissis K., Papazafiri P., **Dragatsis I**. and Zioudrou C. Effects of delta-opioid receptor agonists on GnRH and LH release in vitro, in adult male rats. Proceedings of the 35th Scientific Conference of the Hellenic Biochemical and Biophysical Society. Athens, Greece, January 11-12, 1991. Newsletter No 32, pp. 90-91.
- 2. Papazafiri P., **Dragatsis I.**, Dray F., Zioudrou C. and Gerozissis K. Regulation of the release of GnRH and LH by opioid peptides, in vitro. 1st World Congress in Cellular and Molecular Biology. Paris, France, September 1-7, 1991. Abstract pp. 377.

- Gerozissis K., Dragatsis I., Dray F. and Zioudrou C. Effets d'opiopeptides specifiques des recepteurs delta sur la liberation du GnRH et du PGE₂. XXeme Colloque de la Societe de Neuroendocrinologie Experimentale. Geneve, Suisse, September 18-20, 1991 (in French).
- 4. Gerozissis K., Papazafiri P. and **Dragatsis I**. Opioids modify the release of LH at the pituitary level in the presence of the neurointermediate lobe. 9th Balkan Biochemical and Biophysical Days. Thessaloniki, Greece, May 21-23, 1992. Abstract pp. 180.
- Dragatsis I., Loukas S., Mercouris M. and Zioudrou C. Polyclonal antibodies to opioid receptors. International Summer School on New Developments in Lipid-Protein Interactions and Receptor Function. Spetsai, Greece, August 16-27, 1992. Abstract pp. 14.
- 6. Gerozissis K., Dragatsis I., Papazafiri P. and Zioudrou C. Modifications par certain opioides de la secretion de la LH directement au niveau hypophysaire. Importance de la presence du lobe posterointermediaire. XXIeme Colloque de la Societe de Neuroendocrinologie Experimentale. Nancy, France, September 23-25, 1992. Annales d' Endocrinologie t.53, pp. 42 (in French).
- 7. **Dragatsis I.** Eicosanoids are implicated on the release of GnRH by delta opioid agonists in the rat hypothalamus. November 23, 1992. Inst. of Biology, N.C.S.R. "Demokritos", Greece.
- 8. **Dragatsis I.** Opioids modify the release of GnRH at the hypothalamic level and the release of LH at the pituitary. March 24, 1993. Department of Biology, University of Athens, Greece.
- 9. **Dragatsis I**. and Gerozissis K. Delta-opioid antagonists with negative intrinsic activity modify per se the release of GnRH by the hypothalamus. Proceedings of the 40th Scientific Conference of the Hellenic Biochemical and Biophysical Society. Larissa, Greece, May 7-8, 1993. Newsletter No 36, pp. 40-41.
- 10.Gerozissis K., Dragatsis I. and Zioudrou C. Arachidonic acid metabolism is implicated in delta opioid action on GnRH release. First International Congress on Hormones, Brain and Neuropsychopharmacology. Rhodes, Greece, September 13-17, 1993. Neuropsychopharmacology 9(2S): 78S-79S.
- 11. **Dragatsis I.**, Gerozissis K. and Zioudrou C. Arachidonic acid metabolites are implicated in the release of Gonadotropin-Releasing Hormone by delta opioid agonists in rat hypothalamus. First International Meeting on Scientific Basis of Modern Pharmacy. Athens, Greece, June 8-11, 1994. European Journal of Drug Metabolism and Pharmacokinetics 19(2S): 76.
- 12.Merkouris M., **Dragatsis I.**, Konidakis G., Zioudrou C., Milligan G. and Georgoussi Z. Domains of the delta-opioid receptor involved in G-protein coupling. Mapping with

receptor derived peptides. Proceedings of the 44th Scientific Conference of the Hellenic Biochemical and Biophysical Society. Athens, Greece, January 12-13, 1996. Newsletter No 40, pp. 91-92.

- 13.Merkouris M., Dragatsis I., Megaritis G., Konidakis G., Zioudrou C., Milligan G. and Georgoussi Z. G protein-binding domains of the delta-opioid receptor mapped with synthetic peptides. International Narcotics Research Conference. Long Beach , California, U.S.A., July 21-26, 1996. Abstract M28 pp. 63
- 14.**Dragatsis I.**, Efstratiadis A. and Zeitlin S. Conditional disruption of the Hdh gene. Columbia University Departamental Retreat New York, USA, September 6-8, 1996.
- 15.**Dragatsis I**. Bypassing the lethality of embryos nullizygous for the Huntington gene homolog. Columbia University Departamental Retreat New York, USA, September 6, 1997.
- 16.**Dragatsis I**. Conditional inactivation of the Huntington's disease gene homologue in the mouse. Columbia University Departamental Retreat New York , USA, September 1998.
- 17. **Dragatsis I**. Conditional inactivation, Analysis of the Huntington's disease gene homologue in the mouse. NCSR Demokritos, Athens, Greece, January 1999.
- 18. **Dragatsis I.**, Fischer R., Levine M. and Zeitlin S. Conditional inactivation of the Hdh gene in the mouse brain. Huntington's disease research conference 1999. Boston, August 13-15, 1999.
- 19.Reiner A., Del Mar N., Meade I., Dragatsis I., Zeitlin S. and Goldowitz D. Neurons lacking huntingtin survive and appear to function normally in the brains of chimeric mice. Huntington's disease research conference 1999. Boston, August 13-15, 1999.
- 20.**Dragatsis I.** Function of huntingtin: Implication for Huntington's disease. UTHSC, Memphis, TN, June 5 2001.
- 21. **Dragatsis I.** Analysis of the normal function of huntingtin in the mouse. UTHSC, Memphis, TN, May 2002.
- 22.Kim C.B., Barlow C., **Dragatsis I.**, Johnson R.S., Scheel J., Zeitlin S.O. and Powell F.L.The Role of HIF-1 in the CNS for Ventilatory Acclimatization to Hypoxia. San Diego, EB meeting, April 2003.
- 23.Okamoto H., Nakae J., **Dragatsis I**. and Accili D. Selective re-activation of insulin receptor expression in insulin receptor knockout mice. New Orleans, ADA meeting June 13-17, 2003.

- 24.Zakharenko S.S., Patterson S.L., Dragatsis I., Zeitlin S.O, Siegelbaum S.A., Kandel E.R. and Morozov A. Presynaptic BDNF required for a presynaptic but not postsynaptic component of LTP at hippocampal CA1-CA3 synapses. New Orleans, Neuroscience meeting November 8-12, 2003.
- 25.Del Mar N., **Dragatsis I.**, Meade C., Sun Z., Goldowitz D. and Reiner A. Transgene expansion in the R6/2 mouse leasds to reduced NII formation and increased lifespan. New Orleans, Neuroscience meeting November 8-12, 2003.
- 26.Kim C.B., Johnson R.S., Scadeng M., **Dragatsis I.**, Zetlin S.O. and Powell FL. Conditional HIF-1a knockout in the CNS. Washington, EB meeting April 17-21, 2004.
- 27.Goldowitz D., **Dragatsis I.**, Del Mar N., Meade C., Sun Z., Liu L., Dietrich P., Yue J. and Reiner A. CAG repeat length, nuclear inclusions, and survival are dissociated in an expanded repeat R6/2 mouse line. Boston, HDF meeting August 12-15, 2004.
- 28.**Dragatsis I.**, Zeitlin S. and Dietrich P. Hap1 mutant mice bypassing the early postnatal lethality are neuroanatomically normal and fertile but display growth retardation. Boston, HDF meeting August 12-15, 2004.
- 29.Del Mar N., Reiner A., Meade C., Sun Z., Liu L., **Dragatsis I.**, Dietrich P., Yue J. and Goldowitz D. Correlation of lifespan with CAG repeat size in the R6/2 mouse with an expanded transgene. San Diego, Neuroscience meeting, October 23 27, 2004.
- 30.Liu L., Geisert E.E, Frankfurter A., Spano A.J., Glatt A.R., Jiang X., Yue J., **Dragatsis I.** and Goldowitz A. Reporter Tagging Class-III β Tubulin With Yellow Fluorescent Protein As a Marker For Neuronal Development And Differentiation In Transgenic Mice. Washington, DC, Neuroscience meeting, November 12-16, 2005.
- 31.Cherry S.D., Meade C.A., Del Mar N., Dragatsis I. Goldowitz D., Reiner A. and Cantrell A.R. Cortical HVA calcium current alterations in early symptomatic and late symptomatic R6/2X mice. Washington, DC, Neuroscience meeting, November 12-16, 2005.
- 32.Sun T-T, Benn C., Chawla P., Del Mar N., Meade C, Dragatsis I., Goldowitz D., Reiner A. and Cha J.-H. Neurotransmitter Receptor Changes in an Expanded CAG Repeat HD R6/2 Mouse line. Atlanta, Georgia, Neuroscience meeting, October 14-18, 2006.
- 33.Dietrich P., E S. and **Dragatsis I.** Effects of wild-type huntingtin overexpression in neuronal cells and mouse models for HD. Boston, HDF meeting August 11-13, 2006.
- 34.Sun T-T, Benn C., Chawla P., Del Mar N., Meade C, Dragatsis I., Goldowitz D., Reiner A. and Cha J.-H. Neurotransmitter Receptor Changes in an Expanded CAG Repeat HD R6/2 Mouse line. Boston, HDF meeting August 11-13, 2006.

- 35. Cherry S.D., Meade C.A., Del Mar N., Dragatsis I. Goldowitz D., Reiner A. and Cantrell A.R. Alterations in neurotransmitter receptor mediated modulation of HVA Ca^{2+} Channels in the R6/2 and R6/2x mouse models of Huntington's disease. Boston, HDF meeting August 11-13, 2006.
- 35.Zhang H., Dragatsis I., Repa J., Zeitlin S. and Bezprozvanny I. Search for normal function of huntingtin protein by microarray analysis. Boston, HDF meeting August 11-13, 2006.

M. Grant Support

Active support

High Q Principal Investigator Status: Awarded. Duration: one year. Dates: 07/01/05 - 06/30/2006. Effects of wild-type huntingtin overexpression on mouse models for Huntington's Disease The goal of this project is to investigate the potential rescue of the Huntington's Disease phenotype in the mouse by huntingtin overexpression.

Hereditary Disease Fdn **Co-Principal Investigator** Status: Awarded. Determination of the need for huntingtin in the mature CNS The goal of this project is to generate a tetracycline inducible system to investigate the role of huntingtin in adult mice.

NIH Principal Investigator Status: Awarded. Duration: two years(22 months). Dates: 07/01/05 – 04/30/07 Generation of a mouse model for Familial Dysautonomia The goal of this project it to generate a mouse model for Familial Dysautonomia, a devastating neurodegenerative disorder.

NIH

Collaborator Status: Awarded. Duration: two years. Dates: 06/15/05 – 05/31/07 Molecular Foundations of the Myoclonus-Dystonia Syndrome The goal of this project is to generate a mouse model for Dystonia.

Pending support

NIH Principal Investigator Status: Revised grant sent March 1st 2006. Duration: two years. Starting date: pending. Conditional ablation of adult neural stem cells The goal of this project it to investigate the role of adult neural stem cells.

Principal Investigator

NIH

Status: to be resubmitted. Duration: four years. Starting date: pending. *Role of huntingtin-associated protein 1 in neonatal feeding* The goal of this project it to investigate the role of Hap1 in feeding.