



Oragene® facilitates a collaborative pharmacogenetic study project at Alfaisal University, Saudi Arabia

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An individual's response to a drug is influenced by genetic polymorphisms which lead to varied function of the proteins involved in biotransformation and molecular transport across the cell membrane. A previous study¹ in breast cancer patients in Karachi showed significant differences in frequencies of polymorphic genes involved in metabolism and transport of chemotherapeutic drugs as compared to ethnic groups reported in the International HapMap Project database. In response, Dr. Afsar's team designed a cross-sectional study in healthy volunteers to establish the normal distribution of genotype and allele frequencies of various common polymorphic drug metabolizing enzymes and ABC transporters. The results would give a basis to understand the need for further pharmacogenetic research in this area.

DNA samples from approximately 200 participants would be collected from healthy adults spread evenly across genders, ethnicities and socioeconomic groups within Karachi, Pakistan.

Main challenges

Dr. Afsar knew from previous projects that recruiting healthy volunteers to donate blood to extract their DNA for research is not always easy. Healthy candidates may not perceive the benefit of participating in the study so it is important to make it easy for them. In addition, while blood collection provides an abundant source of high quality DNA, it requires centralized collection with a trained phlebotomist and convincing donors to visit the clinic and accept an invasive procedure. Dr. Afsar required a sample collection method that would be quick and easy for participants, while maintaining the high quantity, high quality DNA he required for downstream analysis (PCR, Genotyping, Pyrosequencing).







 $Some \ DNA \ Genotek \ products \ may \ not \ be \ available \ in \ all \ geographic \ regions, contact \ your \ sales \ representative \ for \ details \ and \ representative \ for \ details \ representative \ for \ r$



Why Oragene?

The Oragene self-collection kit was selected as the collection method because it is efficient and non-invasive, thereby speeding time needed to collect up to 200 samples and for maximizing volunteer participation.*

Results

To maximize performance and project efficiency, a single session was organized to demonstrate the method and collect the saliva samples. Study participants were gathered in a few groups at a pre-arranged venue and the entire exercise of sample collection, labeling, and storage was quickly accomplished. Also, the DNA from the Oragene/saliva samples was extracted easily and effectively with the prepIT*•L2P extraction kit and the yield obtained was sufficient to successfully complete the intended genotyping.

- Afsar NA et al. Genotype Frequencies of selected Drug Metabolizing Enzymes and ABC Drug Transporters among Breast Cancer Patients on FAC Chemotherapy. Basic Clin Pharmacol Toxicol. 2010, 107 (1):570-6.
- * Because Oragene stabilizes an abundant source of high molecular weight DNA, Dr. Afsar was confident the Oragene/saliva samples would perform reliably on the required genetic analysis.

Oragene *-DNA is not available for sale in the United States.

Oragene *-DISCOVER is for research use only, not for use in diagnostic procedures.

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