Jayme A. Souza-Neto, Ph.D.

Education

2006 Doctor of Philosophy, Genetics, São Paulo State University, Botucatu, SP, Brazil (Supported by FAPESP and CAPES, Brazil). Mentor: Dr. Paulo E. M. Ribolla.
Thesis title: Biochemical and molecular aspects of sugar digestion in *Anopheles aquasalis* mosquitoes.

2002 Bachelor of Science, Biology, North Fluminense State University, Campos, RJ, Brazil (Supported by CNPq and FENORTE, Brazil). Mentor: Dr. Francisco J. A. Lemos.
Monograph title: Partial purification of *Aedes aegypti* gut chitinases.

Research Fellowships

2006-2007 Junior Postdoctoral Research Fellowship from *National Council for Scientific and Technological Development (CNPq, Brazil)*, São Paulo State University, Botucatu, SP, Brazil.

2005 Ph.D. International Exchange Program Fellowship from *Council for the Improvement of High Level Personnel (CAPES, Brazil)*, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA.

2002-2006 Ph.D. Program Fellowship from *São Paulo State Research Support Foundation (FAPESP)*, São Paulo State University, Botucatu, SP, Brazil.

1999-2001 Undergraduate Scientific Initiation Program Fellowship from *National Council for Scientific and Technological Development (CNPq, Brazil)*, North Fluminense State University, Campos, RJ, Brazil.

1999 Undergraduate Scientific Initiation Program Fellowship from *North Fluminense State Foundation (FENORTE, Brazil)*, North Fluminense State University, Campos, RJ, Brazil.

Publications

1. **Souza-Neto, J.A.,** Machado, F.P., Lima, J.B., Valle, D., Ribolla, P.E.M., 2007. Sugar digestion in mosquitoes: Identification and characterization of three midgut α-glucosidases of the neo-tropical malaria vector *Anopheles aquasalis* (Diptera: Culicidae). Comp. Biochem. Physiol. A 147, 993-1000.

2. **Souza-Neto, J.A.**, Gusmao, D.S., Lemos, F.J.A., 2003. Chitinolytic activities in the gut of *Aedes aegypti* (Diptera: Culicidae) larvae and their role in digestion of chitin-rich structures. Comp. Biochem. Physiol. A. 136, 717-724.

Abstracts

1. **SOUZA-NETO, J.A.,** JACOBS-LORENA, M., RIBOLLA, P.E.M. Sugar Digestion in Neo-trocipal anopheline mosquitoes. A new pathway for vector control? 10th IUBMB Conference and 36th Annual Meeting of the Brazilian Society of Biochemistry and Molecular Biology, Salvador, Brazil, 2007.
2. MURY, F.B., FERREIRA, L.S., SILVA, J.R., **SOUZA-NETO, J.A.**, RIBOLLA, P.E.M., FERREIRA, B.S., DE SOUZA-FILHO, G.A., OLIVEIRA, M.F., OLIVEIRA, P.L., SILVA, C.P., DANSA-PETRETSKI, M. Alpha-glucosidase is a hemozoin synthase in *Rhodnius prolixus.* 10th IUBMB Conference and 36th Annual Meeting of the Brazilian Society of Biochemistry and Molecular Biology, Salvador, Brazil, 2007.
3. BRANT, M. P. R. C., SEQUEIRA, C. G. O., Guimarães, S., RIBOLLA, P. E. M., **SOUZA-NETO, J. A.** Bioquímica dos produtos de excreção/secreção de larvas de *Dermatobia hominis*. In: XIX Brazilian Congress of Parasitology, 2005, Porto Alegre. Revista de Patologia Tropical, 2005. v. 34.
4. **SOUZA-NETO, J. A.,** ALONSO, D. P., LIMA, J. B. P., VALLE, D., MAIA, I. G., RIBOLLA, P E M. Biochemical analysis of partially purified intestinal α-glucosidases from the malaria vector, *Anopheles aquasalis* (Diptera: Culicidae). In: XXXIII Annual Meeting of the Brazilian society of Biochemistry and Molecular Biology, Caxambu, Brazil, 2004.
5. **SOUZA-NETO, J. A.,** ALONSO, D. P., MACHADO, F. P., LIMA, J. B. P., VALLE, D., RIBOLLA, P. E. M. Sugar digestion: characterization of involved enzymes and influence on *Anopheles aquasalis* (Diptera:Culicidae) mosquitoes longevity and fecundity. In: XX Annual Meeting of the Brazilian Society of Protozoology and XXXI Annual Meeting on Basic Research in Chagas Disease, Caxambu, Brazil, 2004.
6. **SOUZA-NETO, J. A.,** LIMA, J. B. P., VALLE, D., RIBOLLA, P. E. M. Biochemical characterization and partial purification of an intestinal α-glucosidase after sugar feeding of the Brazilian malaria vector mosquito, *Anopheles aquasalis*. In: XXX Annual meeting on basic research in Chagas Disease and XIX Meeting of the Brazilian Society of Protozoology. Revista do Instituto de Medicina Tropical de São Paulo, 2003. v. 45. p. 209-209.
7. **SOUZA-NETO, J. A.,** GUSMÃO, D. S., LEMOS, F. J. A. Presence of chitinase activities in the gut of *Aedes aegypti* (Diptera:Culicidae) larvae for digestion of chitin-rich structures. In: XXX Annual meeting on basic research in Chagas Disease and XIX Meeting of the Brazilian Society of Protozoology, Revista do Instituto de Medicina Tropical de São Paulo, 2003. v. 45. p. 212-212.
8. BARRETO, M. S., **SOUZA-NETO, J. A.,** GUSMÃO, D. S., LEMOS, F. J. A.. Relationship between chitinase and lisozyme activities with the gut of *Aedes aegypti* larvae. In: XVIII Meeting of the Brazilian Society of Protozoology and XXIX Annual meeting on basic research in Chagas Disease. Revista do Instituto de Medicina Tropical de São Paulo, 2002. v. 44. p. 1-160.
9. **SOUZA-NETO, J. A.,** LEMOS, F. J. A. Measurement of pH and chitinase activity throughout the *Aedes aegypti* larvae gut. In: XXX Annual Meeting of the Brazilian Society of Biochemistry and Molecular Biology, Caxambu, Brazil, 2001.
10. RUSSO, E. S., GUSMÃO, D. S., **SOUZA-NETO, J. A.,** LEMOS, V. P., LIMA, J. B. P., VALLE, D., LEMOS, F. J. A. Heme interaction with mosquito peritrophic matrix. In: XVII Annual

Meeting of the Brazilian Society of Protozoology and XXVIII Annual Meeting on Basic Research in Chagas Disease, Caxambu, Brazil, 2001.

11. **SOUZA-NETO, J. A.,** LEMOS, F. J. A. Chitinolytic activity: Putative midgut functional region in *Aedes aegypti* larvae. In: XVII Annual Meeting of the Brazilian Society of Protozoology and XXVIII Annual Meeting on Basic Research in Chagas Disease, Caxambu, Brazil, 2001.
12. GUSMÃO, D. S., **SOUZA-NETO, J. A.,** LEMOS, V. P., MATHIAS, L., VIEIRA, I. J. C., BRAZ-FILHO, R., LEMOS, F. J. A. Plant extracts inhibit chitinase activity and induce peritrophic matrix structural modifications in *Aedes aegypti*. In: XXIX Annual Meeting of the Brazilian Society of Biochemistry and Molecular Biology, Caxambu, Brazil, 2000.
13. LEMOS, V. P., **SOUZA-NETO, J. A.,** NOGUEIRA, F. B., RUSSO, E. S., LEMOS, F. J. A. The effect of plasm, trypsin, trypsin inhibitor and chitinase upon synthesis and passage of heme through *Aedes aegypti* peritrophic matrix. In: XVI Annual Meeting of the Brazilian Society of Protozoology and XXVII Annual Meeting on the Basic Research in Chagas Disease, Caxambu, Brazil, 2000.
14. **SOUZA-NETO, J. A.,** ABREU, T.A., GOMES, V. M., PIMENTA, P. F. P., LEMOS, F. J. A. Partial Purification of *Aedes aegypti* gut chitinase. In: XV Meeting of the Brazilian Society of Protozoology and XXVI Annual Meeting on Basic Research in Chagas Disease, Caxambu, Brazil, 1999.

Symposia attended/Oral presentations

- Invited professor at XII Laveran & Deane Seminar on Malaria (SL&D/Oswaldo Cruz Institute). Itacuruça, Brazil, 2007.
- Oral presentation at XX Annual Meeting of the Brazilian Society of Protozoology and XXXI Annual Meeting on Basic Research in Chagas Disease. Title of presentation: "Sugar digestion: characterization of involved enzymes and influence on *Anopheles aquasalis* (Diptera:Culicidae) mosquitoes longevity and fecundity". Caxambu, Brazil, 2004.
- Thesis presentation at VIII Laveran & Deane Seminar on Malaria. Title of presentation: "Biochemical and Molecular aspects of sugar digestion in *Anopheles aquasalis* mosquitoes". Itacuruça, Brazil, 2003. (Selected for presentation by event Committee – SL&D/Oswaldo Cruz Institute).

Invited Seminar Presentations

- *Sugar digestion and its implication on the life span of Neo-tropical anopheline mosquitoes*, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA. April, 2008.
- *General aspects of malaria,* Universidade do Sagrado Coração, Bauru, SP, Brazil. June, 2007.
- *Molecular diagnoses*, São Paulo State University, Botucatu, SP, Brazil. November, 2006.
- *Strategies for the control of mosquito-transmitted tropical diseases: from insecticides to molecular techniques.* Integrated Colleges of Avare, Avare, SP, Brazil. June, 2006.
- *Tropical diseases.* São Paulo State University, Botucatu, SP, Brazil, October, 2005.

Society Memberships

- Brazilian Society of Protozoology

Additional Training

2007 Training on Microarray technology. Technology Department, São Paulo State University, Jaboticabal, SP, Brazil.

2002 Colonization of *Anopheles aquasalis* mosquitoes under laboratory conditions, FIOCRUZ, Rio de Janeiro, RJ, Brazil.

2002 Liquid Chromatography in Äkta plataforms, GE Healthcare. UNESP, Botucatu, Brazil.

2001 Interactions between microorganisms and insect digestive systems. North Fluminense State University, Campos, RJ, Brazil.

Technical Expertise

Insect culture: maintenance of *Aedes aegypti*, *Anopheles aquasalis* and *Anopheles gambiae* in insectary conditions.

Cell and virus culture: maintenance of *Aedes aegypti* (Aag2) and *Aedes albopictus* (C6/36) cell lines and infection with dengue virus.

Molecular biology: PCR, cloning, construction of cDNA libraries, DNA sequencing, Real-time qPCR, Microarray analysis, RNAi gene silencing.

Biochemistry: Protein electrophoresis, protein purification using liquid chromatography, enzymatic assays, western blotting.

Microscopy: Light and Fluorescence microscopy.

Research Experience

2008- Molecular Microbiology & Immunology Department, Malaria Research Institute, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD.
Position: Postdoctoral Research Fellow.

2006-2007 Parasitology Department, Biosciences Institute, São Paulo State University, Botucatu, SP, Brazil.
Position: Postdoctoral Research Fellow.

2002-2006 Parasitology Department, Biosciences Institute, São Paulo State University, Botucatu, SP, Brazil.
Position: Graduate Student.

1998-2002 Biosciences and Biotechnology Center, North Fluminense State University, Campos, RJ, Brazil.
Position: Scientific Initiation Student.