



Case study

Oragene®/saliva kits facilitate DNA collection in cancer patients for pharmacogenetic research in South Africa

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Study overview

Ototoxicity is the degeneration of the inner ear tissue caused by therapeutic drugs and can lead to irreversible bilateral hearing loss. Ototoxic drugs include cisplatin for cancer treatment and streptomycin for tuberculosis treatment. Cisplatin-induced ototoxicity affects 23-50% of adults and up to 60% of children receiving the drug, while streptomycin-induced ototoxicity affects between 2-33% of patients. Those receiving similar doses of these drugs exhibit individual variation in response to treatment which can be attributed to genetic variants in the genes encoding drug-metabolising enzymes. Sr. Gameda Benefeld and her study team at the University of Cape Town are currently involved in a research endeavor identifying susceptibility genes associated with cisplatin- and streptomycin-ototoxicity. Through pharmacogenetic analyses the group is determining whether an association exists between certain genetic markers and ototoxicity. The goal of the research is to contribute to the development of a pre-treatment genetic test for susceptibility to ototoxicity, which will allow clinicians to optimize drug therapy, prevent hearing loss and preserve patient quality of life.

Main challenges

Sr. Benefeld recruits adult cancer patients in clinic each week during their chemotherapy drug treatment. Recruiting participants into the study is a challenge as many candidates are quite ill and want to avoid unnecessary invasive procedures. Therefore, to maximize participation and ensure discomfort is minimal, blood draws are not always preferable. Sr. Gameda required a non-invasive DNA collection method that would reliably deliver sufficient high integrity DNA for downstream genotyping.



Oragene device prior to collection

Sample ready for transport, storage and processing



Some DNA Genotek products may not be available in all geographic regions, contact your sales representative for details.

