

# **Aikomari Guzmán-Martínez**

## **Assistant Professor**

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### **EDUCATION**

PhD, Chemistry, December 2007, University of California, San Diego

MS, Chemistry, June 2004, University of California, San Diego

BS, Chemistry, June 2000, University of Puerto Rico, Río Piedras

### **RESEARCH INTERESTS**

My research interests involve Peptide Prebiotic Chemistry, and Chemistry Education of Antibiotics. Part of my research group focus on the Peptide Chemistry in the Origins of Life, specifically Prebiotic Chemistry and Chemical Evolution of Polypeptides. The other part of my research group develops laboratory experiments for the purpose of Chemical Education of Antibiotics, where we isolate Natural Products and test them for Antibiotic Properties.

### **RESEARCH EXPERIENCE**

2017 summer, Visiting Researcher

Georgia Institute of Technology, with Professor Nicholas Hud and the Center for Chemical Evolution  
Proto Polypeptide Chemistry

2008-2010, NIH Postdoctoral Fellow

Boston College, with Professor Amir H. Hoveyda

Design, discovery, and development of chiral *N*-heterocyclic carbenes that promote  
Cu-catalyzed enantioselective synthesis of allylic boronates.

2002-2007, Graduate Studies

University of California, San Diego, with Professor Michael S. VanNieuwenhze

Dissertation Title: "Total Synthesis of Lysobactin, a Natural Product Antibiotic Active  
Against Methicillin and Vancomycin Resistant Bacteria"

Synthesis of non-proteinogenic amino acids.

Total synthesis of Lysobactin and of analogs.

2000-2002, Assistant Scientist I

Pfizer Global Research & Development, with Dr. Matthew Brown

Synthesis of different compounds for drug screening experiments in the Immunology Group,  
Department of Immunology and Infectious Diseases of Discovery.

1997-2000, Undergraduate Research

University of Puerto Rico, Río Piedras, with Professor Néstor M. Carballeira

Total synthesis of unusual lipids that originated from marine sponges or marine bacteria.

Isolation and characterization of natural phospholipids found in marine sponges.

## TEACHING EXPERIENCE

2014-Present, Organic Chemistry Professor, University of Puerto Rico, at Mayagüez

Organic Chemistry I and II (QUIM 3461, QUIM 3463)

Organic Chemistry for Chemist, Laboratory I and II (QUIM 3071L-3072L)

2010-2013, Organic Chemistry Lecturer, University of Puerto Rico, Río Piedras

Organic Chemistry I and II (QUIM 3031-3032)

Organic Chemistry Laboratory I and II (QUIM 3031L-3032L)

2002-2004, Teaching Assistant, Department of Chemistry, University of California, San Diego

Organic Chemistry Laboratory (CHEM 143A)

Organic Chemistry I, II, and III (CHEM 140 A, B, and C)

## PUBLICATIONS

1. Guzman-Martinez, A.; Hoveyda, A. H. "Enantioselective Synthesis of Allylboronates Bearing a Tertiary or Quaternary B-Substituted Stereogenic Carbon by NHC-Cu-Catalyzed Substitution Reactions" *J. Am. Chem. Soc.*, **2010**, *132*, 10634–10637.
2. Guzman-Martinez, A.; Lamer, R. B.; VanNieuwenhze, M. S.; "Total Synthesis of Lysobactin", *J. Am. Chem. Soc.*, **2007**, *129*, 6017-6021.
3. Guzman-Martinez, A.; VanNieuwenhze, M. S.; "An Operationally Simple and Efficient Synthesis of Orthogonally Protected L-threo- $\beta$ -Hydroxyasparagine" *Synlett*, **2007**, *No. 10*, 1513-1516.
4. Brown, M. F.\* Bahnck, K. B.; Blumberg, L. C.; Brissette, W. H.; Burrell, S. A.; Driscoll, J. P.; Fedeles, F.; Fisher, M. B.; Foti, R. S.; Gladue, R. P.; Guzman-Martinez, A.; Hayward, M. M.; Lira, P. D.; Lillie, B. M.; Lu, Y.; Lundquist, G. D.; McElroy, E. B.; McGlynn, M. A.; Paradis, T. J.; Poss, C. S.; Roache, J. H.; Shavnya, A.; Shepard, R. M.; Trevena K. A.; and Tylaska, L. A.; "Piperazinyl CCR1 antagonists—optimization of human liver microsome stability", *Bioorg. Med. Chem. Letters*, **2007**, *17*, 3109-3112.
5. Carballeira, N. M.; Guzman, A. "Unusual Lipid Composition of *Bacillus* sp. Isolated from Lake Pomorie in Bulgaria", *Lipids*, **2000**, *35*, 1371-1375.
6. Carballeira, N. M.; Emiliano, A.; Guzman, A. "Facile Syntheses for (5Z,9Z)-5,9-hexadecadienoic acid, (5Z, 9Z)-5,9-nonadecadienoic acid, and (5Z,9Z)-5,9-eicosadienoic acid through a common synthetic route" *Chem. Phys. Lipids* **1999**, *100*, 33-40.

## PRESENTATIONS

- September 2017 - Effects of Aromatic Heterocycles on the Prebiotic Formation of Depsipeptide Oligomers, Precursors of Proto-Polypeptides - University of Puerto Rico, Mayagüez, PR (seminar, oral presentation)
- November 2014 - Total Synthesis of Lysobactin – Chemistry Seminar - University of Puerto Rico, Mayagüez, PR (seminar, oral presentation)
- October 2013 - Part I: Total Synthesis of Lysobactin; Part II: Cu-Catalyzed Enantioselective Synthesis of Allylic Boronates Promoted by Chiral *N*-Heterocyclic Carbenes – Chemistry Seminar - University of Puerto Rico, Mayagüez, PR (seminar, oral presentation)
- October 2009 - “Cu-Catalyzed Enantioselective Synthesis of Allylic Boronates Promoted by Chiral *N*-Heterocyclic Carbenes” American Chemical Society Southeastern Regional Meeting, San Juan, PR (oral presentation)
- September 2006 - “Total Synthesis of Katanosin B” - American Chemical Society National Symposium, San Francisco, CA (poster presentation)
- March 2005 - “Studies Toward the Synthesis of Katanosin B” - American Chemical Society National Symposium, San Diego, CA (poster presentation)
- March 2000 - “Unusual Lipid Composition of *Bacillus* sp. Isolated from Lake Pomorie in Bulgaria” - 35th American Chemical Society Junior Technical Meeting, Rio Piedras, P.R. (oral presentation)
- March 1999 - “Facile Syntheses for (5*Z*, 9*Z*)-5,9-nonadecadienoic” - 34th American Chemical Society Junior Technical Meeting, Mayagüez, P.R. (oral presentation)

## HONORS

- National Institute of Health Postdoctoral Fellowship (May 2008 - May 2010)
- Graduate Assistance in Areas of National Need Fellowship, Department of Education (August 2004 - June 2007)
- Minority Access to Science, Engineering, and Math Fellowship, National Science Foundation (August 2002 - June 2003)
- Pfizer Fellowship, University of Puerto Rico (August 1999 - May 2000)
- Minority Access to Research Careers, National Institute of Health (June 1997 - May 1999)

## REFERENCES

Available upon request.