BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
Pimenta, Aurea F.	Research Assistant Professor
eRA COMMONS USER NAME	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Universidade de Sao Paulo, Brazil	BS	1970	Biology
Universidade de Sao Paulo, Brazil	MS	1975	Biology/Neurochemistry
Universidade de Sao Paulo, Brazil	PhD	1979	Biology/Neurochemistry

A. Positions and Honors

Positions and Employment

1979-1981 Assistant Professor, Dept. de Ciencias Fisiologicas, Universidade Federal de Santa Catarina, Brazil
1981-1983 Associate Professor, Dept. de Ciencias Fisiologicas, Universidade Federal de Santa Catarina, Brazil
1983-1990 Associate Professor, Dept. de Neurobiology, Universidade Federal Fluminense, Brazil
1991-1993 Research Associate, Department of Anatomy and Neurobiology, Medical College of PA, Philadelphia, PA
1993-1997 Instructor, UMDNJ-Robert Wood Johnson Medical School, Dept. of Neuroscience and Cell Biology, Piscataway, NJ
1997-2002 Research Assistant Professor, University of Pittsburgh Medical School, Department of Neurobiology, Pittsburgh, PA
2002-2003 Summer Course Faculty, Neurobiology, Marine Biological Laboratory, Woods Hole, MA
2002-pres Research Assistant Professor, Department of Pharmacology, Vanderbilt University Medical Center, Nashville, TN

Honors and Awards

1972-1975 M.Sc. Fellow, FAPESP (Fundacao de Amparo a Pesquisa do Estado de Sao Paulo, Brazil)
1975-1978 Ph.D. Fellow, FAPESP
1979 Researcher fellow, FAPESP
1984-1987 Research Fellow, CNPq (Conselho Nacional de Investigacoes Cientificas e Tecnologicas)
1987-1989 Postdoctoral Fellow, CNPq

B. Selected Peer-Reviewed Publications (in chronological order)

Böhm, G. M., Pompolo, S., Diniz, C. R., Gomez, M. V., Pimenta, A. F., & Neto, J. C. (1974). Ultrastructural alterations of mouse diaphragm nerve endings induced by purified scorpion venom, Tityustoxin. *Toxicon, 12*, 509-511.

Diniz, C. R., Pimenta, A. F., Netto, J. C., Pompolo, S., Gomez, M. V., & Böhm, G. M. (1974). Effect of scorpion venom from *Tityus serrulatus* (Tityustoxin) on the acetylcholine release and fine structure of nerve terminals. *Experientia, 30*, 1304-1305.

Diniz, C. R., Coutinho Netto, J., Pimenta, A. F., & Larson, R. E. (1975). Biochemical properties of Tityustoxin. In M. Rocha e Silva & G. Suarez-Kurtz (Eds.), *Concepts of membranes in regulation and excitation* (pp. 217-221). New York: Raven Press

Diniz, C.R., Pimenta, A. F., Coutinho Netto, J., Gomez, M. V., & Larson, R. E. (1976). Tityustoxin as a neuropharmacological tool. *Acad. Sci. Arts. Bosnia and Herzegovina, 24*, 183-l90.

Garcia Leme, J., Pimenta, A. F., Raulino-Filho, M., & Diniz, C. R. (1978). Sensory nerves and inflammation. Evidence for the release of a neurogenic permeability factor by Tityustoxin. *J. Path., 124*, l65-l76.

Adler-Graschinsky, E., Pimenta, A. F., & Diniz, C. R. (1980). Comparison of the release of endogenous and 3H-acetylcholine from slices of rat cerebral cortex. *Acta Physiol. Lartinoamer., 30*(2), 89-96.

Rodrigues, P. S., Guimarães, A. P. O., de Azeredo, F. A. M., & Martins Ferreira, J. (1988). Involvement of GABA and ACh in retinal spreading depression: Effects of "low calcium - high magnesium" solutions. *Exp. Brain Res., 73*, 659-664.

Hockfield, S., Kalb, R., G., & Guimarães, A. (1989). Experience-dependent expression of neuronal cell-surface molecules. In E. Goetzl & N. H. Spector (Eds.), *Neuroimmune networks: Physiology and diseases* (pp 57-63). NY: Wiley.

Zaremba, S., A. Guimarães, R.G. Kalb and S. Hockfield (l989) Characterization of an activity-dependent neuronal surface proteoglycan identified with monoclonal antibody Cat-301. *Neuron*, *2:* 1207-1219.

Guimarães, A, S. Zaremba and S. Hockfield (l990) Molecular and morphological changes in the cat lateral geniculate nucleus and visual cortex induced by visual deprivation are revealed by monoclonal antibodies Cat-304 and Cat-301. *J. Neurosci.,10:* 3014-3024.

Pimenta, A. F., Zhukareva, V., Barbe, M. F., Reinoso, B., Grimley, C., Henzel, W., Fisher, I. and Levitt, P. (1995) The limbic system-associated membrane protein is an Ig superfamily member that mediates selective neuronal growth and axon targeting. *Neuron*, *15*: 287-297.

Pimenta, A. F., Fischer, I. and Levitt, P. (1996) cDNA cloning and structural analysis of the human limbic-system-associated membrane protein (LAMP). *Gene*,*170*: 189-195.

Reinoso, B.S., Pimenta, A.F. and Levitt, P. (1996) Expression of the mRNAs encoding the limbic system-associated membrane protein (LAMP). I. Adult rat brain. *J. Comp. Neurol., 375*: 274-288.

Pimenta, A.F., Reinoso, B.S. and Levitt, P. (1996) Expression of the mRNAs encoding the limbic system-associated membrane protein (LAMP). II. Fetal rat brain. *J. Comp. Neurol., 375*:289-302.

Zhang, J-H, Pimenta, A.F., Levitt P. and Zhou, R. (1997) Dynamic expression suggests multiple roles of the eph family receptor brain-specific kinase (Bsk) during mouse neurogenesis. *Mol. Brain Res. 47:* 202-214.

Zhukareva, V., Chernevskaya, N., Pimenta, A., Nowycky, M. and Levitt, P. (1997) Limbic system-associated membrane protein (LAMP) induces neurite outgrowth and intracellular Ca^{2+} increase in primary fetal neurons. *Mol. Cell. Neurosci. 10*: 43-55.

Pimenta, A.F., Tsui, L-C, Heng, H.H.Q and Levitt, P. (1998) Assignment of the gene encoding the limbic system-associated membrane protein (LAMP) to mouse chromosome 16B5 and human chromosome 3 q13.2-q21. Genomics 49: 472-474

Mann, F., Zhukareva, V., Pimenta, A., Levitt, P. and Bolz, J. (1998) Membrane-associated molecules guide limbic and non-limbic thalamocortical projections. J. Neurosci., 18:9409-9419.

Levitt, P and Pimenta, A. (1999) LAMP (Limbic System Associated MembraneProtein). In: Guidebook to the extracellular matrix and

adhesion proteins. Kreis, T. and Vale, R. eds. pp 224-226. Oxford University Press.

Yabe, J.T., Pimenta, A. and Shea T.B. (1999) Kinesin-mediated transport of neurofilament protein oligomers in growing axons. J. Cell

Science, 112: 3799-3814.

Pimenta, A.F., Strick, P.L. and Levitt, P. (2001) Novel proteoglycan epitope in functionally discrete patterns in primate cortical and subcortical regions. J. Comp. Neurol. 430:369-388.

Yabe JT, Chan W K-H, Chylinski TM, Lee S, Pimenta AF and Shea TB (2001) The predominant form in which neurofilament subunits undergo axonal transport varies during axonal initiation, elongation and maturation. Cell Motil Cytoskel 48:61-83.

Yabe JT, Chylinski T, Wang F-S, Pimenta A, Kattar SD, Linsley M-D, Chan W K-H and Shea TB (2001) Neurofilaments consist

of distinct populations that can be distinguished by C-terminal phosphorylation, bundling and axonal transport rate in growing axonal neurites. J Neurosci 21:2195-2205.

Gil, O.D., Zhang, L., Chen, S., Ren, Y.Q., Pimenta, A., Zanazzi, G., Hillman, D., Levitt, P and Salzer, J. (2002) Complementary expression and heterophilic interactions between IgLON family members NTM and LAMP suggest a role in specification of sensory and limbic neuronal projections. J. Neurobiol. 51:190-204.

Chan W K-H, Yabe JT, Pimenta AF and Shea TB (2003) Growth cones contain a highly-dynamic population of neurofilament subunits. Cell Motil Cytoskel 54:195-207

Eagleson, K.L., Pimenta, A.F., Burns, M.M., Fairfull, L.D., Cornuet, P.K., Zhang, L. and Levitt, P. (2003) Distinct domains of the limbic system-associated membrane protein (LAMP) mediate homophilic and heterophilic interactions that regulate bifunctional effects on neurite outgrowth. *Mol. Cell. Neurosci*. 24:725-40

Jung, C, Chylinski, TM, Pimenta, A, Ortiz, D, Shea, TB. (2004) Neurofilament transport is dependent on actin and myosin. J Neurosci, 24: 9486-96.

Pimenta, AF, Levitt, P. Characterization of the genomic structure of the mouse limbic system-associated membrane protein (Lsamp) gene. Genomics, 83: 790-801.

Shea, TB, Yabe, JT, Ortiz, D, Pimenta, A, Loomis, P, Goldman, RD, Amin, N, Pant, HC. (2004) Cdk5 regulates axonal transport and phosphorylation of neurofilaments in cultured neurons. J Cell Sci, 117: 933-41.

Pimenta, AF, Levitt, P. (2005) Applications of gene targeting technology to mental retardation and developmental disability research. Ment Retard Dev Disabil Res Rev, 11: 295-302.

Chan, WK, Yabe, JT, Pimenta, AF, Ortiz, D, Shea, TB. (2005) Neurofilaments can undergo axonal transport and cytoskeletal incorporation in a discontinuous manner. Cell Motil Cytoskeleton, 62: 166-79.

Persico, AM, Levitt, P, Pimenta, AF. (2006) Polymorphic GGC repeat differentially regulates human reelin gene expression levels. J Neural Transm, 113:1373-1382.

Selected Abstracts

Pimenta, A. F., V. Zhukareva, B. Reinoso, C. Grimley, B. Henzel, I. Fisher and P. Levitt. (1993) Cloning the limbic System-associated membrane protein (LAMP): A new immunoglobulin superfamily member. *Soc. Neurosci Abstracts* 19: 689.

Levitt, P., V. Zhukareva, A. F. Pimenta (1994) Homophilic binding between recombinant and native limbic system-associated membrane protein selectively regulates neurite outgrowth. *Mol. Biol. Cell* 5: 232a

Pimenta, A. F., V. A. Zhukareva, B. S. Reinoso, C. Grimley, B. Henzel, I. Fisher and P. Levitt. (1994) Molecular analysis of the limbic system-associated membrane protein (LAMP): A new member of the immunoglobulin superfamily highly conserved in human and rat. *Mol. Biol. Cell* 5: 232a

Pimenta, A. F., Reinoso, B., Peng, B., Haskell, G., Fischer, I. and Levitt, P. (1995) Patterns of gene expression and promoter isolation of the limbic system-associated membrane protein (LAMP) in rat. *Soc. Neurosci. Abstracts* 21: 306.

Pimenta, A. F., Reinoso, B. S., Haskell, G., Fischer, I. and Levitt, P. (1995) Molecular cloning and expression pattern of a new nervous system specific phosphoprotein (BSp50). *Mol. Biol. Cell* 6:100a

Pimenta, A. F., Reinoso, B. S., Peng, B. and Levitt, P. (1995) Novel peptide insert produces diversity of the limbic system associated membrane protein (LAMP). *Mol. Biol. Cell* 6: 101a

Pimenta, A. F., Peng, B., Fischer, I. and Levitt, P. (1996) Genomic cloning and promoter isolation of the limbic system-associated membrane protein (LAMP). *J. Neurochem. 66* (suppl. 1): 81.

Pimenta, A.F., Strick, P.L. and Levitt, P. (1996) Specification of cortical and subcortical population of neurons revealed by monoclonal antibody 8B3. *Soc. Neurosci*. *Abstract*: 22:

Pimenta, A.F., Strick, P.L. and Levitt, P. (1997) Molecular specification of cortical and subcortical neurons revealed by monoclonal antibody 8B3. *J. Neurochem*. 69: S129.

Gil, O.D., Zanazzi, G., Struyk, A., Zhukareva, V., Pimenta, A.F., Levitt, P. and Salzer, J. (1997) Heterophilic interactions between members of a family of cell adhesion molecules: LAMP, OBCAM and neurotrimin that are differentially expressed in the nervous system. *Soc. Neurosci. Abstracts* 23: 666.8.

Mann, F., Zhukareva, V., Pimenta, A., Levitt, P. and Bolz, J. (1997) Molecular specification of limbic cortical circuits. *Soc. Neurosci. Abstracts* 23: 666.9.

Gil, O.D.., Chen, S., Ren, Y.Q., Pimenta, A., Hillman, D., Levitt, P. and Salzer, J. (1998) A monoclonal antibody specific for the IgCAM neurotrimin stains sensorimotor and olfactory projections in the rats CNS. *Soc. Neurosci. Abstracts* 24: 117.17.

Pimenta, A.F., Cornuet, P.K. and Levitt, P. (1999) Genomic structure of the gene encoding the limbic system-associated membrane protein (LAMP) *Mol. Biol. Cell* 10:93a.

Burns, M.M., Pimenta, A.F., Weinberg, E.S. and Levitt, P. (1999) Molecular cloning of novel zebrafish brain immunoglobulin Superfamily proteins. *Mol. Biol. Cell* 10:210a.

Eagleson, K.L., Pimenta, A., Fairfull, L.D., Cornuet, P. and Levitt, P. (2001) Structural determinants of the modulation of neurite outgrowth by LAMP. Mol. Biol. Cell 12: 467a.

Pimenta, A.F., Cornuet, P.K., Homanics, G.E., Pintar, J.E. and Levitt, P. (2003) Target disruption of the gene encoding the limbic system-associated membrane protein (LAMP): reduced anxiety and depression-like behavior in homozygous mutant mice. *Soc. Neurosci. Abstracts* Program Number 521.14.

Eagleson, K.L., Pimenta, A.F., Burns, M.M., Fairfull, L.D., Cornuet, P.K., Zhang, L. and Levitt, P. (2003) Distinct domains of the limbic system-associated membrane protein (LAMP) mediate homophilic and heterophilic interactions that regulate bifunctional effects on neurite outgrowth. *Soc. Neurosci. Abstracts* Program Number 142.2.

Persico, A.M. and Pimenta A. (2003) 5' UTR human reelin gene variants associated with autistic disorder blunt reporter gene expression in neuronal and non-neuronal cell lines. *Soc. Neurosci. Abstracts* Program Number 318.9.

Pimenta, A.F., Cornuet, P.K., Homanics, G.E., Pintar, J.E. and Levitt, P. (2003) Target disruption of the gene encoding the limbic system-associated membrane protein (LAMP): reduced anxiety and depression-like behavior in homozygous mutant mice. *Soc. Neurosci. Abstracts* Program Number 521.14.

Coolen LM, Wilson HE, Amstalden K, Haldeman E, Pimenta AF, Levitt P. (2006) Expression of limbic system-associated membrane protein is essential for male sexual behavior. *Soc. Neurosci. Abstracts* Program Number 268.21.

Haldeman E, Pimenta A, and Levitt P. (2006) Targeted disruption of the gene encoding the limbic system-associated membrane protein causes complex changes in behavioral reactivity without increasing anxiety. *Soc. Neurosci. Abstracts* Program Number 59.18.

C. Research Support

Ongoing Research Support

5R01MH045507-19 (Levitt) 05/01/04-04/30/09
NIH/NIMH
Factors Regulating Limbic System Assembly
This competing renewal application involves experiments on the molecular regulation of limbic system development, including knock-outs, cell transfections, anatomical analysis of thalamocortical circuits and cell culture studies.
Role: Co-Investigator

5P30 HD015052-26 (Levitt) 07/01/04-06/30/09
National Institute of Child Health and Human Development
John F. Kennedy Center for Mental Retardation
This grant provides core support for the Mental Retardation Research Center at Vanderbilt University.
Role: Core B - Coordinator of Molecular Neuroanatomy

Completed Research Support

0217838 - Shea (PI) 08/01/02 - 07/31/05
NSF
Regulation of Axonal Neurofilament Dynamics by Phosphorylation
Role: Collaborator