



UNIVERSIDADE
NOVA
DE LISBOA

MARIE SKŁODOWSKA-CURIE INDIVIDUAL FELLOWSHIPS 2018
EXPRESSION OF INTEREST FOR HOSTING MARIE CURIE FELLOWS

HOST INSTITUTION

Instituto de Higiene e Medicina Tropical | GHMT Research Unit

RESEARCH GROUP AND URL

GHMT – Global Health and Tropical Medicine
<http://ghmt.ihmt.unl.pt/>

SUPERVISOR (NAME AND E-MAIL)

Ana Gonçalves Domingos
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SHORT CV OF THE SUPERVISOR

Ana Gonçalves Domingos is a researcher at the Medical Parasitology unit, at the Institute of Hygiene and Tropical Medicine, Universidade Nova de Lisboa (IHMT/UNL), since 2010. She has a PhD in Biology by University of Lisbon (1997) and did the Habilitation in Biomedical Sciences – Parasitology, UNL (2011). Currently is teaching in MSc courses at IHMT and is invited professor at the University of Lurio, Mozambique. Last 5 years, she supervised 3 Post-Doc Fellows, 5 PhD students, 6 MSc students and several Grant holders and co-supervised 3 PhD students and 3 MSc students (University of Aveiro, Portugal and University of Eduardo Mondlane and University Lúrio, Mozambique). Since 2018, she participates in two Cyted projects included in the Ibero-american program for Science and Technology Development. Currently, she participates in two COST actions and is member of the management committee in one of them. Last 5 years (2012-2017), she participated in 7 (4, as PI) financed projects and during her carrier published 65 peer-reviewed papers, 3 books and 2 book chapters. Her research activities rely on a system biology approach using of methodologies such as proteomics, transcriptomics and functional genomics and is mainly centralized in the identification of vaccine candidates and drug targets in both parasites and vectors of diseases having a great human health and animal production impact such as malaria, babesiosis and theileriosis.

<http://www.ihmt.unl.pt/en/profiles/ana-goncalves-domingos/>

5 SELECTED PUBLICATIONS

- Antunes, S., Ferrolho, J., Couto, J., Rodrigues, F., Nobre, J., Santos, A. S., Santos-Silva, M. M., de la Fuente, J., Domingos, A. 2018. "Rhipicephalus bursa sialotranscriptomic response to blood feeding and Babesia ovis infection: identification of candidate protective antigens" *Front. Cell. Infect. Microbiol.* 8:116.
- Antunes S, Rosa C, Couto J, Ferrolho J, Domingos A. 2017. Deciphering *Babesia*-Vector Interactions. *Front Cell Infect Microbiol.* 2017; 7: 429.



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- Couto J., Antunes S., Pinheiro-Silva R., do Rosário V., de la Fuente V., Domingos A. 2017. Solute carriers affect *Anopheles stephensis* survival and *Plasmodium berghei* infection in the salivary glands". Sci. Reports. 7(1):6141.
- Ferrolho J., Antunes S., Sanches G. S., Couto J., Évora P. M., Rosa C., André M. R., Machado R. Z., Bechara G. H., Domingos A. 2017. Ferritin 1 silencing effect in *Rhipicephalus sanguineus sensu lato* (Acari: Ixodidae) during experimental infection with *Ehrlichia canis*. Ticks Tick Borne Dis. 8(1):174-184.
- de la Fuente J., Antunes S., Bonnet S., Cabezas-Cruz A., Domingos A. G., Estrada-Peña A., Johnson N., Kocan K. M., Mansfield K. L., Nijhof A. M., Papa A., Rudenko N., Villar M., Alberdi P., Torina A., Ayllón N., Vancova M., Golovchenko M., Grubhoffer L., Caracappa S., Fooks A. R., Gortazar C., Rego R. O. M. 2017. Tick-Pathogen Interactions and Vector Competence: Identification of Molecular Drivers for Tick-Borne Diseases. Front Cell Infect Microbiol. 7:114.

PROJECT TITLE AND DESCRIPTION

Exploring the vector-host interactome: on the path to vaccine development

Ticks and vector borne diseases are an increasing threat to human and animal health worldwide. Anti-tick vaccines are a cost-effective and environmentally friendly alternative control method through the reduction of vector infestations and ultimately reduction of pathogen transmission and infection. This project aims to bring new inclusive outputs on the molecular mechanisms that underlie vector-host interactions contributing to the development of a new generation of tick vaccines, a greatly desired commercial product. The strategy of the present proposal relies on the identification of tick sialoproteins by high-throughput omics-based data. Integration of proteomics, transcriptomics and immune-informatics will be followed by functional characterization and selected candidates will be screened in vaccination trials.

SCIENTIFIC AREA WHERE THE PROJECT FITS BEST

Life Sciences (LIF)