

Job Vacancy : PhD position (through fellowship application)

Location : Barcelona Centre for International Health Research (CRESIB, Hospital Clínic-Universitat de Barcelona) in its laboratories at the Centre Esther Koplowitz.

Reports to : Alfredo Mayor

Duration : 3 years

Starting date : Depending on timing of application/resolution fellowships

Description:

The Barcelona Institute for Global Health, ISGlobal, is the fruit of an innovative alliance between academic, government, and philanthropic institutions to contribute to the efforts undertaken by the international community to address the challenges in global health.

ISGlobal is looking for an enthusiastic, organized and autonomous PhD student who is interested in applying for a grant to develop the PhD project in the context of studies on molecular mechanisms involved in severe malaria in children and pregnant women.

1-According to the Global Strategy for Malaria 2016-2030 of the World Health Organization, all countries can accelerate efforts towards elimination through combinations of interventions adapted to local contexts. Such efforts require precise metrics to monitor trends in malaria transmission, resistance levels and clinical impact of residual infections. Pregnant women are a potential sentinel surveillance group because of their susceptibility to malaria and easy access through antenatal clinics. The aim of the master research offered here is to provide epidemiological and molecular evidences of the value of pregnant women attending health centers to generate estimates of the burden of malaria and its adverse consequences in situations of different transmission levels. To do this, the candidate will apply molecular techniques to describe the epidemiology of malaria infections, including patterns of antimalarial resistance, and develop Luminex-based assays to measure biomarkers of malaria exposure during pregnancy that can be used as surrogates for malaria transmission. Biological samples have been collected in prospective observational studies conducted among pregnant women attending health centres in southern Mozambique. The project will require statistical analysis of the data generated to compare metrics of malaria burden and transmission in clinics from Southern Mozambique with different levels of malaria transmission. By this way, the project will contribute to apply the knowledge gained on malaria during pregnancy to the development of new tools for the epidemiological surveillance of malaria as well as to malaria elimination activities currently being deployed in Southern Mozambique.

Una iniciativa de:



2-Plasmodium falciparum severe malaria (SM) is suggested to primarily result from microcirculatory dysfunctions triggered by the extensive sequestration of infected erythrocyte (iEs) in the microvasculature. *P. falciparum* sequestration is mediated by the adherence of mature forms of *P. falciparum* iEs to host receptors expressed on the endothelium lining host capillaries, on uninfected erythrocytes to form rosettes and on platelets to form platelet-mediated clumps. Based on a previous study on SM conducted in Southern Mozambique, we have demonstrated that *P. falciparum* isolates derived from infected individuals exhibits a wide range of binding affinities to numerous host receptors such as intercellular adhesion molecule ICAM-1, CD36 and C1QBP/gC1qR, being the latter associated with SM. Endothelial protein C receptor (EPCR) has also been involved as a critical cytoadhesion phenotype in other studies. Cytoadhesion is mediated by the *P. falciparum* erythrocyte membrane protein 1 (PfEMP1), a family of large and highly polymorphic proteins, encoded by about 60 *var* genes per haploid genome and expressed on the surface of infected erythrocytes. The specific objective of this project is to determine the interplay between the *var* transcription profile of *P. falciparum* field isolates, host immunological and inflammatory responses, and the clinical phenotype of the infection (severe versus mild malaria), with the aim of identifying differentially-expressed parasite genes, and assess their contribution to systemic inflammation. Such molecules could serve as potentially important targets for intervention (i.e., vaccination or antiadhesion therapies).

Main duties and tasks:

- Apply for PhD grants.
- Develop parasitological and molecular techniques at ISGlobal's laboratory.
- Analyse and prepare manuscripts presenting results obtained during the research.
- Develop a thesis on the main topic of the project.

Minimum requirements

- Degree in Biotechnology, Biochemistry, Biology or similar areas.
- Good English level
- Self-motivation, eagerness to grow professionally and commitment to self-development
- Basic training in lab work
- Ability to establish and maintain a good working relationship with people of different national and cultural backgrounds.
- Computer skills (Windows, Microsoft Office, Statistics and Bioinformatics) are also of value.
- The selected candidate will need to apply for a pre-doctoral fellowship. For this reason, only candidates with **average degree qualifications above 2.2 in the 0-4 scale** will be considered.

How to apply:

Applicants must send a CV and a cover letter and passport copy by email to job@isglobal.org, with the subject heading **PhD Molecular Mal** The closing date for the receipt of applications is **29/12/2017**.

Applications will be accepted until 17.00 CET of the closing date.

Only shortlisted candidates will be contacted

In ISGlobal we are committed to maintaining and developing a work environment in which the values and principles of our organization are respected and equal opportunities between women and men be promoted in each of the areas in which we operate, not tolerating discrimination based on criteria such as age, sex, marital status, race, ethnicity, disabilities, political leanings, religion or sexual orientation. "In accordance with articles 5 and 6 of Law 15/1999 on personal data protection, we inform you that your personal data will be incorporated into a Human Resources file, for which the Private Foundation Barcelona Institute for Global Health (ISGlobal) is responsible. If you do not inform us otherwise, ISGlobal will understand that you have consented to the processing of your data. Your information will not be disclosed to individuals or legal public or private entities without your consent unless authorized by law. You can exercise your rights to access, rectify, cancel and oppose the use of your personal information by contacting ISGlobal by post at C/Rosselló, 132, 5è 2a and 7è, 08036 - Barcelona or by email at info@isglobal.
