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## BIOGRAPHICAL SKETCH

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NAME <b>Marisela Agudelo</b>		POSITION TITLE <b>Postdoctoral Research Associate</b>	
eRA COMMONS USER NAME <b>AGUDELO</b>			
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
<b>University of South Florida (USF)</b>	<b>B.S.</b>	<b>05/2003</b>	<b>Microbiology</b>
<b>University of South Florida (USF)</b>	<b>Ph.D.</b>	<b>05/2009</b>	<b>Immunology</b>
<b>Florida International University (FIU)</b>	<b>Postdoctoral</b>	<b>06/2009- current</b>	<b>Immunology</b>

**A. Personal Statement:** Overall, my research goal is to investigate the interaction between alcohol and histone deacetylases (HDACs) and their modulation of cannabinoid genes. Specifically, to measure changes in HDAC2, CB<sub>1</sub>, CB<sub>2</sub>, and GPR55 receptor expression in human dendritic cells, and study the epigenetic mechanisms induced by alcohol. I am a motivated young investigator who completed my graduate training in the cannabinoid research and Immunology fields with Dr. Thomas Klein at USF. Currently, I am continuing my career in the field of substance abuse as a Postdoctoral Research Associate working with Dr. Madhavan Nair in the Department of Immunology at FIU. My current research focus combines some components from my prior work on cannabinoids with alcohol research. My future goal is to progress to a career as an independent investigator in the fields of Immunology and drug abuse research.

### **B. Positions and Honors:**

#### **Positions and Employment:**

2001-2001 **Undergraduate Research Fellow.** Biomedical Science Research Summer Internship. USF.  
2001-2003 **Research Assistant Volunteer.** Department of Molecular Medicine, USF College of Medicine.  
2003-2009 **Graduate Research Assistant.** Department of Molecular Medicine. USF College of Medicine.  
2009- **Postdoctoral Research Associate.** Department of Immunology. HW College of Medicine, FIU.

#### **Awards:**

- 1. Minority Summer Undergraduate Research Fellowship Award.** 2001. USF. Tampa, FL
- 2. Association of Medical Science Graduate Students (AMSGS) Travel Award.** 2007. USF. To present at the 13th Conference of the Society on NeuroImmune Pharmacology. Salt Lake City, UT.
- 3. Young Investigator Travel Award (YITA).** 2007. To present at the 13th Conference of the Society on NeuroImmune Pharmacology. Salt Lake City, UT. Abstract # W1
- 4. First Place Immunology Presentation.** 2008. 2nd Annual Signature Interdisciplinary Program in Allergy, Immunology, and Infectious Disease Symposium. USF. Abstract # 1.
- 5. Florida-Georgia Louis Stokes Alliance for Minority Participation (FGLSAMP) Award.** 2008. USF College of Engineering. To present at the Annual Biomedical Research Conference for Minority Students (ABRCMS). Orlando, FL.
- 6. Outstanding Poster Presentation Award.** 2009. USF Research Day. Abstract # 20.

7. **Graduate and Professional Student Council (GPSC) Travel Award.** 2009. USF. To present at the 15th Conference of the Society on NeuroImmune Pharmacology. Wuhan, China.
8. **First Place Young Investigator Travel Award (YITA).** 2009. To present at the 15th Conference of the Society on NeuroImmune Pharmacology. Wuhan, China.
9. **First Place Abstract Selected for Young Investigator's Symposium Talk.** 2009. 15th Conference of the Society on NeuroImmune Pharmacology. Wuhan, China. Abstract # T1
10. **NIDA Director's Travel Award.** 2010. Award to attend the 72nd Annual Meeting of the College on Problems of Drug Dependence. Scottsdale, Arizona. Oral Communications # 16.
11. **RSA Junior Investigator Award** to attend the 34<sup>th</sup> Annual Research Society on Alcoholism meeting in Atlanta, GA. June 24<sup>th</sup>-29<sup>th</sup>, 2011
12. **Recipient of FIU Operational Excellence Award.** 2011. Merit Award given by the Dean of the Herbert Wertheim College of Medicine.
13. **Young Investigator Travel Award (YITA).** 2012. To present at the 18th Conference of the Society on NeuroImmune Pharmacology in Honolulu, HI.
14. **NIDA AAPI Workgroup Travel Stipend.** 2012. Award to attend the College on Problems of Drug Dependence (CPDD) 74<sup>th</sup> Annual Meeting in Palm Springs, CA.
15. **Early Career Investigator Travel Award (ECITA).** 2013. Award to attend the Society on NeuroImmune Pharmacology 19<sup>th</sup> Scientific Conference in San Juan, Puerto Rico.

### C. Selected Peer-reviewed Publications:

1. **Agudelo, M.,** Newton, C., Widen, R., Sherwood, T., Nong, L., Friedman, H., and Klein, T.W. (2008) Cannabinoid Receptor 2 (CB<sub>2</sub>) Mediates Immunoglobulin Class Switching from IgM to IgE in Cultures of Murine Purified B Lymphocytes. *J. Neuroimmune Pharmacol.*, 3(1), 35-42. PMID: 18247126
2. **Agudelo, M,** Saiyed, Z, Samikkannu, T, Khatavkar P, Gandhi, N, Nair N, and Nair MP. (2010). Dendritic Cells: Types, Life Cycles and Biological Functions. Chapter 10: Role of Dendritic Cells in HIV Infection: DC-SIGN and Novel Therapeutic Approaches. Nova Publishers. 167-177.
3. **Agudelo M,** Gandhi N, Saiyed Z, Pichili V, Samikkannu T, Khatavkar P, Yndart A, Nair M. (2011). Effects of alcohol on histone deacetylase 2 (HDAC2) and the neuroprotective role of trichostatin (TSA). *Alcohol Clin. Exp. Res.* 35(8):1550-6. PMID: 21447001
4. **Agudelo M.,** Yoo C, and Nair, MP. (2012) "Alcohol-induced serotonergic modulation: the role of histone deacetylases" *Alcohol.* 46(7):635-42. PMID: 22796363
5. **Agudelo M.,** Yndart A., Morrison M., Napuri J., Khatavkar P., and Nair MP. (2013) Differential Expression of Cannabinoid Genes in Alcohol Users. *Drug and Alcohol Dependence.* (manuscript under review).
6. Sherwood T.A. , Nong, L. , **Agudelo, M. ,** Newton, C., Widen, R. , and Klein T.W. (2009) Identification of Transcription Start Sites and Preferential Expression of Select CB<sub>2</sub> Transcripts in Mouse and Human B Lymphocytes. *J. Neuroimmune Pharmacol.* 4 (4):476-488. PMID: 19757078
7. Gandhi N, Saiyed ZM, Napuri J, Samikkannu T, Reddy PV, **Agudelo M,** Khatavkar P, Saxena SK, and Nair MP. (2010) Interactive role of human immunodeficiency virus type 1 (HIV-1) clade-specific Tat protein and cocaine in blood-brain barrier dysfunction: implications for HIV-1-associated neurocognitive disorder. *J. Neurovirol.* 16 (4):294-305. PMID: 20624003
8. Saiyed Z., Gandhi N, **Agudelo M,** Napuri J, Samikkannu T, Reddy P, Khatavkar P Yndart A, Saxena S, and Nair M. (2011) "HIV-1 Tat Upregulates Expression of Histone Deacetylase-2 (HDAC2) in Human Neurons: Implication for HIV-Associated Neurocognitive Disorder (HAND)" *Neurochemistry International.* 58(6):656-64. PMID: 21315782
9. Samikkannu T, **Agudelo M,** Gandhi N, Reddy PV, Saiyed ZM., Nwankwo D, Nair MP. (2011). Human immunodeficiency virus type 1 clade B and C gp120 differentially induce neurotoxin arachidonic acid in human astrocytes: implications for neuroAIDS. *J. Neurovirol.* 17(3):230-8. PMID: 21491143

10. Reddy PV, Samikkannu T, Gandhi N, Saiyed Z, **Agudelo M**, Khatavkar P, Yndart A, and Nair MP. (2012). HIV-1 gp120 induces antioxidant response element-mediated expression in primary astrocytes: Role in HIV associated neurocognitive disorder. *Neurochem. Intl.* 61(5):807-14. PMID: 21756955
11. Reddy PV, **Agudelo M.**, Atluri VS, Nair MP. (2012) Inhibition of Nuclear Factor Erythroid 2-Related Factor 2 Exacerbates HIV-1 gp120-Induced Oxidative and Inflammatory Response: Role in HIV Associated Neurocognitive Disorder. *Neurochem Res.* 37(8):1697-706. PMID: 22528837

**Abstracts (selected out of a total of 45):**

1. **Agudelo M.**, Yndart A., Morrison M., Muñoz K, Raymond A., and Nair MP. The interactive role of alcohol and cannabinoids on dendritic cell function. Society on NeuroImmune Pharmacology 19<sup>th</sup> Scientific Conference. San Juan, Puerto Rico. April 3<sup>rd</sup>-6<sup>th</sup>, 2013. **Abstract Selected for Early Career Investigator Travel Award (ECITA).**
2. **Agudelo M.**, Yndart A, Morrison M , Napuri J, Khatavkar P, Nair MP. The Interactive Role of Histone Deacetylases and Cannabinoid Genes in Alcohol Abusers. Society on NeuroImmune Pharmacology 18<sup>th</sup> Scientific Conference. Honolulu, HI. April 25<sup>th</sup>-29<sup>th</sup>, 2012. **Abstract Selected for Junior Investigator Travel Award.**
3. **Agudelo M**, Yndart A, Morrison M, Napuri J, Samikkannu T, Reddy PV, and Nair MP. Effects of synthetic cannabinoid compounds, JWH-015 and AM-630 on the blood brain barrier. CPDD 74<sup>th</sup> Annual Scientific Meeting. Palm Springs, CA. To be presented June 9-14<sup>th</sup>, 2012.
4. **Agudelo M**, Saiyed Z, Gandhi N, Samikkannu T, Khatavkar P, and Nair MP. Effects of alcohol on serotonin (5-HT<sub>3</sub>) receptor: the role of histone deacetylases (HDACs) and their inhibitor trichostatin A (TSA). CPDD 73<sup>rd</sup> Annual Scientific Meeting. Hollywood, FL. June 18<sup>th</sup>, 23<sup>rd</sup>, 2011. Abstract # 69
5. **Agudelo M**, Gandhi N, Spadola, C, Yndart A, Saiyed Z, Reddy P, Samikkannu T, Nair MP. Histone deacetylase 2 (HDAC2) expression in human monocyte-derived dendritic cells treated with alcohol. 34<sup>th</sup> Annual RSA Scientific Meeting. Atlanta, GA. June 24<sup>th</sup>-29<sup>th</sup>, 2011. Abstract # 160-W-915. **Abstract Selected for Junior Investigator Travel Award.**
6. **Agudelo M**, Spadola C, Yndart A, Gandhi N, Saiyed Z, Pichili VB, Samikkannu T, and Nair MP. Differential expression of cannabinoid genes in alcoholics. Society on NeuroImmune Pharmacology (SNIP). Clearwater beach, FL. April 6<sup>th</sup>-10<sup>th</sup>, 2011.
7. **Agudelo M.**, Yndart A, Morrison M , Napuri J, Khatavkar P, Nair MP. The Interactive Role of Histone Deacetylases and Cannabinoid Genes in Alcohol Abusers. Society on NeuroImmune Pharmacology 18<sup>th</sup> Scientific Conference. Honolulu, HI. April 25<sup>th</sup>-29<sup>th</sup>, 2012. **Abstract Selected for Junior Investigator Travel Award.**
8. **Agudelo M**, Yndart A, Morrison M, Napuri J, Samikkannu T, Reddy PV, and Nair MP. Effects of synthetic cannabinoid compounds, JWH-015 and AM-630 on the blood brain barrier. CPDD 74<sup>th</sup> Annual Scientific Meeting. Palm Springs, CA. June 9-14<sup>th</sup>, 2012. **Abstract Selected for NIDA AAPI Workgroup Travel Stipend. Presented at the NIDA International Forum June 11<sup>th</sup>, 2012.**
9. Yndart A, **Agudelo M**, Munoz Caamano K, Raymond A, Venkatta AS, Nair M.P. Dysregulation of IL-33 And ST2 in HIV1 B and C Clades. Society on NeuroImmune Pharmacology 19<sup>th</sup> Scientific Conference. San Juan, Puerto Rico. April 3<sup>rd</sup>-6<sup>th</sup>, 2013.
10. Ding H, **Agudelo M**, Pilakka Kanthikeel S, Guduru R, Sagar V, Atluri V, Samikkannu T, Nair MP. Dual Mechanism Enhanced Blood-Brain-Barrier Crossing by Transferrin conjugated Fluorescent Magnetic Liposome. Society on NeuroImmune Pharmacology 19<sup>th</sup> Scientific Conference. San Juan, Puerto Rico. April 3<sup>rd</sup>-6<sup>th</sup>, 2013.
11. Raymond, A.D, Yndart-Arias, A, **Agudelo, M**, Munoz, K. , Alturi, V.S, Pilakka, S, Thangavel, S, Nair, M.P. HIV Neuropathogenesis: Role of Nef+ Exosomes (Exnef), Methamphetamine and Opiates. Society on NeuroImmune Pharmacology 19<sup>th</sup> Scientific Conference. San Juan, Puerto Rico. April 3<sup>rd</sup>-6<sup>th</sup>, 2013.
12. Yndart A, **Agudelo M.** and Nair MP. Differential regulation of IL-33 by HIV-1 B and C clade infection in human astrocytes (HA): Role in neuropathogenesis. Society on NeuroImmune Pharmacology 18<sup>th</sup> Scientific Conference. Honolulu, HI. April 25<sup>th</sup>-29<sup>th</sup>, 2012.

13. Reyes-Hadsall S, **Agudelo M**, Nair MP. Effects of Alcohol on the SK-N-MC Neuroblastoma Cell Line. FIU & TERRA Environmental Research Institute. Biomedical and Comparative Immunology Symposium. MMC FIU Campus, Miami, FL. March 4<sup>th</sup>, 2011. **Abstract Selected for First Place Presentation Award.**
14. Gandhi N, **Agudelo M**, Saiyed ZM, Yndart A, Spadola C, Pichili VB, Samikkannu T, Napuri J, Khatavkar P, Nair MP. Molecular mechanism of immunosuppression by cocaine in HIV-1 infected subjects: role of TLR3. Society on NeuroImmune Pharmacology (SNIP). Clearwater beach, FL. April 6<sup>th</sup>-10<sup>th</sup>, 2011.
15. Pichili VB, Saiyed Z, Samikkannu T, **Agudelo M**, Gandhi N, Yndart A, Nair MP. Activation of the antioxidant defensive enzymes against HIV-1 GP120 are mediated by oxidative stress and elevated intracellular calcium levels. Society on NeuroImmune Pharmacology (SNIP). Clearwater beach, FL. April 6<sup>th</sup>-10<sup>th</sup>, 2011.
16. Saiyed ZM, Gandhi NH, Napuri J, Yndart A, **Agudelo M**, Pichili VB, Samikkannu T, Nair MP. Differential regulation of neuroplasticity associated genes by HIV-1B and C clades. Society on NeuroImmune Pharmacology (SNIP). Clearwater beach, FL. April 6<sup>th</sup>-10<sup>th</sup>, 2011.
17. Samikkannu T, Saiyed Z, **Agudelo M**, Reddy PV, Nwankwo D, Gandhi N, Khatavkar P, Yndart Y, Nair MP. Differential regulation of thiol modification by HIV-1 clade B and C protein. Society on NeuroImmune Pharmacology (SNIP). Clearwater beach, FL. April 6<sup>th</sup>-10<sup>th</sup>, 2011.
18. Khatavkar, P., Bryant, V., Rosenberg, R., Malow, R., Dévieux, J., Saiyed, Z., Thangavel, S., **Agudelo, M.**, Nair, M.. Association of Dopamine receptor D2 C957T gene SNP in learning and memory among HIV-positive alcohol abusers. Society of Neuro-Immune Pharmacology (SNIP) Scientific Conference, Clearwater beach, FL. April 6<sup>th</sup> -10<sup>th</sup>, 2011.

#### **Invited Presentations (selected out of a total of 7):**

1. **Invited Presentation.** “The role of cannabinoid receptors in the modulation of toll-like receptor (TLR) 4 expression and antibody class switching in mouse B Lymphocytes.” Society on NeuroImmune Pharmacology. Wuhan, China. April 23, 2009. **First Place Presentation selected for the Young Investigator’s Symposium.**
2. **Invited Presentation.** “Effects of alcohol on serotonin receptors and histone deacetylase 2.” CPDD 72nd Annual Scientific Meeting. Scottsdale, Arizona. June 16th, 2010. Oral communications #16.

#### **Teaching/Mentoring Experience:**

- **Teaching Assistant.** (Summer 2004). Organize teaching material and assist in the labs and classrooms of the Medical Microbiology course taught to the 1<sup>st</sup> year medical students at USF. This was a requirement for the Ph.D. curriculum at the Department of Immunology and Medical Microbiology at USF.
- **Mentor.** Train and mentor several undergraduate and medical students on a yearly basis.
  - Sophia Reyes-Hadsall (Summer 2010 and Summer 2011). TERRA High School Undergraduate Student. Student won first place for her presentation entitled “Effects of Alcohol on the SK-N-MC Neuroblastoma Cell Line”.
  - Alex Perez (Summer 2011). TERRA High School Undergraduate Student.
  - Jasmine Holmes (Summer 2011). Xavier University of Louisiana Undergraduate Honor Student.
  - Schuyler Williams (Summer 2012). Xavier University of Louisiana Undergraduate Student.
  - Mohammed Alkhalifah (Summer 2012). Medical Student, Al-Imam University Riyadh, Saudi Arabia.
  - Marisol Urdaneta (Fall 2011- Spring 2013). FIU Undergraduate Student.
  - Gloria Figueroa (Spring 2013). FIU Undergraduate Student.
- **Lecturer.** Lecture Basic Immunology in the Genes, Molecules, and Cells (GMC) Course.

#### **Committees:**

- **Co-Director** of the **Summer- Science Training and Research (Summer-STAR) Program** organized and founded by Dr. Cheryl D. Brewster, EdD. The FIU HWCOC Summer STAR Program will fund faculty-mentored student research projects and recruit students from groups who are traditionally underrepresented in

the health professions. This year the Program funded and recruited one student, Jasmine Holmes, from Xavier University of Louisiana.

- **Member of the Search & Screen Committee for the Department of Immunology.** The committee is responsible to search and recruit for faculty in the Department of Immunology.
- **Member of the Herbert Wertheim College of Medicine Interview Panel.** The panel interviews qualifying candidates for recruitment into the HW College of Medicine.

### **Professional Memberships:**

- 2001- Member, American Society for Microbiology (ASM)
- 2006- Member, Society on NeuroImmune Pharmacology (SNIP)
- 2007- Member, The American Association of Immunologists (AAI)
- 2009- Member, National Postdoctoral Association (NPA)
- 2009- Member, International Society for NeuroVirology (ISNV)
- 2010- Member, College on Problems of Drug Dependence (CPDD)
- 2010- Member, Research Society on Alcoholism (RSA)
- 2012- Member, National Hispanic Science Network on Drug Abuse (NHSN)

### **Patents:**

Patent Serial No: 61/542,471.

Title: “Methods and Compositions for Reducing Immunoglobulin E (IgE) in a Patient”

Provisional application filed with the United States Patent and Trademark Office on October 3, 2011 by the University of South Florida.

Inventors: Thomas W. Klein, Catherine Newton, Catherine Patterson and **Marisela Agudelo.**

### **D. Research Support:**

**1K99AA021264-01A1**

NIH/NIAAA.

K99 Period: 02/15/2013 – 01/31/2015

PI: Marisela Agudelo, Ph.D.

**EtOH-induced Immunomodulation: Role of Histone Deacetylases and Cannabinoid Genes.**

The major goal of this project is to study the epigenetic mechanisms of alcohol effects on the immune system and the role of histone deacetylases and cannabinoid genes in the immunoregulatory process.