

VALIDATION OF THE EPPENDORF *epMOTION*[®] 5075 TMX SYSTEM FOR USE WITH THE APPLIED BIOSYSTEMS PREPFILER[™] AUTOMATED FORENSIC DNA EXTRACTION KIT

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Manual extraction of DNA using the PrepFiler[™] Forensic DNA Extraction Kit (Applied Biosystems) provides comparable DNA yields to that of the phenol-chloroform method; however the process is time consuming. In order to reduce turn around time and prevent a backlog of samples, the Eppendorf *epMotion*[®] 5075 TMX was purchased to allow automation of the extraction process.

To evaluate the Eppendorf *epMotion*[®] 5075 TMX System, DNA from biological samples covering a range of substrates commonly seen in forensic casework were extracted both manually and via automation. The data was analyzed for correlation, precision, reproducibility, sensitivity, mixture analysis and contamination.

The PrepFiler[™] Automated Forensic DNA Extraction Kit (Applied Biosystems) provides comparable STR profiles to that of samples extracted with phenol-chloroform. This study confirmed that the Eppendorf *epMotion*[®] 5075 TMX is a clean liquid handling system that provides a robust, reproducible and reliable method for obtaining genomic DNA from biological samples suitable for real-time qPCR and STR profiling. The Eppendorf epBlue software is user-friendly and scripts can be written easily and quickly. The Eppendorf *epMotion*[®] 5075 TMX system can run a maximum of 96 samples in approximately 2.5 hours. Hands-on time is very minimal when compared to manual extraction which allows for timely processing of case-work samples and can cut down on the back-log of samples found in most crime laboratories.