

RapidHIT 200™ APPLICATIONS FOR REAL-WORLD CASES

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The RapidHIT 200™ System produces Sample-To-Answer DNA profiles in less than two hours and is designed for ease of use and ease of deployment. As previously presented, the RapidHIT System produces data of comparable quality to benchtop “gold standard” methods and can reliably be used to produce DNA profiles for buccal reference samples on cotton swabs. Here we present data from the RapidHIT System using protocols designed specifically for real-world applications requested by our customers for the purpose of: 1. Performing Cold-Hit Confirmations, 2. Solving Missing Persons Cases, and 3. Generating Investigative Leads. Cold-Hit confirmations are a vital part of the criminal justice process that ensures the identified suspected offender is correctly matched to the hit profile. The confirmation process includes the reanalysis of the archived reference sample collected for the matching offender, as well as analysis of a new reference sample collected from the offender. Missing persons cases often involve generating DNA profiles from relatives of the missing person and comparing those profiles to either a known DNA profile of the missing person or a DNA profile generated from an object of the missing person, such as a hair brush, toothbrush, or item of worn clothing. For investigative lead generation, the RapidHIT System can quickly generate DNA profiles from samples collected from the crime scene, while replicate samples can be analyzed at the crime lab using traditional processes during the normal casework workflow. The RapidHIT System can now produce DNA results from a variety of crime samples, in a time frame that allows Law Enforcement to narrow the field of suspects and establish probable cause while the investigation remains fresh. Moreover, by triaging these samples in close to real time, investigations can proceed rapidly without compromising ongoing forensic laboratory casework. Here we present data from the RapidHIT 200 System for applications other than cotton swab buccal samples. The work presented will include results for blood and saliva samples on FTA paper and Bode Buccal Collectors, as well as blood on various substrates (rusty metal, concrete, gun grip, fabric, *etc.*). It also includes saliva and contact-based samples such as cigarettes, soda cans, chewing gum, shirts, ball caps, and cell phones. Additionally, RapidHIT System results will be presented that were generated from a diverse set of samples using a variety of swab types of interest to the community (Puritan cotton, FAB, Omni, *etc.*), as well as data highlighting the ability to conserve and archive the swabs for reanalysis at a future date, if necessary.