

Master Project Proposal

Title: Reciprocal impact of a gammaherpesvirus and *Plasmodium* co-infection *in vivo*

Synopsis:

Sub-Saharan Africa is one of the most affected regions by endemic infections, accounting for millions of deaths each year. Although malaria, which is caused by *Plasmodium* parasites, remains one of the leading causes of mortality in this region, oncogenic gammaherpesvirus infections such as Epstein-Barr virus (EBV) and Kaposi's sarcoma-associated herpesvirus (KSHV) are also highly prevalent in sub-Saharan Africa.

Case reports and epidemiological studies indicate that both pathogens may interact, prompting us to investigate the existence of an interaction between these pathogens that can result in unexpected disease outcomes.

The main objective of this project is to experimentally address possible interactions between *Plasmodium* and gammaherpesviruses, using *in vivo* co-infection models by 1) assessing the reciprocal impact of a concurrent infection by both pathogens on the progress of either infection and its associated pathology, and 2) identifying the immunological and molecular basis of the host-mediated mechanisms underlying the observed phenotypes.

The Master's student involved in this work will acquire various technical skills, including animal handling, infection and organ collection, immunofluorescence microscopy, RT-qPCR and flow cytometry.

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