BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Baez-Pagan, Carlos A.	Adjunct Professor
eRA COMMONS USER NAME (credential, e.g., agency login)	

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

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
University of Puerto Rico	B.S.	06/00	Chemistry
University of Puerto Rico	Ph.D.	05/08	Chemistry
University of Puerto Rico	Postdoctoral	06/08-Present	Biophysics

A. Personal Statement

The long-term goals of the proposed research are to define whether a smoking cessation therapy (SCT) based on the use of the nicotinic receptor antagonist bupropion, will improve the immunological profile of HIV-seropositive smokers and to investigate the potential use of this smoking cessation medication as adjunctive therapy during HIV infection. Specifically, in aims 1 and 2 we propose to investigate whether therapeutic concentrations of bupropion can obliterate calcium overloading in monocyte-derived macrophages chronically exposed to gp120 and α7 nAChR agonists, and reduce single-channel α7 nAChR currents using the Patch clamp technique. The PI of this application has extensive experience in all configurations of the Patch clamp technique, namely whole-cell, cell-attached, outside-out, and inside-out configurations. In addition, the PI has accumulated a wealth of experience recording nAChR single-channel currents including the α7 nAChR expressed in macrophages. Aim 1 will provide and *in vitro* test of the hypothesis that the up-regulation of the α7 nAChR that occurs in HIV-seropositive smokers could lead to an increase in the intracellular calcium concentration that can be obliterated by α7 nAChR antagonist bupropion. By means of laser scanning confocal microscopy, we will compare the levels of α7 nAChR and intracellular calcium, in macrophages chronically exposed to gp120, α7 nAChR agonists, and bupropion. As coordinator of the Confocal Imaging Facility at UPR (CIF-UPR), the most advanced and well-equipped imaging facility in the University of Puerto Rico, I have extensive experience in fluorescence microscopy methods and ample access to state-of-the-art imaging technology to successfully carry out the experiments outlined in aim 1. Moreover, my particular research interests as graduate student led me to extensive imaging of the nAChR expressed in *Xenopus laevis* oocytes and by taking full advantage of the three-dimensional capabilities of confocal microscopy, I was able to identify clusters of nAChRs never before identified and which proved to be key in the modulation of nAChR function exerted by membrane cholesterol (Baez-Pagan, et al. 2008). As a postdoctoral fellow, I expanded my experience in imaging nAChRs by applying what I had learned while imaging nAChRs expressed in *Xenopus* oocytes to imaging nAChRs in transgenic mice end plates (Otero-Cruz, et al. 2010) and macrophages. In addition, the Confocal Imaging Facility Center for Image Analysis (CIF-CIA), which I also manage, is equipped with high-end computers and software (i.e. Imaris x64, www.bitplate.com) to enable a rigorous analysis of the confocal microscopy data gathered in this aim. The Confocal Imaging Facility at UPR was established in 2001 thanks to NIH and NSF funding and it has continued to grow since then. Indeed, we were recently awarded an NSF-MRI grant (DBI-0923132) to upgrade the facility to enable emission fingerprinting. As Co Investigator of this successful NSF-MRI grant, I was invited to serve as panelist and ad-hoc reviewer for MRI proposals in the Microscopy and Visualization Instruments panel.

B. Positions and Honors

Positions

2010- Adjunct Professor, Comparative Medicine, UPR-MSC

2008- Coordinator, Confocal Imaging Facility at UPR
2008- Research Associate, Chemistry Department, University of Puerto Rico
2000-03 Teaching Assistant, Organic Chemistry Lab, University of Puerto Rico
2001-03 Mentor, Pre-MARC Program, University of Puerto Rico

Honors

2003-06 Alliance for the Graduate Education and the Professoriate (AGEP) Pre-doctoral fellowship, University of Puerto Rico
2003-05 Southern Regional Education Board, Doctoral Scholar
2006-08 Minority Biomedical Research Support-Research Initiative for Scientific Enhancement (MBRS-RISE) Pre-doctoral Fellowship, University of Puerto Rico

C. Selected Peer-reviewed Publications

1. Griebenow, K., Vidal, M., Báez, C., Santos, A., and Barletta, G. (2001). Native like enzyme properties are important for optimum activity in neat organic solvents. J Am Chem Soc 123, 5380-5381. PMID: 11457414

2. Santos, A. M., Vidal, M., Pacheco, Y., Frontera, J. Báez, C., Ornellas, O., Barletta, G., and Griebenow, K. (2001). Effect of crown ethers on structure, stability, activity, and enantioselectivity of subtilisin Carlsberg in organic solvents. Biotechnol Bioeng 74, 295-308. PMID: 11410854

3. Navedo, M. F., Lasalde-Dominicci, J. A., Baez-Pagan, C. A., Diaz-Perez, L., Rojas, L. V., Maselli, R. A., Staub, J., Schott, K., Zayas, R., and Gomez, C. M. (2006). Novel beta subunit mutation causes a slow-channel syndrome by enhancing activation and decreasing the rate of agonist dissociation, Mol Cell Neurosci 32, 82-90. PMID: 16624571

4. Otero-Cruz, J.D., Báez-Pagán, C.A., Caraballo-González, I.M., and Lasalde-Dominicci, J.A. (2006). Tryptophan-scanning mutagenesis in the αM3 transmembrane domain of the muscle-type acetylcholine receptor: A SPRING MODEL REVEALED. J Biol Chem 282, 9162-9171. PMID: 17242410

5. Otero-Cruz, J.D., Torres-Núñez, D.A., Báez-Pagán, C.A., and Lasalde-Dominicci, J.A., (2008). Fourier transform coupled to tryptophan-scanning mutagenesis: Lessons from its application to the prediction of secondary structure in the acetylcholine receptor lipid-exposed transmembrane domains. BBA - Proteins and Proteomics 1784(9), 1200-1207. PMID: 18836288

6. Báez-Pagán, C. A., Martínez-Ortiz, Y., Otero-Cruz, J.D., Salgado-Villanueva, I.K., Velázquez, G., Ortiz-Acevedo, A., Quesada, O., Silva, W.I., and Lasalde-Dominicci, J.A., (2008) Potential role of caveolin-1-positive domains in the regulation of the acetylcholine receptor's activable pool: Implications in the pathogenesis of a novel congenital myasthenic syndrome. Channels 2(3), 180-190. PMID: 18836288

7. Otero-Cruz, J.D., Báez-Pagan, C.A., Dorna-Pérez, L, Grajales-Reyes, G.E., Ramírez-Ordoñez, R., Luciano, C.A., Gómez, C.M., and Lasalde-Dominicci, J.A., (2010). Decoding pathogenesis of slow-channel congenital myasthenic syndromes using recombinant expression and mice models. PRHSJ Vol. 29 No. 1, 3-16. PMID: 20222328

D. Research Support

Ongoing Research Support

DBI-0923132 Lasalde, JA (PI) 08/10/09-07/31/12
NSF
MRI/Acquisition: Upgrading the Confocal Imaging Facility at the University of Puerto Rico to Enable Emission Fingerprinting
The goal of this proposal is to provide the Confocal Imaging Facility at the University of Puerto Rico the necessary instrumentation to enable emission fingerprinting.
Role: Co-Investigator