José L. McFaline-Figueroa

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Education

May 2006, Obtained my bachelor's degree in Chemistry at the University of Puerto Rico at Mayagüez. Graduated with honors. Took a variety of general engineering and chemical engineering courses during my studies.

1997-2001, High School Diploma, Colegio San José, San Germán, PR. Graduated with honors.

Research Experience

August 2006 – present: Technical assistant for mass spectrometry analysis of DNA and RNA damage adducts at the Bilogical Engineering Division at the Massachussetts Institute of Technology.

June 2006: Collaborated with Dr. Abdu Alayash of the Center for Biologics Evaluation and Research of the Food and Drug Administration. Prepared samples of Cysteine-rich protein to be analyzed trough mass spectrometry in order to obtain the sequence of the protein and to identify the cysteines involved in S-nitrosylation and H_2S binding.

October 2005 – May 2006: Collaborated with Dr. Eric Schreiter, post-doctoral student at the Chemistry Department of the University of Puerto Rico at Mayagüez, in obtaining crystal structures of myoglobin with different ligands, analyzing by X-ray diffraction, and in doing the bench work to corroborate the formation of these complexes.

October 2005 – November 2005, Collaborated with Dr. William Montfort of the University of Arizona at the Chemistry Department of the University of Puerto Rico at Mayagüez in obtaining, through X-ray diffraction, the crystal structure of myoglobin as isolated in our laboratory to understand the

differences between our protein and the others previously characterized.

February 2006 – March 2006, Collaborated with Dr. Jonathan Wittenberg and Dr. Beatrice Wittenberg from the Albert Einstein Institute in New York at the Chemistry Department of the University of Puerto Rico at Mayagüez. Our main focus was to deal with the kinetics of ligand binding to the myoglobin which serves as our model as well as some initial work on some new uncharacterized proteins that will be presented by Dr. Bonaventura's laboratory later on.

August 2005-May 2006, Vice-president of the American Chemical Society (ACS) at the University of Puerto Rico at Mayaguez student chapter.

January 2005-present**,** Laboratory Technician for the Center of Biomedical Research Excellence (COBRE II) at the Chemistry Department of the University of Puerto Rico at Mayagüez.

August 2004-December2004, Part-time Undergraduate Researcher for the Center of Biomedical Research Excellence (COBREII) at the Chemistry Department of the University of Puerto Rico at Mayagüez.

August 2004-December 2004, Presented chemistry demonstrations as a part of the Science on Wheels Educational Chemistry Program based at the University of Puerto Rico at Mayagüez

Summer 2003, Intern in the field of Chemistry at the Natural Products Utilization and Research Unit of the United States Department of Agriculture at the University of Mississippi at Oxford, Mississippi.

August 2002-December 2003, Undergraduate Researcher at the Natural Products Laboratory of the Chemistry Department at the University of Puerto Rico at Mayagüez.

August 2002-May 2004: Worked as a mentor/tutor of Chemistry in the mentoring program of the AMP organization at the University of Puerto Rico at Mayagüez.

Extracurricular Activities

August 2005-May 2006, Vice-president of the American Chemical Society (ACS) Student Chapter at the University of Puerto Rico at Mayagüez.

2002-present, Active member of the American Chemical Society (ACS) Student Chapter at the University of Puerto Rico at Mayagüez.

Honors and Awards

March 2003- May 2004
Engineering Honor Roll Member
UPR Mayagüez Campus
Mayagüez, PR

Skills

Fluent in both written and spoken Spanish and English.

Experienced in the use of computers and familiar with several word processor, spreadsheet, presentation, imaging and database programs.

Through two different laboratory courses: Analytical Chemistry II and Instrumental analysis I, I have gained experience in the use of mass spectrometry analysis mainly as a source of identifying organic compounds. Also knowledgeable of the use of mass spectrometry as a means of obtaining structure and sequence of proteins.

Familiar with basic molecular biology techniques such as PCR, gel electrophoresis, restriction-enzyme digestions, etc.

Experienced in the use of dynamic and static light scattering techniques and equipment

Knowledgeable of chromatographic techniques such as size exclusion and ion chromatography, HP/Agilent series GC and HPLC. Also have used other separation techniques such as gel electrophoresis mostly for checking the purity of protein samples.

Exposed on a constant basis to the use of spectroscopic instruments such as Fourier transform infrared and Agilent series UV-Vis spectrophotometer, and use of Bruker 500MHz NMR (using the Red Hat software program).

Plant in-vitro cultures for growth optimization purposes utilizing aseptic techniques.

Very experienced in the use of Siever's Nitric Oxide Analyzers and VWR Free Radical Analyzer for the measurement of nitrosothiol formation.

Crystallography techniques for the growth and optimization of protein crystals and some experience using an X-Ray diffraction machine to obtain the structure of a particular protein.

Experienced in the use of API 3000 triple quadrupole mass spectrometry system for the measurement of DNA and RNA damage adducts.

Through my work in the COBRE II laboratory I have become experienced in the more administrative aspect of running a laboratory such as the purchase of reagents and equipment and handling the monthly expenses.

Interests

Bioinorganic and biochemical investigations also interested in molecular biology subjects.

References

Dr. Joseph Bonaventura, Director and Head Investigator for the Center of Biomedical Research Excellence (COBRE), tel. 787-832-4040 ext. 3294.

Ricardo Camacho, Director of Science on Wheels Educational Chemistry Program, tel. 787-265-5453.

Dr. Agnes Rimando, Head Investigator at the Natural Products Laboratory and Research Unit of the United States of Agriculture, tel. 662-915-1038.

Dr. Fernando Souto, Head Investigator for the Natural Products Laboratory at the Chemistry Department of the University of Puerto Rico at Mayagüez, tel. 787-832-4040 ext. 2446