CURRICULUM VITAE

PERSONNAL INFORMATION

Name: **Márcia Melo Medeiros**
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SYNOPSIS OF THE SCIENTIFIC AND CURRICULAR PATH

During my PhD in Sciences, I combined medical and laboratorial expertise to identify the signature of humoral response of asymptomatic and symptomatic *Plasmodium falciparum* (*Pf*)-infected individuals, from Western Brazilian Amazon, against a large panel of recombinant *Pf*-peptides. The clinical protection conferred by the humoral response of asymptomatics against three of these target antigens was reported in a peer-reviewed journal (6). After the PhD, I started my international career in Portugal, as a postdoc at Instituto Gulbenkian de Ciência, on a project on immune regulatory mechanisms in *Plasmodium chabaudi* AS-infected mice. Combining different techniques, such as intra-vital microscopy, qRT-PCR, flow cytometry, immunofluorescence and cellular suppression assays with transgenic organisms, I reported the role of regulatory T cells in the liver to avoid exacerbated inflammatory reactions in a peer-reviewed journal (7). At Instituto de Medicina Molecular João Lobo Antunes, my second postdoc, I addressed the lack of sterile immunity to malaria in endemic settings, mimicking a natural infection in mice, mixing irradiated-*P. berghei* sporozoites, as the liver stage and infected-*P. yoelii* erythrocytes, as the blood stage. An immunosuppressive effect of the blood stage on specific $CD8^{+}$T cells targeted to the main sporozoite surface antigen was observed, partially dependent on the MyD88-TLR pathway (unpublished data). At IHMTNOVA, I have worked on MicroOPV project to verify the effect of Oral Poliomyelitis Vaccine on respiratory and gut microbiomes in Guinean infants (ongoing), in collaboration with the Bandim Health Project (BHP) in Guinea-Bissau and Statin Serum Institute in Denmark. Under MicroOPV project, I was co-author in a review paper about respiratory microbiome (3) and during the field work in Guinea-Bissau, I could initiate a collaborative work with researchers from IHMTNOVA, the University of São Paulo (Brasil), the University of Maryland Baltimore (USA), the National Institute of Health in Guinea-Bissau and the BHP, to address the role of low-density and clinical silent *Plasmodium falciparum* infections to malaria burden in Guinea-Bissau. As Principal Investigator, I applied two projects to address this question to "2nd Call for Proposals to increase Collaborative Research to Improve Quality of Life in AFRICA-AKDN Network" and to "Call for Scientific Research and Technology Development Project Grants-FCT 2020", in collaboration with the INASA-GB, BHP, University of São Paulo and University of Maryland-Baltimore. I have also combining research with teaching and supervision activities at IHMTNOVA.

EDUCATION

2018:

- Specialization in Travelers' Medicine, Instituto de Higiene e Medicina Tropical-Universidade Nova de Lisboa (IHMTNOVA), Portugal.

2007-2011:

- PhD in Sciences, Biology of Host-Pathogen Interaction Program at Department of Parasitology, Instituto de Ciências Biomédicas, Universidade de Sâo Paulo, Brasil. Equivalent to the PhD degree in Portugal, registered under the code 61/2015 at Universidade de Lisboa (UL), Portugal.

2001-2003:

- Specialization in Internal Medicine at Department of Internal Medicine, Hospital das Clínicas, Faculdade de Medicina-Universidade de São Paulo (FMUSP), Brasil, which was consisted in supervised internships at the Hospital Wards, Emergency Rooms and Intensive Care Units of several clinical departments of Hospital das Clínicas-FMUSP and Hospital Universitário-USP, resulting in an annually workload of 2880h including 24h weekly of medical shifts.

1993-1999:

- Medicine at Faculdade de Medicina, Universidade de São Paulo, Brasil. Equivalent to Mestrado Integrado em Medicina, Faculdade de Medicina, Universidade de Lisboa, Portugal.

CURRENT POSITION

2019 – present:

- PhD researcher at Global Health and Tropical Medicine Center-IHMTNOVA.

PREVIOUS POSITIONS

2017-2019:

- Postdoctoral researcher at Global Health and Tropical Medicine Center-IHMTNOVA.

2013-2016:

- Postdoctoral researcher at Malaria Unity, Instituto de Medicina Molecular João Lobo Antunes (IMM), Faculdade de Medicina-UL, Portugal.

2011-2012:

- Postdoctoral researcher at Cytometry and Image Unit, Instituto Gulbenkian de Ciência (IGC), Portugal.

2006-2009:

- Medical Generalist at Department of Clinical Emergency-Adults, Nove de Julho Hospital, São Paulo, Brasil.

2004-2006:

- Medical Researcher at Malaria Unity, Fundação Oswaldo Cruz (FIOCRUZ) Rondônia, Brasil.

2003:

- Medical Generalist at Family Health Brazilian Program, Primary Care Unit, Goiás, Brasil.

2000:

- Medical Generalist at Family Health Brazilian Program, Primary Care Unit, Ceará, Brasil.

EMPLOYMENT CONTRACTS

2019-present:

- Scientific employment as a PhD researcher on the project “When the host cell is not so cosy anymore...A drop off in energy or an increase in toxicity?"(PTDC/BIA-CEL/28456/2017, Fundação Ciência e Tecnologia (FCT), Portugal). Principal Investigator and supervisor: Ana Paula Arez, PhD.

2006-2009:

- Service agreements, Nove de Julho Hospital, São Paulo, Brasil.

2004-2006:

- Scientific employment as a Medical Researcher on the project "Effect of *Plasmodium falciparum* infection on erythrocytic lineage in the Bone Marrow" at Malaria Unity, Fundação Oswaldo Cruz (FIOCRUZ) Rondônia, Brasil. Supervisor: Luiz Hildebrando Pereira da Silva, MD, PhD.

2003:

- Service agreements, Family Health Brazilian Program, Primary Care Unit, Goiás, Brasil.

2000:

- Service agreements, Family Health Brazilian Program, Primary Care Unit, Ceará, Brasil.

FELLOWSHIPS

2017-2019:

- Postdoctoral fellowship at IHMTNOVA on the project "Effect of Oral Polio Vaccine on respiratory and gut microbiomes in Guinean infants" (UID/Multi/04413/2013, FCT, Portugal). Principal Investigator and supervisor: Miguel Lanaspa, MD, PhD.

2013-2016:

- Postdoctoral fellowship at IMM on the project "Host-Plasmodium interactions: a tale of sensing and being sensed" (EXCL/IMIMIC/0056/2012, FCT, Portugal). Principal Investigator and supervisor: Maria Manuel Mota, PhD.

2011-2012:

- Postdoctoral fellowship at IGC on the project "Role of regulatory T cells in the rodent malaria model of *Plasmodium chabaudi* infection", supported by "Science Without Boundaries Program", number 5677/11-4, Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Ministério da Educação, Brasil. Principal Investigator and supervisor: Carlos Eduardo Tadokoro, PhD.

2006-2011:

- PhD fellowship on the project "Perfil da resposta imune humoral de pacientes sintomáticos e assintomáticos para malária falciparum, da Amazônia Ocidental Brasileira, contra antígenos polimórficos exportados para a superfície da hemácia infectada e antígenos expressos no merozoíto – PhD thesis" supported by Fundação para o Amparo à Pesquisa do Estado de São Paulo (FAPESP), number 06/56241-2, Brasil. Supervisor: Gerhard Wunderlich, PhD.

2001-2003:

- Internal Medicine fellowship supported by Fundação para o Desenvolvimento Administrativo (FUNDAP), São Paulo Government, Brasil.

SCIENTIFIC PRODUCTION

Articles with PhD Supervisor	6
Articles without PhD Supervisor	3
Conference papers	1
Book chapters	1
Participation at national meetings	5
Participation at international meetings	1

Invited speaker at national meetings	2
Arguer at thesis defence	1 (Master)
Gene sequences added to GenBank	28
PhD Researcher score	16.39
h-index score	4

PUBLICATIONS

Book chapters

1. Lanaspa, Miguel; Medeiros, Márcia Melo. 2017. "Microbioma respiratório saudável: um projeto inovador na primeira coorte de nascimento em Angola". In In Anais do Instituto de Higiene e Medicina Tropical, Equidade na Investigação em Saúde para o Desenvolvimento - Suplemento 2, S113-S117. Portugal. https://doi.org/10.25761/anaisihmt.65.

Papers in peer-reviewed journals:

1. Cabral, Fernanda J, Vianna, Luciana G, Medeiros, Marcia M, Carlos, Bianca Cechetto, Martha, Rosimeire D, Silva, Nadia Maria, Silva, Luiz Hildebrando P da, Stabeli, Rodrigo G, & Wunderlich, Gerhard. (2017). Immunoproteomics of Plasmodium falciparum-infected red blood cell membrane fractions. *Memórias do Instituto Oswaldo Cruz*, *112*(12), 850-856. https://dx.doi.org/10.1590/0074-02760170041 (Cited 2)
2. Macedo-Silva T, Araujo RBD, Meissner KA, Fotoran WL, Medeiros MM, de Azevedo MF, et al. (2017) Knockdown of the *Plasmodium falciparum* SURFIN4.1 antigen leads to an increase of its cognate transcript. PLoS ONE 12(8): e0183129. https://doi.org/10.1371/journal.pone.0183129 (Cited 1)
3. Miguel Lanaspa, Quique Bassat, Marcia Melo Medeiros & Camen Muñoz-Almagro (2017) Respiratory microbiota and lower respiratory tract disease, Expert Review of Anti-infective Therapy, 15:7, 703-711, https://doi.org/10.1080/14787210.2017.1349609 (Cited 10)
4. Fotoran WL, Santangelo RM, Medeiros MM, et al. Liposomes loaded with P. falciparum merozoite-derived proteins are highly immunogenic and produce invasion-inhibiting and anti-toxin antibodies. Journal of Controlled Release: Official Journal of the Controlled Release Society. 2015 Nov; 217:121-127.; https://doi.org/10.1016/j.jconrel.2015.08.045 (Cited 4)
5. Fratus, Alessandra Sampaio Bassi, Cabral, Fernanda Janku, Fotoran, Wesley Luzetti, Medeiros, Márcia Melo, Carlos, Bianca Cechetto, Martha, Rosimeire dalla, Silva, Luiz Hildebrando Pereira da, Lopes, Stefanie Costa Pinto, Costa, Fabio Trindade Maranhão, & Wunderlich, Gerhard. (2014). Antibody recognition of Plasmodium falciparum infected red blood cells by symptomatic and asymptomatic individuals in the Brazilian Amazon. *Memórias do Instituto Oswaldo Cruz*, *109*(5), 598-601. Epub August 05, 2014. https://doi.org/10.1590/0074-0276140027. (Cited 3)
6. Medeiros, M.M., Fotoran, W.L., dalla Martha, R.C. *et al.* Natural antibody response to *Plasmodium falciparum* merozoite antigens MSP5, MSP9 and EBA175 is associated to clinical protection in the Brazilian Amazon. *BMC Infect Dis* 13, 608 (2013). https://doi.org/10.1186/1471-2334-13-608 (Cited 21)
7. Medeiros MM, Silva HBd, Reis AS, Barboza R, Thompson J, Lima MRD, et al. (2013) Liver Accumulation of *Plasmodium chabaudi*-Infected Red Blood Cells and Modulation of Regulatory T Cell and Dendritic Cell Responses. PLoS ONE 8(11): e81409. https://doi.org/10.1371/journal.pone.0081409 (Cited 14)
8. Mariuba, Luis Andre, Orlandi, Patricia Puccinelli, Medeiros, Márcia, Holanda, Rudson, Grava, Andrea, & Nogueira, Paulo Afonso. (2008). Improving the production of the denatured recombinant N-terminal domain of rhoptry-associated protein 2 from a Plasmodium falciparum target in the pathology of anemia in falciparum malaria. *Memórias do Instituto Oswaldo Cruz*, *103*(6), 522-527. https://doi.org/10.1590/S0074-02762008000600002 (Cited 1)

Papers in conferences:

9. **Márcia M. Medeiros**, Catarina Castineiras, Gerhard Wunderlich. (2009) Expression of recombinant proteins from trophozoites and merozoites of Plasmodium falciparum isolates from Brazilian Amazon and immune

response analysis. The American Journal of Tropical Medicine and Hygiene November 2009 vol. 81 no. 5 Suppl 1 51-100. http://www.ajtmh.org/content/81/5_Suppl_1/51.short DOI: https://doi.org/10.4269/ajtmh.2009.81.51

PRESENTATIONS

Oral presentations:

1. HEALTH PROBLEMS DURING AND AFTER TRAVEL: A STUDY IN TRAVELERS ATTENDING AT THE IHMT'S TRAVEL C*LINIC. Encontro CIÊNCIA 2018, Centro de Congressos de Lisboa, Lisboa, Portugal, 2018.*
2. PLASMODIUM FALCIPARUM MEROZOITE ANTIGENS ASSOCIATED TO PROTECTION FROM NATURALLY ACQUIRED IMMUNE RESPONSE IN THE BRAZILIAN AMAZON. XXVII Reunião Anual da Sociedade Brasileira de Protozoologia XXXVIII Reunião Anual sobre Pesquisa básica em Doença de Chagas. Brasil, 2011.

Posters:

1. MEDEIROS, MM; Fotoran, WL; Dalla-Martha, R; Wunderlich, G. PLASMODIUM FALCIPARUM MEROZOITE ANTIGENS ASSOCIATED TO PROTECTION FROM NATURALLY ACQUIRED IMMUNE RESPONSE IN THE BRAZILIAN AMAZON. XXVII Reunião Anual da Sociedade Brasileira de Protozoologia XXXVIII Reunião Anual sobre Pesquisa básica em Doença de Chagas. Brasil, 2011.
2. MEDEIROS, MM; Fotoran, WL; Dalla-Martha, R; Wunderlich, G. HUMORAL IMMUNE RESPONSE AGAINST Plasmodium falciparum MEROZOITE SURFACE PROTEINS MSP2, MSP3, MSP5 IS ASSOCIATED WITH ASYMPTOMATIC INFECTIONS IN WESTERN BRAZILIAN AMAZON. In: XII Reunião Nacional de Pesquisa em Malária, 2010, Ouro Preto. Poster, 2010.
3. MEDEIROS, MM.; Castineiras, C ; Wunderlich, G . Expression of recombinant proteins from trophozoites and merozoites of Plasmodium falciparum isolates from Brazilian Amazon and immune response analysis. In: American Society of Tropical Medicine and Hygiene 58th Annual Meeting, 2009, Washington, DC.
4. MEDEIROS, MM; Wunderlich, G. Expression of recombinant SURFIN proteins of *Plasmodium falciparum* isolates from Brazilian Amazon and immune response analysis. In: XXIV Meeting of the Brazilian Society of Protozoology XXXV Annual Meeting on Basic Research in Chagas Disease, 2008, Águas de Lindóia.
5. MEDEIROS, MM; Wunderlich, G. Analysis of surf gene family in *Plasmodium falciparum* field isolates. In: XXIII Meeting of the Brazilian Society of Protozoology XXXIV Annual Meeting on Basic Research in Chagas Disease, 2007, Caxambu.

SUPERVISION ACTIVITIES

2020:

- One undergraduate student of Faculty of Sciences and Technology of The University Nova de Lisboa (FCT-NOVA) - Course Unit "Project in Molecular and Cellular Biology", under PLASMDPG project**,** IHMTNOVA.

2019:

- Summer volunteer internships at IHMTNOVA: two undergraduate students from Molecular and Cellular Biology course, FCT-NOVA.
- Ciência Viva no Laboratório at IHMTNOVA: "Fever, chills and body aches? Is it malaria? How to find the hidden parasite!" a theoretical-practical summer internship for high school students.
- Two Master students of "Master in Biomedical Sciences" program, under PLASMDPG project, IHMTNOVA (co-supervision).

2014:

- One Master student from University of Groningen, Netherlands through Erasmus Program at IMM, UL.

2013:

- One undergraduate student from Cabo Verde through Fundação Calouste Gulbenkian, Summer School Program at IMM, UL.

2001-2003:

- Several undergraduate students from The University of São Paulo Medical School, Brasil.

TEACHING ACTIVITIES

2019:

- Immunology classes for Master students, as part of the "Master in Biomedical Sciences" program IHMTNOVA,
- Immunology lecture "Host Immune Response to Malaria Infection" for Master students of "Master in Tropical Health" program, IHMTNOVA.

2018:

- "Vaccines and Immunization" tutoring session, as part of the "PhD in Human Genetic and Infectious Disease" program, IHMTNOVA,
- Immunology lecture "Immune response to malaria infection in endemic areas: from the asymptomatic status to the lack of sterile immunity" for Master students of the "Master in Biomedical Sciences" and "Master in Tropical Health" programs, IHMTNOVA.

2017:

- Immunology classes for Master students, as part of the "Master in Biomedical Sciences" program IHMTNOVA.

2010:

- Laboratorial practice and theoretical teaching of Parasitology for undergraduate students of Dental Medicine, Faculdade de Odontologia, Universidade de São Paulo, Brasil

ARGUER

2015:

- Master thesis "Avaliação da eficácia da vacina contra malária placentária em modelo experimental"(*Evaluation of the efficacy of placental malaria vaccine in experimental model*), Department of Animal Biology, Faculdade de Ciências, Universidade de Lisboa.

CERTIFICATES

- **2012**: FELASA, category B
- **2003**: Advanced Cardiac Life Support–ACLS, Advanced Trauma Life Support - ATLS
- **2001**: Advanced Cardiac Life Support - ACLS

MEMBERSHIP OF SCIENTIFIC SOCIETIES

- **2017**: Member, Portuguese Medical Association, Portugal – able to practice Medicine autonomously in Portugal
- **2007**: Member, Brazilian Society of Protozoology, Brasil
- **2006**: Member, Brazilian Society of Internal Medicine, Brasil
- **1999**: Member, Brazilian Medical Association, Brasil

MAJOR COLLABORATIONS

- **Ana Paula Arez,** PhD, Global Health and Tropical Medicine, IHMT, UNL, Portugal.
- **Miguel Lanaspa,** MD, PhD**,** Global Health and Tropical Medicine, IHMT, UNL, Portugal.
- **Henrique Silveira,** PhD, Global Health and Tropical Medicine, IHMT, UNL, Portugal.
- **Marcelo Urbano Ferreira**, MD, PhD, Department of Parasitology, Instituto de Ciências Biomédicas, Universidade de São Paulo, Brasil.
- **Amabélia Rodrigues**, PhD, Instituto Nacional de Saúde da Guiné-Bissau e Projecto de Saúde Bandim, Guiné-Bissau.
- **Joana Carneiro**, PhD, University of Maryland-Baltimore, USA.
- **Gerhard Wunderlich**, PhD, Department of Parasitology, Instituto de Ciências Biomédicas, Universidade de São Paulo, Brasil.
- **Cláudio Romero Farias Marinho**, PhD, Department of Parasitology, Instituto de Ciências Biomédicas, Universidade de São Paulo, Brasil.
- **Carlos Eduardo Tadokoro**, PhD, Immunobiology laboratory, Universidade Vila Velha, Espírito Santo, Brasil.