



# Bruto Devoto, Tomás

Buenos Aires, Argentina

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## Education

### Doctorate in Science and Technology

Universidad Nacional de Quilmes

Buenos Aires, AR

Apr 2017 - (exp.) 2023

- Mycology - Bioinformatics - Nanotechnology - Molecular Biology.
- Azole Resistance Mechanisms in clinical and agro-industrial environment.
- Phylogeny - *Aspergillus spp.*, *Exophiala spp.*, *Scedosporium spp.*

### Bachelor of Biotechnology

Universidad Nacional de Quilmes

Buenos Aires, AR

Aug 2010 - Dec 2016

- Orientation in Genetic Engineering.
- Nitrogen fixing symbiosis.
- Actinorrhizal symbiosis - *Frankia spp.*

## Skills

**Scientific** Genetic transformation of microorganisms, Microbiology, Molecular Biology, Data Analysis, Genetic Analysis, Nanotechnology, Bioinformatics, Mycology, Fluorescence microscopy.

**Miscellaneous** R (tidyverse, ggplot2), **L<sup>A</sup>T<sub>E</sub>X** (Overleaf/R Markdown/Quarto), Microsoft Office/Google docs, Google Apps Script, Git/Github, Bash.

**Soft Skills** Strategic and analytical thinking, ability to adapt to the environment and change, teamwork, communication and presentation skills, ability to work under pressure with minimal or no supervision, handling of ambiguity and uncertainty.

## Professional Experience

### Mycology Research and Development Laboratory (LIDeMi); (IMPAM, CONICET - UBA)

Buenos Aires, Argentina.

PhD Student - CONICET

Apr 2017 - Current

- Molecular identification of fungal cryptospecies.
- Anti-fungal susceptibility studies based on international standardized guidelines (CLSI & EUCAST).
- Molecular characterization of azole's resistance mechanisms in *Aspergillus spp.*
- Build-up and curation of clinical fungal strains database.
- Phylogeny of filamentous fungi.
- Studies on Antarctic animals' fungal flora.
- Development of polymeric micelles capable of storing and sustainably releasing voriconazole in the lung.
- **Technical skills:** PCR, sequencing, bio-informatics, phylogeny, molecular biology techniques, microbiology, data analysis, micro y nano particles formulation.
- **Soft Skills:** Teamwork, communication skills, written and oral results' presentation, project management, organization of the work environment, planning, people training.

### Biological Interactions Research Laboratory (LIIB); Universidad Nacional De Quilmes

Buenos Aires, Argentina.

ESV scholarship

Sep 2013 - Aug 2015

- Study of the native actinorrhizal symbiosis that establishes nitrogen-fixing root nodules between *Frankia spp.* and *Discaria trinervis'* roots.
- Genetic transformation of roots by *A. rhizogenes*.
- **Technical skills:** Molecular biology techniques, microbiology, fluorescence microscopy, data analysis.
- **Soft Skills:** Teamwork, communication skills, written and oral results' presentation.

## Projects

### Studies on the diversity of fungal species from clinical samples of animals of the Antarctic fauna: potential impact on human health

Carlini station,

Antártida Argentina

Dirección Nacional del Antártico (DNA) - Instituto Antártico Argentino (IAA)

Jan 2019 - Mar 2019

- The aim was to contribute to the knowledge of the epidemiology of yeast-like and filamentous fungi isolated from different biological samples of Antarctic animals. Isolates were characterized by genomic sequencing.
- **Technical skills:** PCR, sequencing, bioinformatics, data analysis.
- **Soft Skills:** Teamwork, critical thinking, project organization and management, planning, development of written reports.

### Implementation and maintenance of the institute's website

Buenos Aires, AR

Instituto De Investigaciones En Microbiología Y Parasitología Médica (IMPAM)

Jun 2019 - Current

- Design and maintenance of the institute's website. Data collection using Google Forms and development of the institute's staff database.
- **Technical skills:** Google Forms, Google Docs, HTML, WordPress.
- **Soft Skills:** Teamwork, critical thinking, project organization and management.

## Talks and Conferences

### Antarctica, Fungi and Humans: A one world-one health concept

Bs.As., AR

Newland's Highschool

Nov 2020

- Talk for secondary school students organized by Newland's Highschool as part of the awareness week "Taking Care of Me to Take Care of You". The objective was to bring students closer to the world of research and inform them of key concepts such as "One World - One Health", Ecosystems and Mycology. .

### Aspergillosis - Overview and Diagnosis

Bs.As., AR

Veterinary school - University of Buenos Aires

Oct 2018

- Invited lecturer at a seminar for postgraduate students.

### Antifungals - Mechanisms and Resistances

Bs.As., AR

Veterinary school - University of Buenos Aires

Oct 2018

- Invited lecturer at a seminar for postgraduate students.

## Awards & Distinctions

- 2020 **Editor's Pick.** Distinction of Journal Antimicrobial Agents and Chemotherapy to the publication "A Novel Combination of CYP51A Mutations Confers Pan-Azole Resistance in *Aspergillus fumigatus*". EEUU
- 2019 **Best Research Work - XVI INFOCUS 2018.** Awarded at **VI Versión Reconocimiento a La Excelencia Académica e Investigación** of the Instituto Científico Pfizer de Colombia (ICPC) Bogota, Colombia
- 2018 **Best Basic Research Work.** Awarded at 16th INFOCUS. Cali, Colombia
- 2015 **Iberoamerican Santander Río Scholarship.** Academic merit-based scholarship to assist as an international student to the University of Málaga, Spain. Awarded by Santander Río Bank Bs.As., Argentina
- 2014 **Initiation to Research - ESV.** Academic merit-based scholarship awarded by Consejo Interuniversitario Nacional (CIN) Bs.As., Argentina
- 2013 **Encouragement to Scientific Vocations (ESV).** Academic merit-based scholarship awarded by Consejo Interuniversitario Nacional (CIN) Bs.As., Argentina

## Publications

### SCIENTIFIC ARTICLES

- Quantitative determination of voriconazole by thionine reduction and its potential application in a pharmaceutical and clinical setting  
María Florencia Ladetto, Juan Manuel Lázaro-Martínez, **Tomás Brito Devoto**, Víctor J. Briceño, Guillermo R. Castro, María Luján Cuestas  
*Analytical Methods* 15 (9 2023) pp. 1230–1240. Royal Society of Chemistry, 2023
- Exploring fungal diversity in Antarctic wildlife: isolation and molecular identification of culturable fungi from penguins and pinnipeds  
**T Brito Devoto**, M. A. Toscanini, K Hermida Alava, A. N. Etchecopaz, S. J. Pola, M. M. Martorell, M Ansaldo, J Negrete, L Ruberto, W Mac Cormack, M. L. Cuestas  
*New Zealand Veterinary Journal* (July 2022) pp. 1–18. Informa UK Limited, 2022
- Sporotrichosis caused by *Sporothrix brasiliensis* in Argentina: Case report, molecular identification and in vitro susceptibility pattern to anti-fungal drugs  
A. N. Etchecopaz, N. Lanza, M. A. Toscanini, **T. Brito Devoto**, S. J. Pola, G. L. Daneri, C. A. Iovannitti, M. L. Cuestas  
*Journal de Mycologie Medicale* 30 (1 Apr. 2020). Elsevier Masson SAS, 2020
- Antifungal susceptibility profile and molecular identification of Cyp51C mutations in clinical and environmental isolates of *Aspergillus flavus* from Argentina  
Katherine Hermida-Alava, **Tomás Brito Devoto**, Francisco Sautua, Manuela Gordó, Mercedes Scandiani, Norma Formento, Alicia Luque, Marcelo Carmona, María L. Cuestas  
*Mycoses* (Oct. 2020) myc.13193. 2020
- A Novel Combination of CYP51A Mutations Confers Pan-Azole Resistance in *Aspergillus fumigatus*  
Daiana Macedo, **Tomás Brito Devoto**, Santiago Pola, Jorge L. Finquelievich, María L. Cuestas, Guillermo Garcia-Effron  
*Antimicrobial Agents and Chemotherapy* 64 (8 May 2020). 2020
- Molecular epidemiology of *Aspergillus* species and other moulds in respiratory samples from Argentinean patients with cystic fibrosis  
**Tomás Brito Devoto**, Katherine Stefania Hermida Alava, Santiago J Pola, Rosana Pereda, Etelvina Ruboglio, Jorge L Finquelievich, María L Cuestas  
*Medical Mycology* 58 (7 Oct. 2020) pp. 867–873. 2020
- High prevalence of triazole-resistant *Aspergillus fumigatus* sensu stricto in an Argentinean cohort of patients with cystic fibrosis  
**Tomás Brito Devoto**, Katherine Hermida-Alva, Gladys Posse, Jorge L. Finquelievich, Guillermo García-Effrón, María L. Cuestas  
*Mycoses* 63 (9 Sept. 2020) pp. 937–941. 2020

### BOOK CHAPTERS

- Application in gene therapy and DNA/RNA vaccines  
María J. Limeres, María A. Toscanini, **Tomás Brito Devoto**, María F. Ladetto, Guillermo R. Castro, María L. Cuestas  
*Smart Nanomaterials for Bioencapsulation* (Jan. 2022) pp. 39–62. Elsevier, 2022
- Nanoparticle Formulations and Delivery Strategies for Sustained Drug Release in the Lungs  
María L. Cuestas, **Tomás Brito Devoto**, María A. Toscanini, María J. Limeres, Germán A. Islán, Guillermo R. Castro  
*Modeling and Control of Drug Delivery Systems* (Jan. 2021) pp. 273–300. Academic Press, 2021

## Languages

**English** Bilingual  
**Spanish** Native