DNA genotek

Case study

Oragene®/saliva collection kit enables breast cancer research in Kenya with patient-friendly procedure and long-term storage at ambient temperature

Rispah Torrorey, PhD candidate
University of Moi, Kenya

"So far I have collected 38 saliva samples and they are right here with me in my office at room temperature with no extra costs for storage. Thanks to DNA Genotek for this novel innovation that can allow people in low income countries to easily collect and store samples for DNA analysis."

Rispah Torrorey, PhD candidate, University of Moi, Kenya

Oragene device prior to collection

Sample ready for transport, storage and processing

Study overview

Breast cancer is now the primary cause of cancer-related mortality in women worldwide and is associated with multiple co-morbidities. Obesity, decreased fertility rates and later age of first full-time pregnancy have contributed to a rise in incidence and mortality rates from breast cancer in many African nations. It is now appreciated that breast cancer comprises a heterogeneous spectrum of pathological changes, with subtypes that are different in terms of their presentation, prognosis and treatment response.

Rispah Torrorey and her collaborators at the University of Stellenbosch, South Africa are focused on the identification of molecular subtypes of breast cancer in relation to tumour infiltration patterns and hereditary factors. Together, their goal is to identify high-penetrance mutations in the BRCA1 and BRCA2 genes as well as potential gene-environment interactions on which to develop preventative diagnostics and optimize treatment plans in Kenyan patients with breast cancer.

Challenges

Voluntary informed consent is a necessary prerequisite for the ethical conduct of genetic research and therefore approval from the Institutional Review and Ethics Committee for Human Research at the Teaching and Referral Hospital of Moi University was required for DNA collection. The process used to obtain consent from patients includes explaining the purpose of sampling and is often time-consuming and difficult for patients to understand. As blood collection is an invasive and painful procedure, obtaining consent for research use renders compliance among potential study participants even lower.

Furthermore, the infrastructure required to store and protect biological samples from degradation is lacking at the University of Moi and Ms. Torrorey does not have the freezers essential to store blood samples.

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Why Oragene saliva collection kits?

Due to a lack of availability of cold storage facilities, blood samples could not be used for the study. Use of swabs was also not an option due to bacterial growth after being stored for a few days at room temperature. The Oragene/saliva collection kit was chosen as the sample method as it offers a non-invasive technique for obtaining a DNA sample and provides an all-in-one solution for long-term storage at room temperature.

Results

Qualitative data as well as Oragene/saliva samples were obtained for an initial set of Kenyan breast cancer patients while attending an outpatient clinic or while admitted for surgery. The non-invasive, fast and simple collection method inherent to Oragene/saliva kits facilitated informed consent and increased patient participation. The Oragene/saliva DNA samples are currently stored at room temperature in Ms. Torrorey's office fully protected from degradation awaiting future funding for genetic analysis.

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