

DIRECT DNA AMPLIFICATION USING POWERPLEX® 18D IN ABU DHABI FORENSIC EVIDENCE DEPARTMENT

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A sterile non-invasive device known as OmniSwab is widely used for saliva and buccal cells collection in paternity testing and convicted-felon DNA profile databases in Abu Dhabi forensic Evidence Department. Direct amplification of DNA collected by this device remains an important challenge especially in light of increasing other collection device with new direct PCR multiplex.

Aim: To demonstrate the effectiveness of the PowerPlex® 18D System for direct amplification of DNA from saliva and buccal samples collected on omniswab.

Methods: Buccal samples from 300 donors were collected using the omniswabs sample collection device. Samples Pre-treatment was done by addition of protease K solution for 1 hr under the temperature of 70°C. The PowerPlex® 18D System was used to amplify STR regions from all pre-treatment DNA samples. A 11.5µl reaction mixture was dispensed in 0.2 ml tubes. 1 µl from each sample was added to the PCR tubes. All samples were amplified using a GeneAmp® PCR System 9700 thermal cycler and subsequently analyzed on an ABI PRISM® 3130 and 3500XL Genetic Analyzer using a 50RFU threshold.

Results: All omniswabs samples have been extracted successfully. Twenty-six out of 300 samples were partial profiles while the rest was complete balanced profiles.