

The Institute of Tropical Medicine in Antwerp

is one of the world's leading institutions for education and research in tropical medicine (including AIDS), travel medicine and health care development in developing countries.

We are looking for a:

Researcher in Single Cell Genomics

Department of Biomedical Sciences – Unit of Molecular Parasitology

The Institute of Tropical Medicine (ITM) is internationally recognized as a center of excellence for education, research and service delivery in the field of tropical infectious diseases. The Unit of Molecular Parasitology (led by Prof. Dr. Jean-Claude Dujardin) is exploring the genome diversity of several *Leishmania* species^{1,2,3} in both clinical and experimental contexts. In collaboration with the Sanger Institute and the KU Leuven, we aim to (i) develop and validate protocols for enrichment and sequencing of whole *Leishmania* genome and transcriptome from pooled and single cells, isolated directly from clinical samples and (ii) apply these methods to characterise the inter- and intra-host parasite diversity, with a special emphasis on genome dynamics of gene dosage.

¹ Downing T et al. Whole genome sequencing of multiple *Leishmania donovani* clinical isolates provides insights into population structure and mechanisms of drug resistance. *Genome Res.* 2011 Dec;21(12):2143-56. ² Mannaert A et al. Adaptive mechanisms in pathogens: universal aneuploidy in *Leishmania*. *Trends Parasitol.* 2012 Sep;28(9):370-6. ³ Dujardin JC et al. Mosaic aneuploidy in *Leishmania*: the perspective of Whole Genome Sequencing. *Trends in Parasitology*, in press.

Assignment

- Coordinate the collection of experimental and clinical samples needed for the study.
- Establish the proof-of-principle of a method allowing direct sequencing of whole genomic DNA and cDNA of intracellular parasites (i) in pooled macrophages, (ii) in single macrophages and (iii) in single intracellular parasites.
- Collaborate with bio-informaticians for the development, validation and application of the relevant methods for genome diversity calling (SNPs, indels, ploidy and CNVs).
- Apply these methods to the study of experimental and clinical samples and integrate the results to generate a model of inter- and intra-host parasite population diversity.
- Interact with colleagues working on the systems biology of the parasites (metabolomics, proteomics).
- Develop your own research projects and apply for competitive grants.
- Coach MSc and PhD students.

Profile

- You have a MSc in biology (or equivalent) and hold a PhD degree in sciences, preferably on a relevant topic (molecular biology, genomics) or will complete such a PhD degree prior to starting this position.
- You have strong skills in experimental molecular biology.
- You have experience in cell cultures.
- You have experience in analysing whole genome sequence data.
- You have basic knowledge in bio-informatics.
- You have excellent knowledge of English.
- You are used to working in a multi-disciplinary context.

Preferred additional experience

- Experience in parasitology or in cancer research
- Single cell genomics

Offer

- An intellectually stimulating, international and socially committed environment, with room for personal initiative.
- A full time position of 3 years. Employment commences on 1 January 2015.
- A salary set according to the pay scales of the ITM and the Flemish universities.
- You will work at the ITM headquarter, situated in the bustling city of Antwerp.
- Reimbursement of public transport costs, bicycle compensation and luncheon vouchers.

Interested?

For more information about this position, please contact Prof. Dr. Jean-Claude Dujardin, Head of the Unit of Molecular Parasitology (jcdujardin@itg.be). Applications with application form and motivation letter should be sent by e-mail to vacatures@itg.be, by 20 November 2014. Please use the application form available as a download on www.itg.be/vacatures.



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Institut de Médecine Tropicale
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