

CURRICULUM VITAE

Sandra Isabel da Conceição Antunes

Personal information

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Present position

Junior researcher at the Global Health and Tropical Medicine/Institute of Hygiene and Tropical Medicine, Universidade Nova de Lisboa (GHTM/IHMT/NOVA);

Education

2016-2018: Post-doc at the Global Health and Tropical Medicine/Institute of Hygiene and Tropical Medicine, Universidade Nova de Lisboa (GHTM/IHMT/NOVA).

2009-2013: PhD in Biomedical Sciences, Parasitology by the Institute of Hygiene and Tropical Medicine, Universidade Nova de Lisboa (IHMT/NOVA).

2005-2007: MSc in Animal Biology by the Science and Technology Faculty of the Universidade de Coimbra.

2000-2005: BSc in Biology by the Science and Technology faculty of the Universidade de Coimbra.

I. RESEARCH ACTIVITIES

Participation in networks and scientific R&D projects

Since graduation I actively work in the writing and submission of Research & Development projects to different national and international agencies. Some examples follow.

- 2022-2024: PI of the project 2022.03176.PTDC: “*BabRed*: A toolbox to decipher the cross-talk between *Babesia ovis* and the host cell” Instituto de Higiene e Medicina Tropical.
- 2019-2021: Member of the PHC- Pessoa project: Role of tick immunity in vectorial competence and anti-parasitic activity. Instituto de Higiene e Medicina Tropical and UMR BIPAR, INRA, Ecole Nationale Vétérinaire d'Alfort, ANSES, Université Paris-EstMaisons-Alfort, France.
- 2018-2021: Co-PI of the project PTDC/CVT-CVT/29073/2017 “Exploring the tick-host interactome: on the path to vaccine development.” Instituto de Higiene e Medicina Tropical.

- 2018-2022: Member of the network “LaGar - Pautas de control químico y vacunal de las garrapatas del vacuno en américa latina” Cyted (Programa Iberoamericano de Ciência e Tecnologia para o Desenvolvimento). Ref: 118RT0542
- 2017-2020: Member of the project CNPq 421980/2016-8 “Proteômica e genômica funcional das interações entre *Rhipicephalus sanguineus* e *Ehrlichia canis* para o desenvolvimento de vacinas”

Courses and traineeship

To strengthen theoretical and practical knowledge in the areas in which I have been developing my research activities, as well as, to respond to the challenges of the projects I integrate / have integrated, I have attended several short-term courses.

- *April to May 2022*: Microcredential in distance and digital education: e-activities in courses design – Universidade Aberta
- *March to April 2022*: Microcredential in distance and digital education: network digital teaching – Universidade Aberta
- *December 2019*: Developing Supervisory Skills course (4th edition). NOVA Doctoral School. Reitoria da NOVA - Campus de Campolide, Lisboa, Portugal
- *June 2019*: Secure Insectary Experimental Methods-InfraVec2. The Pirbright institute, Pirbright, United Kingdom
- *June 2017*: Hands on course - Introduction to biological data analysis with R. Instituto de Investigação e Inovação em Saúde, Universidade do Porto. Vairão, Portugal
- *December 2016*: Phylogenetic and population genetic tools for vectors and vector-borne pathogens. EurNegVec, Training School. Instituto de Higiene e Medicina Tropical. Lisboa, Portugal
- *March 2012*: XI laboratory animal science course. FELASA C category. Faculdade de Medicina Veterinária. Universidade de Lisboa, Lisboa, Portugal
- *March 2012*: Transcriptome Assembly, Automatic Annotation and Data Mining. Instituto Gulbenkian de Ciência, Oeiras, Portugal
- *September 2009*: Introductory course to bioinformatics. Instituto Gulbenkian de Ciência. Oeiras, Portugal

Scientific production

To date I have authored or co-authored 32 poster presentations, 39 oral presentations and 39 international peer-review publications (Scopus h-index:14). Top 5 publications are presented. To access the full list please visit author ORCID: <https://orcid.org/0000-0002-5512-9093>

1. Torrejón, E.; Sanches, G.S.; Moerbeck, L.; Santos, L.; André, M.R.; Domingos, A.; Antunes, S. (2022) Molecular Survey of Bartonella Species in Stray Cats and Dogs, Humans, and Questing Ticks from Portugal. **Pathogens**, 11, 749. DOI: 10.3390/pathogens11070749

2. Couto, J.; Seixas, G.; Stutzer, C.; Olivier, N.A.; Maritz-Olivier, C.; Antunes, S.; Domingos, A. (2021) Probing the *Rhipicephalus bursa* Sialomes in Potential Anti-Tick Vaccine Candidates: A Reverse Vaccinology Approach. *Biomedicines*, 9, 363. DOI: 10.3390/biomedicines9040363
3. Sanches, G.S., Villar, M., Couto, J., Ferrolho, J., Fernández de Mera, I.G., André, M.R., Barros-Battesti, D.M., Machado, R.Z., Bechara, G.H., Mateos-Hernández, L., de la Fuente, J., Antunes, S. and Domingos, A (2021) Comparative proteomic analysis of *Rhipicephalus sanguineus* sensu lato (Acari: Ixodidae) tropical and temperate lineages: uncovering differences during *Ehrlichia canis* infection. **Front. Cell. Infect. Microbiol.** 10:611113. doi: 10.3389/fcimb.2020.611113
4. Antunes, S., Couto, J., Ferrolho, J., Sanches, G.S., Merino, O., de la Cruz-Hernández, N., Mazuz, M., Villar, M., Shkap, V., de la Fuente, J., Domingos, A. (2019). Transcriptome and proteome response of *Rhipicephalus annulatus* tick vector to *Babesia bigemina* infection. **Front.Physiol.** doi: 10.3389/fphys.2019.00318
5. Rosa, C., Asada, M., Hakimi, H., Domingos, A., Pimentel, M., Antunes S. (2019) “Transient transfection of *Babesia ovis* using heterologous promoters” **Tick Borne Dis.** doi: 10.1016/j.ttbdis.2019.101279

II. Teaching and Workshops

Despite presenting a research-oriented profile, the teaching activity is very present in my professional path, having integrated and taught in different masters and doctoral programs NOVA and, sporadically, in international programs such as *Produção de anticorpos monoclonais*. Master’s in Biotechnology, Universidade Eduardo Mondlane, Mozambique, *Genómica e proteómica aplicada a doenças Infeciosas; Genética da fármaco-resistência em parasitologia; Comunicação científica* (Master in Biomedical sciences and Medical Parasitology, IHMT/NOVA); *Investigação Translacional*. (TropikMan- PhD in Tropical Knowledge and Management, Nova School of Business and Economics, NOVA).

Mentoring activities

Mentor of students from different academic degrees ranging from bachelor to doctorate. I’m involved in the planning and execution of their work plans, in the preparation of their dissertations, activity reports and scientific articles. Presently, I’m supervising a PhD student. To access full list of mentoring activities please visit <https://www.cienciavita.pt/portal/8C17-220E-E297>

Conference organization

Throughout my career, I have organized conferences and workshops as well as developed pedagogic material for the purpose of scientific dissemination, both to the scientific community and to the general audience such as the conference: "*Deciphering tick-pathogen interactions towards human and animal health improvement*", IHMT/NOVA. Lisbon, Portugal or the publication of articles directed to kids and broad audiences: *Frontiers for young minds* "*The Secret Life Inside Ticks*". doi:10.3389/frym.2018.00035 (2018) e "*What makes your dog itch? There is a tick in the kennel!*" doi: 10.3389/frym.2017.00028 (2017).

III. Awards and fellowships granted for scientific merit

Awards

- 2019 - Best poster at Conference: Bioticks 2019. "The challenge of tick control". 1-4 December, Varadero, Cuba
- 2016 - Dik Zwart Award for best poster presentation AITVM-STVM Conference: Berlin, Germany
- 2015 – Excelency award Garcia de Orta. IHMT-NOVA
- 2015 - Award Professor Doutor Fraga de Azevedo. Best PhD student in Medical Parasitology. IHMT- NOVA

Fellowships

- 2016-2018: SFRH/BPD/108957/2015 financiada pela FCT com o projeto "A *system biology approach to the characterization of Tick and Tick-Borne Pathogen Interactions* "
- 2009-2013: SFRH/BD/48251/2008 financiada pela FCT com o projeto "*Differential expression and functional characterization of cattle tick genes in response to pathogen infection (Babesia bigemina)*."

IV. SCIENTIFIC EXPERTISE

Molecular biology: Expertise in most of the routine techniques such as, extraction of DNA and RNA of different samples types (blood, tissue, cell layers); PCR; Agarose gel electrophoresis; Quantitative PCR; Cloning; Expression and purification of proteins; Protein concentration determination; SDS-PAGE; Western blotting; ELISA;

Cell culture: Hybridoma technology. Production of monoclonal antibodies. Tick Cells.

Microscopy: Fluorescence microscopy.

Bioinformatics: Use of software for research in molecular biology; transcriptomics and proteomics analysis tools; Nucleotide sequence analysis (Blast); protein translation; use of public databases (GenBank, Uniprot). *Microsoft Office, SPSS, Statistica, Blast2Go*

Animal manipulation: Laboratory animal science course (FELASA C); Manipulation and dissection of ticks; Injection of ticks with micro-syringe and nano-injector; Artificial feeding of ticks with capillary tubes; Establishment of tick colonies;

Field research: Techniques for containment and collection of blood in birds in the field; Experience in bird catching, using vertical nets; Tick collection

Lab management: Familiar with the regulatory requirements specific to the lab and ensures all users are in compliance with those standards; Ensures all reagents and supplies are available when needed. Prepares budget requests and manages approved budget; Initiates purchases of equipment and supplies; maintains contact with vendors and searches commercial market to determine availability and cost of equipment/instruments to meet needs.

V. Languages

Portuguese- Native

English- Fluent (read, spoken and written)

Spanish- Good comprehension

French- Moderate comprehension

VI. Hobbies

- Reading;
- Hiking;