

## CURRICULUM VITAE

### PERSONAL DATA

Name : **Tomás Luis Falzone**

Date of Birth: April 25, 1972

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### POSITIONS, EDUCATION AND DEGREES

- **Investigator CONICET.** Investigator of the National Council for Scientific and Technological Research, Argentina. Principal Investigator of the neurobiology laboratory at the Cell Biology and Neuroscience Institute, Prof: E. De Robertis. School of Medicine, University of Buenos Aires, Argentina (IBCN-UBA-CONICET). **(2009-Present)**

- **Assistant Professor.** Histology, Cellular Biology and Embryology Department, School of Medicine, University of Buenos Aires, Argentina. **(2009-Present)**

- **Assistant Project Scientist.** Project Scientist in the Cellular and Molecular Medicine Department, University of California, San Diego. Research project: Axonopathies and neurodegeneration induced by selective axonal transport defects in KLC1-/- deficient mice. Institution: Howard Hughes Medical Institute, UCSD, USA. **(2007-2009)**

- **Postdoctoral Training in Cell Biology.** Post Graduate Researcher in the Cellular and Molecular Medicine Department, University of California, San Diego. Research project: Axonal Transport of Proteasome-Ubiquitin Degradative Machinery. Advisor: Dr. Lawrence S. B. Goldstein. Institution: Howard Hughes Medical Institute, UCSD, USA. **(2002-2007)**

- **Ph.D. in Genetics and Molecular Biology.** School of Physical and Natural Sciences, University of Buenos Aires. Research project: Pharmacological and behavioral characterization of the D4 dopamine deficient mice and Generation of a "knock-in" model by a substitution-allele mutation of the mouse D2 receptor transcriptional unit with the D4 receptor. Advisor: Dr. Marcelo Rubinstein. Institution: Institute of Genetic Engineering and Molecular Biology (INGEBI). Argentina. **(1997-2002)**

- **Undergraduate work in Biological Science.** School of Physical and Natural Sciences, University of Buenos Aires, Argentina. Project: Expression of recombinant proteins in milk of transgenic animals. Advisor: Dr. Marcelo Rubinstein. Institution: Institute of Genetic Engineering and Molecular Biology (INGEBI). **(1996-1997).**

- **B.S. Biology.** School of Physical and Natural Sciences, University of Buenos Aires, Argentina. Dec 1996. Major: Genetic Engineering and Molecular Biology. **(1991-1996)**

### FELLOWSHIPS AND AWARDS

- **Re-entry Research Fellowship.** Re-location fellowship from the National Council for Scientific and Technological Research (CONICET) Argentina. Project: Axonal Transport in the manifestation and progression of Alzheimer Disease Through the use of Mice Primary Cultures. (IBCN). **May 2009-September 2009**
- **Postdoctoral Research Fellowship** from the American Parkinson Disease Association (USA). Research project: Axonal Transport of Proteasome Ubiquitin and its Role in Transport Regulation. Advisor: Dr. Lawrence S. B. Goldstein. Institution: UCSD, USA. **(2004-2005)**
- **Pew Latin American Fellowship in Biomedical Sciences** from the PEW Charitable Trust (USA). Research project: Axonal Transport of Proteasome Ubiquitin Degradative Machinery. Advisor: Dr. Lawrence S. B. Goldstein. Institution: UCSD, USA. **(2002-2004)**
- **Senior Research Fellowship** from the National Council for Scientific and Technological Research (CONICET) Argentina. Project: Generation of a “knock-in” model by a substitution-allele mutation of the mouse D2 receptor transcriptional unit with the D4 receptor. Advisor: Dr. Marcelo Rubinstein. (INGEBI). **Aug 2000 - March 2002.**
- **Junior Research Fellowship** from the National Council for Scientific and Technological Research (CONICET) Argentina. Project: Pharmacological and behavioral characterization of the D4 dopamine deficient mice. Advisor: Dr. Marcelo Rubinstein. (INGEBI). **Aug 1998 - Aug 2000.**
- **Student Research Fellowship** from UBATEC University of Buenos Aires. Project: Expression of recombinant proteins in milk of transgenic animals. (INGEBI). **March 1996 - March 1998.**

## PUBLICATIONS

- **Falzone T.** & Stokin G. “*Imaging Amyloid Precursor Protein In Vivo – An Axonal Transport Assay*”. *Methods in Molecular Biology*, In press, **2011**.
- **Falzone T,** Gunawardena S, McCleary D, Reis G, Goldstein L. “*Kinesin-1 transport reductions enhance human tau hyperphosphorylation, aggregation and neurodegeneration in animal models of tauopathies.*”. *Human Molecular Genetics*, Nov 15;19(22):4399-408, **2010**.
- **Falzone T,** Stokin G, Lillo C, Rodrigues E, Westerman E, Williams D, Goldstein L. “*Axonal Stress Kinase Activation and Tau Misbehavior Induced by Kinesin-1 Transport Defects*”. *Journal of Neuroscience*. 29(18):5758-67. May 6, **2009**.
- Stokin G, Almenar-Queralt A, Gunawardena S, Rodrigues E, **Falzone T,** Kim J, Lillo C, Mount S, Roberts E, McGowan E, Williams D, Goldstein L. “*Amyloid Precursor Protein-Induced Axonopathies are Independent of Amyloid-β Peptides*” *Human Molecular Genetics*; 17(22):3474-86. Nov 15, **2008**.
- Bearer E, **Falzone T,** Zhang X, Readhead C, Biris O, Rasin A, Jacobs R. “*Role of Neuronal Activity and Kinesin on Tract Tracing by Manganese-Enhance MRI*”. *Neuroimage*, 37:37-46, **2007**.
- Stokin G, Lillo C, **Falzone T,** Bruschi R, Rockenstein E, Mount S, Raman R, Davies P, Masliah E, Williams D, Goldstein L. “*Axonopathy and transport deficits early in the pathogenesis of Alzheimer's disease*”. *Science*, 307(5713):1282-8, Feb 25, **2005**.

- Gan L, **Falzone T**, Zhang K, Rubinstein M, Baldessarini R, Tarazi F. “*Enhanced expression of dopamine D(1) and glutamate NMDA receptors in dopamine D(4) receptor knockout mice*”. Journal of Molecular Neuroscience, 22(3):167-78. **2004**.
- Avale M, **Falzone T**, Gelman D, Low M, Grandy D, Rubinstein M. “*The dopamine D4 receptor is essential for hyperactivity and impaired behavioral inhibition in a mouse model of attention deficit/hyperactivity disorder*”. Molecular Psychiatry, (7):718-26. Jul 9, **2004**.
- **Falzone T**, Gelman D, Young J, Grandy D, Low M, Rubinstein M. “*Absence of Dopamine D4 Receptors Results in Enhanced Reactivity to Unconditioned, But not Conditioned, Fear*”. European Journal of Neuroscience, (1):158-164. Jan 15, **2002**.
- **Falzone T**, Avale M, Gelman D, Rubinstein M. “*Normal Spatial Learning and Improved Spatial Working Memory in Mice (Mus musculus) Lacking Dopamine D4 Receptors.*” International Journal of Comparative Psychology, **14**:151-160, **2001**.
- Rubinstein M, Hurst R, Cepeda C, Althemus K, **Falzone T**, Levine M, Charles M, Low M, Grandy D. “*Dopamine D4 Receptor-Deficient Mice Display Cortical Hyperexcitability*”. Journal of Neuroscience, 21(11):3756-63. June 1, **2001**.
- Defagot M, **Falzone T**, Low M, Grandy D, Rubinstein M, Antonelli M. “*Quantitative Analysis of the dopamine D4 Receptor in the Mouse Brain*”. Journal of Neuroscience Research, 59(2):202-8. Jan 15, **2000**.
- Young J, Otero V, Cerdan M, **Falzone T**, Cheng Chan E., Low M, Rubinstein M. “*Authentic Cell-Specific and Developmentally Regulated Expression of Pro-Opiomelanocortin Genomic Fragments in Hypotalamic and Hindbrain Neurons of Transgenic Mice*”. Journal of Neuroscience, 18(17):6631-6640. Sep 1, **1998**.
- Cerdan M, Young J, Zino E, **Falzone T**, Otero V, Torres H, Rubinstein M. “*Accurate Spatial and Temporal Expression Transgene Driven by a 3.8 Kilobase Promoter of the Bovine  $\beta$ -casein Gene in the Lactating Mouse Mammary Gland*”. Molecular Reproduction & Development, 49(3):236-45. Mar, **1998**.
- Rubinstein M, Phillips T, Bunzow J, **Falzone T**, Dziewczapolski G, Zhang G, Fang Y, Larson J, McDougall J, Chester J, Saez C, Pugsley T, Gershanik O, Low M, Grandy D. “*Mice Lacking Dopamine D4 Receptors Are Supersensitivite to Ethanol, Cocaine, and Methamphetamine*”. Cell, 90(6):991-1001. Sep 19, **1997**.

## **ADVANCED COURSES**

### **Invited Faculty:**

- **Genetic Engineering in the Mouse Genome to Understand Human Gene Function and Disease.** Center for Scientific Studies. Valdivia, Chile. January, 2008.
- **Intensive Production and Analysis of Transgenic Animals.** Argentino-Brasileño Biotecnology Center. (CABBIO) UBA-CONICET. Dec 1998.

### **Attendee:**

- **Applications of Unbiased Stereology to Neural Systems.** Stereology Resource Center at San Diego. October 2004.
- **Human Embryonic Stem Cell Culture.** University of California, San Francisco. Department of Obstetrics, Gynecology and Reproductive Sciences. August 2004.

- **Advances in Neurosciences.** Institute of Genetic Engineering and Molecular Biology. University of Buenos Aires. Buenos Aires, Jul-Dec 1999.
- **Advances in Genetic Engineering II.** Institute of Genetic Engineering and Molecular Biology. National Council for Scientific and Technological Research and University of Buenos Aires, 1999.
- **Cellular and Molecular Bases of Memory.** Department of Behavioral Physiology. School of Exact and Natural Sciences. University of Buenos Aires. Argentina. Prof. Dr. Rottemberg (Chicago, USA.) Dr Romano (Bs As, Arg.).April 1998.
- **Advances in Genetic Engineering I.** Institute of Genetic Engineering and Molecular Biology. National Council for Scientific and Technological Research and University of Buenos Aires. 1997.

## GRANTS

- Principal Investigator. New Investigator Research Grant from Alzheimer Association. NIRG-10-172840. Project: New Models to Study the Role of Ubiquitin-Proteasome Axonal Transport in AD. Institución: IBCN (2010-2012).
- Principal Investigator. National Agency Research Grant from ANPCyT. PICT-2008-0293. Project: Generación de modelos neuronales de ratón y humanos para estudiar la función del transporte axonal del complejo Ubiquitina-Proteasoma en la acumulación anormal de proteínas asociadas con la enfermedad de Alzheimer. Institución: IBCN-UBA (2010-2013).
- Principal Investigator. Start-up Equipment Research Grant from ANPCyT. PME1-4. Project: Generación de modelos neuronales humanos para estudiar la función del transporte axonal a partir del establecimiento de protocolos de diferenciación de células madre humanas. Institución: IBCN-UBA (2010).
- Investigator. Start-up Return Fellowship from Pew Charitable Trust. Project: Axonal Transport of ubiquitin-proteasome subunits. Institution: IBCN-UBA (2009-2010).

## HUMAN RESOURCES

- Maria Gabriela Otero. Ph.D. Thesis Director. Biochemistry School. University of Buenos Aires. (2010-2014).
- Lucas Cromberg. Ph.D. Thesis Director. Exact & Natural Science School, University of Buenos Aires. (2011-2015).
- Lucas Cromberg. Undergraduate Thesis Director. Exact & Natural Science School, University of Buenos Aires. (2010-2011).
- David Mc Cleary. Co-director. Undergraduate. Cellular & Molecular Medicine Dept, UCSD, USA (2007-2008).
- Leah Boyer. Co-director. Undergraduate. Cellular & Molecular Medicine Dept, UCSD, USA, (2007-2008).

## SCIENTIFIC MEETINGS

- International Conference on Alzheimer Disease (AAICAD 2011). “*Axonal transport of the ubiquitin-proteasome system and its relevance for protein degradation*”. Otero G., Cromberg L., **Falzone T.** Paris, France 16-21 July, 2011.
- II Reunion Conjunta de Neurociencia “*Stress Kinase JNK Pathway in the Regulation of Axonal Transport*”. Cromberg, L, **Falzone T.**, Huerta Grande, Cordoba, Argentina. October 2010.

- International Symposium on Stem Cell Research. ISSCR “*Generation of human neurons from embryonic stem cells to study impairments of axonal transport in neurodegenerative diseases*”. **Falzone T**, Goldstein LSB. Buenos Aires, Argentina. November 2009.
- Biology in Balance. “*From Axonal Transport Imbalance to Axonopathies and Tau Hyperphosphorylation: The road to Neurodegenerative Tauopathies*”. **Falzone T**, Goldstein LSB. Buenos Aires, Argentina. October 2009.
- Spring Brain Conference. **Symposium. Invited speaker.** “*How Transport Defects Leads to Disease: A Model to Study Axonal Trafficking in Mice and Men*”. **Falzone T**. Palm Spring, EEUU. March 2009.
- Society for Neuroscience. “*Phosphorylation and Aggregation Levels of Mutated Human Tau (P301L) after Axonal Transport Defects Induced by KLC1 Motor Protein Subunit Reduction in Mice*”. **Falzone T**, Goldstein L. Washington DC, EEUU. Nov 2008.
- Society for Neuroscience. “*Mouse genetic approaches to determine the physiological and functional dynamics of MEMRI for tracing circuitry in living brains*”. Bearer E.L., Biris O, **Falzone T**, Jacobs R. Washington DC, EEUU. Nov 2008.
- Society for Neuroscience. “*Kinesin-1 Transport Defects Induce Aberrant Axonal Tau Protein Phosphorylation and Aggregation.*” **Falzone T**, Stokin G, Lillo C, Williams D, Goldstein L. San Diego, EEUU. Nov 2007.
- American Society for Cell Biology. **Symposium. Invited speaker.** “*Axonopathies and Neurodegeneration Induced by Selective Axonal Transport Defects in Kinesin Light Chain 1 Deficient Mice (KLC1-/-)*”. **Falzone T**, Stokin G, Lillo C., Williams D. Goldstein L. San Diego, EEUU. Dec 2006.
- PEW annual Meeting. “*Ubiquitin Proteasome Degradative Machinery in the fast tract.*” **Falzone T**, Goldstein LSB. San Juan. Puerto Rico. March 2004.
- American Society for Cell Biology. “*Axonal Transport of Ubiquitin and Proteasome Subunits.*” **Falzone T**, Goldstein L. San Francisco, EEUU. Dec 2003.
- Society for Neurociencie. “*Enhanced expression of dopamine D<sub>1</sub> and glutamate NMDA receptors in dopamine D<sub>4</sub> - knock out mice.*” Smith M, Gan L, **Falzone T**, Zhang K, Rubinstein M, Baldessarini R, Tarazi F. New Orleans, EEUU. Nov 2003.
- Society for Neurociencie. “*The dopamine D<sub>4</sub> receptor plays an essential role in a mouse model of hyperactivity and paradoxical response to psychostimulants.*” Avale E, **Falzone T**, Nemirovsky S, Elgoyhen B, Rubinstein M. New Orleans, EEUU. Nov 2003.
- PEW annual Meeting. “*Axonal Transport of Proteasome Ubiquitin Degradative Machinery.*” **Falzone T**, Goldstein LSB. Freeport, Bahamas. March 2003.
- Society for Neurociencie. “*A Mouse Model for Attention-Deficit and Hperactivity Disorder ADHD by Neonatal Brain lesions with 6-Hydroxidopamine.*” **Falzone T**, Avale E, Gelman D and Rubinstein M. San Diego, EEUU. Nov 2001.
- International Society for Neurochemistry. “*Mice Lacking D<sub>4</sub> Receptors Display Normal Spatial and Long Term Memory but Enhanced Working Memory.*” **Falzone T**, Gelman D, Young J and Rubinstein M. Buenos Aires, Argentina. August 2000.
- International Society for Neurochemistry. “*Neonatal Brain Lesions With 6-Hydroxydopamine (6-OHDA) Results in a Novel Mouse Model for Attention-Deficit and Hyperactivity Disorder.*” Avale E, **Falzone T**, Gelman D and Rubinstein M. Buenos Aires, Argentina. August 2000.

- International Society for Neurochemistry. “*CRE Recombinase Expression in Chatecolaminergic Neurons of Transgenic mice.*” Gelman D, Noain D, **Falzone T**, Avale E, Cerdan M and Rubinstein M. Buenos Aires, Argentina. August 2000.
- International Journal of Neuropsychopharmacology. “*Increased Emotional Responsivity in Mice Lacking Dopamine D4 Receptors.*” **Falzone T**, Gelman D, Grandy D, Low M and Rubinstein M. Brussels, Belgium. July 2000.
- International Society for Neurochemistry. “*Conditional Gene targeting of the Brain Dopamine D2 Receptors.*” Gelman D, **Falzone T**, Phillips T, Dickinson S, Zahniser N, Grandy D, Low M and Rubinstein M. Berlin, Germany. August 1999.
- Society for Neurocience. “*Mice lacking D4 dopamine receptors exhibit high anxiety in approach/avoidance conflicts*”., **Falzone T**, Young J, Grandy D, Low M and Rubinstein M. Los Angeles, EEUU Nov. 1998.
- American Society for Neurochemistry (ASN).”*Mice deficient in D4 dopamine receptors are supersensitive to drugs of abuse*”. Rubinstein M, Phillips T, **Falzone T**, Dziewczapolski G, Bunzow J, Low M and Grandy D. Denver, USA March 1998.
- American College of Neuropsychopharmacology (ACNP).”*Supersensitivity to psychoactive drugs and increased dopamine turnover in dopamine D4 receptor deficient mice*”. Rubinstein M, Phillips T, **Falzone T**, Dziewczapolski G, Bunzow J, Low M and Grandy D. USA Hawaii Dec. 1997.
- Society for Neurocience. “*Mice lacking D4 dopamine receptors display an increased dopamine turnover in the striatum and frontal cortex*”. Rubinstein M, **Falzone T**, Dziewczapolski G, Menalled L, Gershanik O, Bunzow J, Grandy D and Low M. New Orleans, EEUU Oct. 1997.
- Annual meeting of the Endocrine Society 79<sup>th</sup> (AMES). “*Neural-specific expression of the proopiomelanocortin (POMC) gene in transgenic mice*” Young J, Otero V, **Falzone T**, Cerdán M, Low M and Rubinstein M. Minneapolis, Minnesota, USA, June, 1997.