AN EVALUATION OF THE RapidHIT® ID SYSTEM FOR FIELD FORWARD APPLICATIONS

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The utilization of a new Rapid DNA (RDNA) platform to generate CODIS uploadable DNA profiles will serve to be instrumental in improving current DNA typing techniques and in reducing the backlog of forensic reference samples. The RapidHIT® ID (IntegenX; Pleasanton, CA) system is a second generation system in RDNA that has the potential to yield comparable DNA profiles to those achieved by traditional bench methods. The RapidHIT® ID platform is a self-contained, fully-automated, sample-to-profile system with a novel construction designed to reduce it's footprint as well as the number of samples necessary to be run at a single time, making it condusive to both laboratory and field work application. The RapidHIT® ID system has the capacity to perform direct amplification, electrophoresis, and data analysis in approximately 90 minutes with nominal "hands-on" assistance required. Reliable DNA STR profiles have been generated from reference buccal swabs. The RapidHIT® ID platform was evaluated for reliability, concordance, reproducibility, and lack of contamination. Sensitivity and interpretation thresholds were established, and although the system was designed for reference buccal swabs, additional studies evaluating the effects of sample age, inhibitors, sample mixtures, and sample collection methods were performed. This new instrumentation provided DNA STR profiles comparable to those obtained from traditional DNA genotyping methodologies, in addition to complete or partial profiles from the sensitivity studies. The RapidHIT® ID system is a new RDNA platform that is robust and reliable for generating STR profiles from forensic reference samples.