

Subject for Master Thesis: Study of host response after dengue virus infection

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Institute: Institut Pasteur Cambodia, Monivong #5, Phnom Penh, Cambodia

Host laboratory: G4-Immunology Group

Starting date: variable

Duration of the project: 6-9 months

Description of the project:

Dengue is a disease caused by dengue virus. About 50 million infections each year are reported worldwide. Dengue is the most widespread disease transmitted by a mosquito. In Cambodia, 10.000-12.000 infections are reported each year, with most infections taking place in young children. People infected with dengue virus have different clinical symptoms. Some children remain healthy, while other children have fever or need to be hospitalized with very severe complications. The response of the human body to dengue virus is not well understood.

In this study, our aim is to identify a marker that is associated with the severity of dengue virus infection in humans. We will receive samples from patients hospitalized at Kantha Bopha Hospital, Phnom Penh. We will investigate the different types of white blood cells from patients using flow cytometry. With this technique, cells are labeled with a fluorescent tag and visualized using 3 different lasers.

Competence and skills needed: The student needs to be able to make buffered solutions. He/she should have notions on how to work sterile. The student will be supported by a skilled laboratory technician during the training.

Skills acquired after the training: After completion of the project, the student will have a basic knowledge into dengue virology and the immune response. He/she shall be able to work sterile, to isolate human white blood cells, prepare them for staining or for storage into liquid nitrogen.