

AN EVALUATION OF A NEW RAPID DNA PLATFORM FOR FIELD FORWARD APPLICATIONS

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Utilization of a Rapid DNA platform to generate uploadable DNA profiles within and/or outside the traditional laboratory setting can be instrumental to improve workflow and reduce backlogs for DNA typing. The RapidHIT® ID (IntegenX; Pleasanton, CA, USA) system is a new second generation Rapid DNA system that is configured to perform DNA extraction, PCR amplification, electrophoresis, and data analysis of reference swabs with an expert system to generate forensic DNA profiles comparable to traditional bench systems. The RapidHIT® ID system has a novel design that reduces its footprint and number of samples that must be run at any one time. Reliable STR profiles from reference buccal swabs were obtained with nominal "hands-on" sample loading time and with a significant enhancement of workflow compared to the first generation Rapid DNA systems. The RapidHIT® ID system was tested for reliability, concordance, reproducibility, and lack of contamination. Interpretation and sensitivity thresholds were determined, and even though the system is designed for reference buccal swabs, studies determining the effects of sample age, inhibitors, sample mixtures, and sample collection methods were performed. The new instrument provided results comparable with those from traditional DNA genotyping methodologies.