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Auvaker Arnol Zebaze Tiofack is a Cameroonian born on April 01, 1989 in Dschang. Following his studies in medical and clinical studies in Biochemistry at the University of Dschang (Cameroon), Dr Tiofack obtained a Bachelor's degree and a Master's degree in Biological Sciences in 2011 and 2014 respectively. His internships in a hospital environment allowed him to become familiar with the methods of care, the collection of different types of samples (blood, tissues, urine, stool, etc.) and several clinical diagnostic tests and his Master's studies have enriched his experience on molecular biology and bioinformatics tools, and focused on the population genetics of trypanosomes circulating in domestic animals from Fontem sleeping sickness foci in Cameroon. After this course in population genetics of trypanosomes, he opted for bioinformatics and molecular epidemiology of breast cancer in Cameroonian women, which enabled him to obtain a Doctorate/PhD thesis in Clinical Biochemistry and Molecular Oncology in 2021 at the University of Dschang under the mentorship of Dr Smiths and the supervision of Prof Gustave Simo. During his PhD cycle, Arnol was selected for three years as a Post doc student, a laboratory technician, assistant manager and mentor for master's and doctoral students in the Molecular Parasitology and Entomology Unit (MPEU) of Prof. Gustave Simo as part of research project of H3Africa Consortium that aimed to identify the genetic determinants of two neglected tropical diseases including sleeping sickness and schistosomiasis Auvaker is currently member of Cameroon Consortium for Translational Cancer Research (CCOTCARE) and postdoc within the framework of the E-Predict project whose objective is the Identification and validation of molecular biomarkers for early detection of solid tumors in Cameroon.

Project

Development of point-of-care Isothermal Recombinase Polymerase amplification detecting *Schistosoma haematobium* cell-free DNA in urine samples for the diagnostic of urinary schistosomiasis

In areas under decades of mass administration of Praziquantel, the urine filtration test currently used to diagnose urinary schistosomiasis lacks sensitivity, especially in individuals with light infection intensities. It is in this light that the need for diagnostic tools to screen the disease, map, and ensure disease surveillance has been raised in the 2021-2030 Neglected Tropical Diseases Road map as crucial areas for action to ensure that public health targets for 2030 will be achieved. In this perspective, interests have been dedicated to molecular tools detecting cell-free DNA (cfDNA) of *Schistosoma haematobium* using PCR-based methods such as Isothermal Recombinase Polymerase amplification (RPA). To this end, we will undertake a study aimed at developing an isothermal recombinant polymerase chain reaction for the diagnosis of schistosomiasis by detecting the cell-free DNA of *S. haematobium* in urine samples preserved on filter paper. To achieve this objective, 50 ml of urine samples will be collected and examined for the presence of *S. heamatobium* eggs by UF test using a Sterlitech urinary filtration kit. Ten milliliters of urine samples will be filtered onto Whatman paper. The paper will be left to dry at room temperature and then stored for up to six months. After one week, one month, three months, and six months of storage, these filter papers will be cut for DNA extraction using Chelex and a commercial kit. From the DNA extract, an isothermal RPA will be performed to detect circulating cell-free *S. haematobium* DNA using specific primers and oligochromatographic lateral flow. Data on the prevalence of *S.*

haematobium infections will be generated. Detection of schistosome cfDNA stored on filter paper will improve schistosomiasis diagnosis and enable the development of an easy-to-perform, point-of-care molecular diagnostic tool which will help to validate schistosomiasis elimination and to ensure the monitoring and evaluation of control programs.