PhD POSITION

Genomics and Molecular biology of DNA replication in Malaria parasites

Focus: Genomics of DNA replication in asexual blood stage parasites
Organisation: University of Montpellier/ CNRS FRANCE
Department: Laboratory of Pathogen-Host Interactions (LPHI)
Supervisor: Ana Rita Gomes

Deadline for applications: 24 July 2020
Fellowship: October 2020 – September2023

Description

We are seeking a talented and highly motivated PhD student to join our team at the Laboratory of Host-Pathogen Interactions (LPHI), University of Montpellier and CNRS in the group of Dr. Ana Rita Gomes.

https://lphi.umontpellier.fr/fr/les-equipes/biogenese-membranaire-et-interactions-avec-la-cellule-hote-chez-plasmodium-et-toxoplasma/equipe1-theme2

https://lphi.umontpellier.fr/fr/le-laboratoire/trombinoscope/62-anagomes

The team focuses on understanding initiation of DNA replication in the human malaria parasite *P. falciparum*. The main goal of the PhD project will be to study the genetic landscape of origins of replication and explore the genomic determinants of origin specification. The student will also be involved in the identification and characterization of factors orchestrating initiation of DNA replication. The project will rely on newly developed methods at the leading edge of innovation, including single cell technologies.

Experience with *Plasmodium* culture is desirable but not required. The participant will also perform literature reviews, data analysis, presentation of research results, and preparation of scientific manuscripts.

Applicants must have received a master's degree (or equivalent) in Biology, Molecular Biology or Microbiology by October 2020.

Montpellier has a rich scientific community and is known for its excellence in the field of infectious diseases such as malaria. The team has unrestricted access to the highest quality resources and facilities to ensure successful completion of this project such as CL3 facilities to culture Pf; state-of-the-art sequencing facilities and flow cytometry, mass spectrometry and imaging platforms with permanent assisting staff.

Qualifications:

Essential
- Good writing and communication skills in English
- Excellent record keeping and organizational skills
- Experience in cell culture and molecular biology techniques
- Versatility and perseverance
- Ability to work both independently and as part of a diverse team of scientists.

Desirable
- Experience in data analysis using R or Python.
- Experience in flow cytometry and fluorescence microscopy imaging
- Demonstrated record of scientific achievements in genomics, DNA replication, or parasitology.

To apply, please send a cover letter, CV and contacts of two references to:
ana-rita.batista-gomes@umontpellier.fr.

Relevant Bibliography

Howick, V. M., Russell, A. J. C., Andrews, T., Heaton, H., Reid, A. J., Natarajan, K., et al. (2019). The Malaria Cell Atlas: Single parasite transcriptomes across the complete Plasmodium life cycle. Science 365. doi:10.1126/science.aaw2619

Branon, T. C., Bosch, J. A., Sanchez, A. D., Udeshi, N. D., Svinkina, T., Carr, S. A., et al. (2018). Efficient proximity labeling in living cells and organisms with TurboID. Nat. Biotechnol. 36, 880–887.

Coulombe, P., Nassar, J., Peiffer, I., Stanojcic, S., Sterkers, Y., Delamarre, A., et al. (2019). The ORC ubiquitin ligase OBI1 promotes DNA replication origin firing. Nat. Commun. 10, 2426.

MacAlpine, D. M. (2016). ORChestrating the human DNA replication program. Proc. Natl. Acad. Sci. U. S. A. 113, 9136–9138.

Mulqueen, R. M., DeRosa, B. A., Thornton, C. A., Sayar, Z., Torkenczy, K. A., Fields, A. J., et al. (2019). Improved single-cell ATAC-seq reveals chromatin dynamics of in vitro corticogenesis. bioRxiv, 637256. doi:10.1101/637256.

Petryk, N., Kahli, M., d'Aubenton-Carafa, Y., Jaszczyszyn, Y., Shen, Y., Silvain, M., et al. (2016). Replication landscape of the human genome. Nat. Commun. 7, 10208.

Takahashi, S., Miura, H., Shibata, T., Nagao, K., Okumura, K., Ogata, M., et al. (2019). Genome-wide stability of the DNA replication program in single mammalian cells. Nat. Genet. 51, 529–540.