

Juliana Alcoforado Diniz, PhD

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Nationality: Brazilian

Education and qualifications

2012-2016: PhD in Molecular Microbiology, Division of Molecular Microbiology, University of Dundee, UK
2010-2012: Master's in biotechnology, Centre of Biotechnology, Federal University of Pelotas, Brazil (Grade A)
2006-2010: Bachelor in Biological Science, Federal University of Pelotas, Brazil

Research Experience

Sep, 2022 **Associate Research Scientist & Lab manager**
Present The Robson Lab
The Jackson Laboratory, JGM Farmington, CT- USA
Main research activity: Molecular phenotyping, single cell, and metabolomics analysis of KOs in iPSCs later differentiated into extra-embryonic cells. Identification of senescent cells in human pancreas.

May, 2002 **Associate Research Scientist & Lab manager**
Sep, 2022 The Weinstock Lab
The Jackson Laboratory, JGM Farmington, CT- USA
Main research activity: Study the human microbiome and how its interaction with the host can contribute to health and different diseases.

April, 2021 **Postdoctoral Researcher**
Dec, 2021 Laboratory of Microbiota (UMR 1078)
Université de Bretagne Occidentale, Brest, France- Geneviève Héry-Arnaud
Main research activity: Pharmamicrobiomics of CFTR modulators in Cystic Fibrosis treatment

Jun, 2019- **Postdoctoral Research Associate**
Sep, 2020: Laboratory of Genetic of Microorganisms and Bacterial Pathogenesis
University of São Paulo, SP- Brazil- Jose Freire da Silva Neto
Main research activity: Analyze by a transposon library screening the genetic basis of biofilm formation in *Chromobacterium violaceum*

Oct, 2016- **Joint Postdoctoral Research Associate**
May, 2019 Laboratory of Molecular Parasitology, University of São Paulo, SP- Brazil- Angela Cruz
Department of Biology, University of York, UK- Pegine Walrad
Main research activity: Study the role of a protein arginine methyltransferase (PRMT7) in the differentiation and virulence of the parasite *Leishmania major*

Jun, 2018- *Visiting researcher at NIH, MD- USA*
Dec, 2018 David Sacks Lab

Mar, 2019- *Visiting researcher at Charles University, Prague- CZE*
April, 2019 Petr Volf Lab

Sep, 2012- **PhD in Molecular Microbiology**
Oct, 2016 School of Life Sciences, University of Dundee, UK- Sarah Coulthurst
Main research activity: Identify new toxins secreted by the Type VI secretion System of *Serratia marcescens*

Jan, 2011- **Master's Research Project**
Sep, 2012 Laboratory of Molecular Biology, Federal University of Pelotas, Brazil- Éverton Fagonde da Silva
Main research activity: Production and characterization of IgY for the early diagnosis and immunoprophylaxis of leptospirosis

Jan, 2007- **Scientific Initiation Project**
Dec, 2010 Laboratory of Applied Immunology, Federal University of Pelotas, Brazil- José Guimaraes Aleixo

Main research activity: Development of immunochemical and molecular tests for the diagnosis of Leptospirosis.

Technical Skills and Competences

Molecular Biology: DNA and RNA extraction and purification, PCR, RT-qPCR, RNA seq, Directed Mutagenesis, Cloning, Bacterial-two-hybrid, CRISPR-Cas9 gene editing, Fosmid library and insertional mutagenesis with transposons

Next Generation Sequencing: 16S library preparation using different techniques, such as: Shoreline and Mobio; sequencing using MiSeq and Oxford/Nanopore

Cellular Biology: extensive cell culture experience and macrophage differentiation from bone marrow cells

Applied Immunology: ELISA, Production of Monoclonal and Polyclonal Antibodies, Production of IgY from chicken, Flow-cytometry, Immunofluorescence

Microscopy: Confocal microscopy, Fluorescence microscopy (single cell bacterial analyses, including time lapse, using DeltaVision microscope)

Biochemistry: SDS-PAGE, Western Blot, basic protein over-production and purification (AKTA Prime), small-scale and native co-purification (co-IP and affinity purification)

Microbiology: General maintenance and phenotypic analysis of Gram-negative bacteria (particularly Enterobacteriaceae), genetic manipulation of bacteria (including allelic exchange mutagenesis, transformation, transduction), biofilm assays, co-culture and viability assays

Anaerobic bacterial culture: A two-months internship to learn how to grow bacteria and to work in anaerobic conditions

Parasitology: Maintenance of parasite cultures, Transfection and Sand fly infection

In vivo manipulation: Hamster, BALB/c mice, C57BL6 mice and sand fly

Computer: General software applications (including Microsoft Office, Endnote, Adobe Illustrator), CLC Workbench, specialist databases and analysis programs (e.g. PubMed, Expasy, KEGG, Jalview, Pymol and, i-TASSER)

Additional Skills

Leadership and Management: Planned, led and managed my own research projects; coached PhD and rotation students, as well as undergraduates and was involved in their day-to-day supervision; developed problem solving ability (experience trouble-shooting). Currently, I am responsible for the management of the Weinstock Lab and I am the mentor of a Summer Student at JAX SSP program.

Attention to detail: Accurate record keeping of experiments; use of checklists to organize my work and make sure that it is completed in a timely manner; peer reviewed scientific publications for the BJMBR and BJMI journals; reviewed manuscripts/grants of colleagues to judge the science and check their quality

Independence: Full responsibility to lead my research projects; identified new avenues for research, designed the projects and wrote the proposals independently; developed experimental assays that were new for the lab

Teamwork: Successful internal and external collaborations led to several publications, meetings with colleagues for progress reports as well as social events research; taught/learnt new techniques to/from colleagues

Communication: Delivered oral presentations at many conferences, some with up to hundreds of delegates; wrote scientific publications, fellowships and grant applications; videoconferencing; volunteered for outreach activities, such as “Magnificent microbes” and “Little scientist” to talk science with school kids and general public

Organization of events: Co-chair of the Postgraduate students in the College of Life Sciences committee, organizing talks with renowned researchers, social events and PhD student retreats. Involved in organizing the Young Microbiologists Symposium (UK) and the Symposium on Bacterial Pathogenesis and Host Response (Brazil)

Languages: Fluent in English; intermediate level of French and native speaker of Portuguese

Awards

2016: Travel Grant from the British Society for Antimicrobial Chemotherapy (BSAC)

2016: Nature Microbiology Review poster prize for Best Poster presentation in YMS. Dundee, UK **2015:** First place in Oral presentation in the PiCLS retreat. Dundee, UK

2015: ASM Student Travel Award, American Society of Microbiology.

2008: First place in Oral presentation in the XVII Congress of Scientific initiation. Pelotas, Brazil

Publications

Articles in Scientific Journals

1. **Diniz, J. A.**; Felix, S.R.; Raposo, J. B.; SeixasNeto, A. C. P.; Vasconcellos, F.A.; Grassmann, A. A.; Dellagostin, O. A.; Aleixo, J. A. G.; Silva, E.F. (2011) Highly virulent *Leptospira borgpetersenii* strain Characterized in the Hamster Model. *The American Journal of Tropical Medicine and Hygiene*, 85, 271-274.
2. Fritsch, M. J.; Trunk, K.; **Diniz, J. A.**; Guo, M.; Trost, M.; Coulthurst, S. J. (2013) Proteomic Identification of Novel Secreted Antibacterial Toxins of the *Serratia marcescens* Type VI Secretion System. *Molecular & Cellular Proteomics*, 12, 2735-2749.
3. **Alcoforado Diniz, J.**; Coulthurst, S. J. (2015) Intraspecies Competition in *Serratia marcescens* Is Mediated by Type VI-Secreted Rhs Effectors and a Conserved Effector-Associated Accessory Protein. *Journal of Bacteriology*, 197, 2350-2360.
4. **Alcoforado Diniz, J.**; Liu, Y.; Coulthurst, S.J. (2015) Molecular weaponry: diverse effectors delivered by the Type VI secretion system. *Cellular Microbiology*, 17, 1742-1751.
5. Cianfanelli, F.R.; **Alcoforado Diniz, J.**; Guo, M.; De Cesare, V.; Trost, M.; Coulthurst, S. J. (2016) VgrG and PAAR proteins define distinct versions of a functional Type VI secretion system. *PLoS Pathogens*. 12, 1-27.
6. Batista, J.H.; Leal, F.C.; Fukuda, T.T.H.; **Alcoforado Diniz, J.**; Almeida, F.; Pupo, M.T. and da Silva Neto, J.F. (2020), Interplay between two quorum sensing-regulated pathways, violacein biosynthesis and VacJ/Yrb, dictates outer membrane vesicle biogenesis in *Chromobacterium violaceum*. *Environ Microbiol*. doi:10.1111/1462-2920.15033.
7. **Alcoforado Diniz, J.**; Chaves, M.M.; Vaselek, S.; Miserani Magalhães, R.D.; Ricci-Azevedo, R.; de Carvalho, R.V.H.; Lorenzon, L.B.; Zamboni, D.; Walrad, P.B.; Volf, P.; Sacks, D.L.; Cruz, A.K. (2021) Protein methyltransferase 7 deficiency in *Leishmania major* increases neutrophil associated pathology in murine model. *Plos Negl Trop Dis* 15(3):e0009230. <http://doi.org/10.1371/journal.pntd.0009230>.
8. Ricci-Azevedo, R.; Mendonça-Natividade, F.C.; Santana, A.C; **Alcoforado Diniz, J.**; Roque-Barreira, M.C. (2021) Microneme Proteins 1 and 4 From *Toxoplasma gondii* Induce IL-10 Production by Macrophages Through TLR4 Endocytosis. *Front Immunol*. doi: 10.3389/fimmu.2021.655371.
9. Lorenzon L, Quilles JC, Campagnaro GD, Almeida L, Veras FP, Magalhães RDM, **Alcoforado Diniz J**, Ferreira, TR, Cruz, AK (2022) Functional study of *Leishmania braziliensis* protein arginine methyltransferases (PRMTs) reveals that PRMT1 and PRMT5 are required for macrophage infection. *ACS Infect. Dis*. doi: 10.1021/acscinfecdis.1c00509

Book Chapters

1. **Alcoforado Diniz, J.**; Hollmann, B.; Coulthurst, S. J. (2017) Quantitative determination of anti-bacterial activity during bacterial co-culture. In: *Bacterial Protein Secretion Systems. Methods in Molecular Biology*.
2. Fagundes, M. Q.; Silva, E.F.; **Diniz, J. A.** (2010), Considerations about ethics, well-being and biosafety. In: *Hamster as experimental animal*.

Selected international presentations and meetings:

1. **2016:**ASM General Meeting, Boston, USA, **Talk**
2. **2015:** ASM General Meeting, New Orleans, USA, **Poster**
3. **2014:** Young Microbiologists Symposium, Dundee, UK. **Poster**
4. **2010:** XLVI Congress of the Brazilian Society of Tropical Medicine. Foz do Iguaçu-PR. Brazil. **Talk**
5. **2008:** XVII Congress of Scientific Initiation. Pelotas, Brazil. **Talk** (First place)

References

Professor George Weinstock

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Professor Angela K. Cruz

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Dr Sarah J. Coulthurst

PhD Supervisor- University of Dundee, UK

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