

Master Project Proposal

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

Synopsis:

Sub-Saharan Africa (SSA) is one of the regions most affected by endemic infections, which account for millions of deaths each year. Although malaria, a disease 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 SSA.

Case reports and epidemiological studies indicate that host-mediated interactions between *Plasmodium* parasites and gammaherpesviruses may occur, with severe impacts on infection and pathology, prompting our investigation. We therefore established a novel co-infection model using the murine gammaherpesvirus-68 (MHV-68) and rodent *P. berghei* parasites as surrogates of their corresponding human-infective pathogens.

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, flow cytometry, ELISA and viral titrations.

Supervisor: *Andreia Filipa Mósca, Miguel Prudêncio Lab, andreaifbm@medicina.ulisboa.pt (contact for applications)*

Co-Supervisor: *Miguel Prudêncio, Miguel Prudêncio Lab, mprudencio@medicina.ulisboa.pt [Webpage of the group](#)*