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Kabirat Sulaiman is a dedicated and passionate biomedical researcher, currently enrolled for a Ph.D in Molecular Parasitology at the University of Medical Sciences, Ondo Nigeria. She holds a Master's degree in Zoology (Cell Biology and Genetics). She is part of a research group, building capacity for the diagnosis of schistosomiasis, one of the neglected tropical diseases (NTDs) in Nigeria headed by Dr Oyetunde T. Oyeyemi. She has experience in microscopy, immunoassays, gel electrophoresis, spectrometry, and in silico molecular studies. Her interests span but are not limited to the development of diagnostic tools, identifying new therapeutic targets and vaccine candidates for NTDs and other diseases of public health concerns.

Project

Addressing the Diagnostic Hurdle of *Schistosoma haematobium* in Resource-Constrained Regions: Harnessing *Fasciola*-Derived Antigens for Urogenital Schistosomiasis Detection

Sub-Saharan African nations bear the brunt of urogenital schistosomiasis prevalence. The imperative for effective detection methods is paramount in its control efforts. However, current diagnostic practices heavily rely on microscopy, which has shown inadequate sensitivity in certain contexts. Moreover, alternative diagnostics suffer from similar limitations and are often financially prohibitive in resource-constrained areas. One significant hurdle in developing antigen-antibody-based diagnostics for *Schistosoma haematobium*, the causative agent of urogenital schistosomiasis, is the dearth of appropriate laboratory animals (such as hamsters) for parasite culturing in many endemic regions. Compounding this challenge, the availability of captured antigens is insufficient. Nevertheless, shared immunological characteristics and cross-reactive antigens among trematodes, notably between *Schistosoma* and *Fasciola*, hint at a promising avenue. Leveraging *Fasciola*-based antigens could prove cost-effective, yielding abundant antigens without the need for intricate parasite culturing, as Fasciola parasites can readily be obtained from cattle slaughterhouses. The proposed methodology involves employing *Fasciola* egg antigen to capture primary antibodies from sera of *S. haematobium*-infected individuals in an ELISA assay. Subsequently, immunoreactive proteins within the crude antigen will be pinpointed through Western blot analysis, with specific proteins identified via LC-MS/MS analysis. The overarching objective of this endeavour is to devise an immunodiagnostic tool for *S. haematobium* using *Fasciola* soluble egg antigen, scrutinizing specific proteins for immunoreactivity. Such an innovation holds the potential to transform schistosomiasis diagnostics, particularly in highly endemic regions.