

BIOGRAPHICAL SKETCH

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NAME: Thais de Almeida Pedrete

eRA COMMONS USER NAME: THAIS_PEDRETE

POSITION TITLE: Research Scholar

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	Start Date MM/YYYY	Completion Date MM/YYYY	FIELD OF STUDY
Santa Ursula University, Rio de Janeiro, Brazil	B.S.	03/2007	11/2010	Biological Sciences
Pontifical Catholic University of Rio de Janeiro, Brazil	M.Sc.	03/2011	04/2013	Chemistry
Oswaldo Cruz Foundation, Rio de Janeiro, Brazil	Ph.D.	08/2014	09/2018	Science
Rio de Janeiro State University	Postdoctoral scholar	12/2018	07/2021	Bioscience
Florida State University	Postdoctoral scholar	08/2021	Present	Biophysics

A. Personal Statement

My academic background includes a Bachelor's and License degree in Biological Sciences, completed in 2010 at Santa Ursula University, Master's degree in Chemistry, completed in 2013 at Pontifical Catholic University of Rio de Janeiro (PUC-Rio), and Doctorate in Public and Environment Health at National School of Public Health (ENSP) - Oswaldo Cruz Foundation, completed in September 2018. Since graduation, I have had the experience in laboratories with handling of environmental and human samples. The main areas of expertise are Analytical Chemistry, with emphasis on Mass Spectrometry and Environmental Chemistry, and Public and Environment Health, with emphasis on Molecular Biology. I worked as a coordination assistant at the Laboratory of Marine and Environmental Studies (LABMAM) at PUC-Rio, developing methodologies of molecular biomarkers and analytical methods by liquid and gas chromatography with mass spectrometry. I participated in training of proteomic techniques for sample preparation and analysis by mass spectrometry at the Proteomics Facility Core of the Central European Institute of Technology, Brno Czech Republic. I developed projects as a postdoctoral researcher (PNPD/Capes) in the Dept of Physiological Sciences (IBRAG/UERJ), identifying protein biomarkers for neurodegenerative diseases. Currently, I work with structural elucidation of proteins by ion mobility/mass spectrometry in the Dept of Chemistry and Biochemistry at Florida State University. I have good theoretical backgrounds and practical knowledge in the field of mass spectrometry and hyphenation techniques and their applications in proteomics.

B. Positions, Scientific Appointments and Honors**Positions**

2008-2010	Trainee, Department of Chemistry - Pontifical Catholic University of Rio de Janeiro, Brazil
2011-2013	Master Student, Department of Chemistry - Pontifical Catholic University of Rio de Janeiro, Brazil
2013	Lab Technician, Faculty of Oceanography - Rio de Janeiro State University, RJ, Brazil
2013-2014	Research Assistant, Department of Chemistry - Pontifical Catholic University of Rio de Janeiro, Brazil
2013-2014	Adjunct Professor, Faculty of Oceanography - Rio de Janeiro State University, RJ, Brazil
2014-2018	Doctorate Student – National School of Public Health - Oswaldo Cruz Foundation, Rio de Janeiro, Brazil
2016-2018	Guest Professor, Postgraduation Program in Public and Environment Health - Oswaldo Cruz Foundation, Rio de Janeiro, Brazil
2018-2021	Postdoctoral researcher, Department of Physiological Sciences - Rio de Janeiro State University, RJ, Brazil
2021-Present	Postdoctoral researcher, Department of Chemistry and Biochemistry – Florida State University, Tallahassee, FL

Scientific Appointments

2013	Student Mentoring, B.S. in Chemical Engineering, Pontifical Catholic University of Rio de Janeiro, Brazil
2014	Student Mentoring, B.S. in Chemistry, Pontifical Catholic University of Rio de Janeiro, Brazil
2018	Student Mentoring, B.S. in Chemistry, Federal Institute of Education, Science and Technology of Rio de Janeiro, Brazil
2016	Laboratory Training of proteomic techniques for sample preparation, analysis by mass spectrometry and data processing, Central European Institute of Technology, Masaryk University – Brno, Czech Republic

Honors

2009	English Language Instructor, CCAA
2011	Bachelor of Science, Biological Sciences, Santa Úrsula University
2013	Master of Science, Chemistry, Pontifical Catholic University of Rio de Janeiro
2015	Certificate of Achievement, TOEFL ITP
2018	Doctor of Philosophy, Science, Oswaldo Cruz Foundation
2021-2023	President, Postdoctoral Association, Florida State University, Tallahassee, FL
2022-Present	Member of the Editorial Board of the Advanced Chemicobiology Research (ACBR) - ISSN: 2810-9414 (Print) 2810-9422 (Online) – 2022
2023	Travel Professional Development Award, Office of Postdoctoral Affairs, Florida State University, Tallahassee, FL

C. Contributions to Science

Main Papers

CROPLEY, T. C., LIU, F. C., PEDRETE, T., HOSSAIN, MD A., AGAR, J. N., BLEIHOLDER, C. Structure Relaxation Approximation (SRA) for Elucidation of Protein Structures from Ion Mobility Measurements (II). Protein complexes. *Journal of Physical Chemistry B*, v. 127, n. 25, p. 5553–5565, 2023.

LIU, F.C.; KIRK, S.R; CALDWELL, K.A; PEDRETE, T.; MEIER, F.; BLEIHOLDER, C. Tandem Trapped Ion Mobility Spectrometry/Mass Spectrometry (tTIMS/MS) Reveals Sequence-Specific Determinants of Top-Down Protein Fragment Ion Cross Sections. *Analytical Chemistry*, v. 94, n. 23, p. 8146–8155, 2022.

PEDRETE, T.; ABREU-VILLAÇA, Y.; MANHAES, A.C. Mass Spectrometry Imaging for Alzheimer’s disease. 2022. A review manuscript submitted to the *Brazilian Journal of Medical and Biological Research*.

PEDRETE, T.; CARMO, J. O.S.; BARRETO, E.; MOREIRA, J.C. A preliminary study of the cytotoxicity of the protein extract of abajerú commercialized in markets. *Revista Fitos*, v.15, n.1, p. 11-21, 2021.

PEDRETE, T.A.; HAUSER-DAVIS, R.A.; PEREIRA, L.H.S.S; TORRES, M.B.; MOREIRA, J.C. Glutathione and metallothionein as oxidative stress biomarkers in the medicinal plant *Chrysobalanus icaco* L. from different Brazilian regions. *Journal of Plant Biology and Crop Research*, v.3, n.1, p.1015-1020, 2020.

PEDRETE, T.A.; HAUSER-DAVIS, R.A.; MOREIRA, J.C. Proteomic characterization of medicinal plants used in the treatment of diabetes. *International Journal of Biological Macromolecules*, v. 140, p. 294- 302, 2019.

PEDRETE, T.A.; COUTINHO, C.C.; BATISTA, D.; HAUSER-DAVIS, R. A.; NUDI, A.H.; WAGENER, A.L.R. Toxicity evaluation of PAHs in the sponge *Hymeniacidon heliophila*: field assessment and laboratory assays - a preliminary study. *Ecotoxicology and Environmental Contamination*, v. 12, p. 113-131, 2017.

PEDRETE, T.A.; MOTA, C.L.; GONÇALVES, E.S.; MOREIRA, J.C. Towards a personalized risk assessment for exposure of humans to toxic substances. *Cadernos Saúde Coletiva*, v. 24, p. 262-273, 2016.

BARATA, C.; PAVESI, T.; MITRI, S.; PEDRETE, T.; LIMA, C.; SAGGIORO, E.; MEYER, A.; MOREIRA, J. The setting of the leukemia in residents of metropolitan region of Rio de Janeiro state during the period 2006-2014. *Toxicology Letters*, v. 238, p. S376, 2015.

SETTE, C.B.; PEDRETE, T.A.; FELIZZOLA, J. F.; Nudi, A.H.; Scofield, A.L.; Wagener, A.L.R. Formation and Identification of PAHs Metabolites in Marine Organisms. *Marine Environmental Research*, v. 91, p. 2-13, 2013.

BATISTA, D.; TELLINI, K.; NUDI, A.H.; PEDRETE, T.; SCOFIELD, A. L.; WAGENER, A.L.R. Marine Sponges as Bioindicators of Oil and Combustion Derived PAH in Coastal Waters. *Marine Environmental Research*, v. 92, p. 234-243, 2013.

Book Chapter

PEDRETE, T.A.; MOREIRA, J.C. Biomarkers of Susceptibility for Human Exposure to Environmental Contaminants. In: Hauser-Davis, R.A.; Parente, T.E. (Org.). *Ecotoxicology: Perspectives on Key Issues*. 1ed.: CRC Press - Taylor & Francis Group, 2018, p. 251-280.

Main Presented Works in Events

PEDRETE, T.A.; LIU, F.C.; BLEIHOLDER, C. Conformational heterogeneity of top-down fragment ions analyzed by tandem-trapped ion mobility spectrometry/mass spectrometry (tTIMS/MS). XII Proteomics Workshop, online, 2023. Brazilian Center for Research in Energy and Materials. Lecture conferred.

PEDRETE, T.A.; CROPLEY, T.; LIU, F.C.; LEE, J.; BLEIHOLDER, C. Conformational heterogeneity of top-down fragment ions analyzed by tandem-trapped ion mobility spectrometry/mass spectrometry (tTIMS/MS). 71st ASMS Conference on Mass Spectrometry and Allied Topics, Houston, 2023. Lecture conferred.

PEDRETE, T.A.; LIU, F.C.; BLEIHOLDER, C. Top-down protein analysis by tandem-trapped ion mobility spectrometry/mass spectrometry (tTIMS/MS). XI Proteomics Workshop, online, 2022. Brazilian Center for Research in Energy and Materials. Lecture conferred.

PEDRETE, T.A.; LIU, F.C.; BLEIHOLDER, C. Top-down protein analysis using tandem-trapped ion mobility/mass spectrometry. 70th ASMS Conference on Mass Spectrometry and Allied Topics, Minneapolis, 2022.

PEDRETE, T.A.; TORRES, M. B.; HAUSER-DAVIS, R. A.; MOREIRA, J.C. Proteomic characterization of hypoglycemic plants and quality control. II Latin American Congress of Clinical and Laboratorial Toxicology, Porto Alegre, 2018.

PEDRETE, T.A.; BATISTA, D.; NUDI, A.H.; WAGENER, A.L.R.; HAUSER-DAVIS, R. A.; COUTINHO, C.C. Environmental assessment of the sponge *Hymeniacidon heliophila* (*Porifera halichondrida*) and use of biomarkers in the evaluation of toxicity of polycyclic aromatic hydrocarbons. 34th SETAC North America Annual Meeting, Nashville, 2013.

PEDRETE, T.P.; WAGENER, A.L.R.; BATISTA, D.; COUTINHO, C.C.; NUDI, A.H.; HAUSER-DAVIS, R.A. PAH in Marine Sponge: Bioaccumulation, Transformation and Exposure Biomarkers. 2nd International Conference on Environmental Pollution Restoration and Management, Hanoi, 2013.

PEDRETE, T.A.; SETTE, C.B.; FELIZZOLA, J.F.; NUDI, A.H.; VIEIRA, F.; SCOFIELD, A.L.; WAGENER, A.L.R. Identification of PAHs metabolites in marine organisms by APCI+ LC/MS/MS. 4^o Congresso Brasileiro de Espectrometria de Massas – BrMass, Campinas, 2011.

D. Courses

YEAR	COURSE TITLE	INSTITUTION
2012	Experimental Planning and Multivariate Analysis	Pontifical Catholic University of Rio de Janeiro, PUC-Rio.

YEAR	COURSE TITLE	INSTITUTION
2013	Human Health Risk Assessment: Fundamentals and Practice	Society of Environmental Toxicology and Chemistry - North America, SETAC, US
2014	JCI Accreditation Standards	Oswaldo Cruz Foundation
2014	Concepts and Routines of Biosafety	Oswaldo Cruz Foundation
2014	University Extension in Epidemiology and Public Health	Pontifical Catholic University of Rio de Janeiro
2016	Standard Operating Procedure: Identification, Storage and Handling of Chemicals	Oswaldo Cruz Foundation
2016	Workshop Advanced Topics in Proteomics	Oswaldo Cruz Foundation
2018	Certificate Program in Scientific and Technological Information in Health.	Oswaldo Cruz Foundation
2019	University Extension in Use and Management of Laboratory Animals.	University of São Paulo
2021-2023	Hazardous Waste Awareness and Laboratory Safety Training	Florida State University

E. Research Support

2018-2021 Postdoctoral Researcher. Scholarship: Coordination for the Improvement of Higher Education Personnel (CAPES) Postdoctoral National Program - process # 88882.315392/2019-01. Project: Mass Spectrometry Applied to Biomolecules: proteomics and metabolomics in experimental models in Neurophysiology and Endocrine Physiology.

2021-Present Postdoctoral Researcher. National Institutes of Health. Project: Study of structures and sequences of proteins by trapped ion mobility/ mass spectrometry methods.