



MY LAB

MOLECULAR PARASITOLOGY RESEARCH

Adewale Oke, a doctoral student in medical microbiology, gives a guided tour of his lab at the Nigerian Institute of Medical Research in Lagos, Nigeria.

The molecular parasitology research laboratory (MPRL) is a well-equipped laboratory located within the Department of Public Health and Epidemiology at the Nigerian Institute of Medical Research (NIMR) in Yaba, Lagos. The laboratory, and the department as a whole, is headed by a reputable scholar and research fellow, Professor Olaoluwa Pheabian Akinwale, supported by competent research and technical staff.

Until recently, absence of in-country molecular confirmation of Buruli ulcer (BU) infection was a major challenge to the National Control Program in Nigeria.

The challenge was overcome through a WHO/TDR grant award and two other grants awarded to Prof Akinwale, thereby strengthening the national control program and preventing patients' treatment delay, in addition to making NIMR the only centre (National BU Reference Laboratory) for in-country molecular confirmation of BU infection in Nigeria. Most of the cases reported in the country before then had limitations, which included the use of purely descriptive approach, with most diagnoses being retrospective or prospective, based only on clinical presentations.

This led to the speculation that BU may



be under-diagnosed, hence under-reported in the country, when compared with its two endemic neighbours on the east and west (Cameroon and Benin republic, respectively).

The laboratory is sustained through NIMR intramural research grant and support from DAHW German Leprosy and Tuberculosis Relief Association (GLRA) while samples are screened at no cost to the patients.

To date, a total of 2,921 samples have been screened, out of which 1,118 turned out to be positive. Samples received were collected from Abia, Akwa Ibom, Anambra, Bayelsa, Cross Rivers, Delta, Ebonyi, Ekiti, Enugu, Imo, Lagos, Ogun, Ondo, Osun, Rivers and the Federal Capital Territory Abuja.

The southern region has similar climatic conditions with other BU endemic areas of sub-Saharan Africa, which is a tropical rainforest type.

The structure in charge of sample collection and transportation to the laboratory is done by GLRA.

The laboratory also plans to conduct genetic epidemiological studies of BU in Nigeria, including determination of prevalence of drug-resistance mutations among the strains using culture-free direct DNA sequencing of PCR products. Other research in the laboratory includes epidemiology of

schistosomiasis, soil-transmitted helminthiasis and toxocariasis.

The laboratory also collaborates with institutions within and outside Nigeria. These include Department of Molecular Parasitology and Tropical Diseases, College of Medicine, Taipei Medical University, Taipei, Taiwan; Molecular Immunology Department, Swiss Tropical and Public Health Institute, Basel, Switzerland; Centre for Discovery and Innovation in Parasitic Diseases, Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California, San Diego, USA; Department of Zoology, Faculty of Science, Obafemi Awolowo University, Ile-Ife, Nigeria and Lead City University, Ibadan, Nigeria. 

Adewale Oke was an IBMS Congress poster competition winner (category: Genomics and Molecular Pathology).