Our Research

malaria

Malaria is the most fatal disease in sub-Saharan Africa. Although malaria received a lot of attention, its eradication from endemic regions have not been successful. Some of the current focal areas for malaria interventions include vector control, vaccine and drug development. SBBS research on malaria include the following areas:

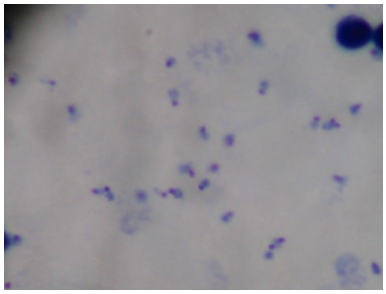
The African Region accounted for most global cases of malaria (88%) in 2015.

...World Malaria Report, 2015

Biology and immune responses to malaria

Current research focuses on the biology and immune responses to antigens of Plasmodium falciparum gametocytes in malaria-infected individuals and how these relate to continuing carriage of gametocytes. The identification of the antigens implicated in this immunity is currently a pressing task, which will enable evaluation of these responses for further studies of gametocyte immunity. The molecular mechanism of complement evasion in malaria parasites is another important question in our group. Using molecular, cellular and immunological tools, we are aiming to identify biomarkers of gametocyte carriage and targets relevant for the development of malaria transmission reducing interventions.

Parasite clearance and drug resistance: What are the factors at play?

- What is/are the cause(s) of slow parasite clearance and/or treatment failures in Ghana
- What are the host and parasite factors responsible for different malaria transmission patterns in Ghana in the wake of ACT use?

To answer these, we are characterizing changes in the immune system (circulating cytokines and other malaria specific antibodies) during infection and without infection and mutations in drug resistance genes (kelch13, pfcrt and pfmdr). We want to understand the determinants of susceptibility to current artemisinin-based combination therapy.