We in the Epitope group at The Centre for Medical Parasitology are looking for a dedicated Master’s thesis student to take part in our research in epitope based malaria vaccine development commencing 1st of September or as soon as possible thereafter.

**Background**
Malaria is responsible for infecting 200 million people every year and killing 400,000. The state-of-the-art vaccine is the RTS,S, which provides very limited protection, thus a second generation vaccine is sorely needed. In the Epitope group, we are working towards inhibiting the crucial step of pathogenesis where the malaria parasite invades red blood cells in the human host (see figure 1). We aim to develop a vaccine that provides antibodies against the proteins responsible for invasion.

**Project description**
For this project, you will be involved in our ongoing work to identify the best-suited epitopes from *Plasmodium falciparum* malaria antigens to be used in a second-generation malaria vaccine. We are currently focused on producing monoclonal antibodies against the antigens RIPR, Rh5 and CYRPA that are involved in the invasion of red blood cells so as to guide vaccine development. Further, we have identified protective epitopes on CYRPA and aim to test these in a trial vaccine in mice during autumn/winter 2021. Your role will be to identify additional epitopes in order to strengthen the vaccine. The methods we expect you will be trained in and use during the project are phage display library panning, cloning of novel vaccine constructs, protein expression and purification, mouse immunizations and malaria growth inhibition assays.

**Our group and research**
You will be part of the Epitope Team at The Centre for Medical Parasitology (CMP). The research at CMP is mainly focused on malaria and is predominantly supported by external grants. All activities are organised in thematically defined teams, each led by a senior scientist. The research in the Epitope team is conducted in close collaboration with researchers at University of Oxford, The Sanger Institute in Cambridge, and the University of Ghana. In the team, we have weekly meetings and journal clubs. Furthermore, we are fond of social activities – enjoying each other’s company makes for a better working environment and, as a plus, better scientific work.

**Principal supervisor**
The principal supervisor is Associate Professor Lea Barfod, Department of Immunology and Microbiology, University of Copenhagen. If you are interested in the project and want to hear more, please send your CV and a short description of yourself by e-mail. We look forward to hearing from you.

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https://cmp.ku.dk/research/teamepitope/

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*Fig. 1: The malarial proteins Rh5, RIPR and CYRPA form a complex that target basigin on the surface of the human red blood cell, thereby initiating invasion. Cowman et al., Malaria: Biology and disease, 2016.*