

Post-doctoral position in Plasmodium genomics/transcriptomics in Montpellier University, France

*****This position is only open to individuals from Low and Middle-Income Countries*****

Summary

- LMIC Candidate with a PhD in Omics data analysis
- 1-year contract, with possible extension
- Main project: Data analysis of *P. falciparum* genomes and transcriptomes from field isolates

OUR RESEARCH

Malaria kills half a million children a year, yet in endemic areas most *Plasmodium falciparum* infections remain asymptomatic. The goal of our research is to understand the genomic and transcriptomic mechanisms that enable *P. falciparum* to establish a chronic, asymptomatic, infection in humans. We test *in vitro*-based hypotheses on field isolates collected in malaria endemic countries. More specifically, we characterise how the parasite escapes the immune system by regularly switching its surface antigens. More details can be found in our recent [Trends In Parasitology](#) Opinion ([video summary](#) and [Open Access copy](#)).

YOUR PROJECT

With colleagues at the London School of Hygiene & Tropical Medicine, Texas Biomed (USA) and at the Sanger Institute (UK), we are sequencing parasite field isolate genomes, transcriptomes and single-cell transcriptomes. Various dry-lab projects are available, the exact research question will be defined based on the candidate expertise:

- Long-read sequencing data analysis (Nanopore versus PacBio) from *P. falciparum* clinical isolates
- Phylogenetic analysis of variant surface antigens (*var*, *rif*, *stevor*) from newly assembled *P. falciparum* genomes
- Parasite population genetic diversity in Cameroon and Ghana.
- Qualitative and quantitative assessment of variant surface antigen expression from single-cell RNAseq data from symptomatic versus asymptomatic parasite isolates. The ultimate goal is to identify host & parasite biomarkers predicting the outcome of a malaria infection (symptomatic vs asymptomatic).

You will also interact with our immunologist collaborators in Marseille and Toulouse. Based on your progress, there is an opportunity for a further 1-year contract.

YOUR SKILLS

- Training in biostatistics/bioinformatics, or in molecular biology with demonstrated experience in Omics data analysis
- Knowledge of population genetics and/or phylogenetics is a plus
- Able to work independently
- Great communication skills in English
- Stay focused on answering a specific biological question, from the initial analysis to publication
- Passionate about scientific discoveries
- Other desirable skills: knowledge about malaria biology, willing to occasionally supervise a Master student, participate actively in the lab and institute life.

WHO WE ARE

[Antoine Claessens](#) (PI) is a malariologist who trained at Edinburgh University, the Sanger Institute, LSHTM and the MRC-Gambia. He joined Montpellier University in 2018 as a "Chargé de Recherche INSERM" and leads an FRM team,

currently consisting of three post-doc, one research assistant and one permanent engineer. This position will be funded by InfectioPole Sud.

WHAT WE CAN OFFER

You will closely interact with mathematicians and computer scientists of the systems biology team from [LPHI](#), with experienced bioinformaticians from the bioinformatics [platform](#) and with population geneticists from [MIVEGEC](#). Both 'UMR' are very international, with highly competent and friendly scientists. More generally, Montpellier is a large hub for research in Life Sciences, particularly in the field of evolutionary biology. Being able to speak French is not a requirement.

You will join a young and dynamic team. I will try my best to transmit my passion about *P. falciparum* biology; you might find yourself dreaming about *var* genes too. You are welcome to bring your own side projects if you wish. Perks include Mediterranean climate, food and landscape.

Interested in applying? Please send an email to antoine.claessens@umontpellier.fr

This position will remain open until a suitable candidate is found. Starting date around the 1st June 2025 (to be discussed).