

**OBTAINING DNA PROFILES FROM ENVIRONMENTALLY CHALLENGED CRIME SCENE SAMPLES ENCOUNTERED IN THE UNITED ARAB EMIRATES USING THE RAPIDHIT™ SYSTEM**

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RapidHIT™ Human DNA Identification System was initially developed to generate DNA profiles from reference samples in approximately 90 minutes. In this study, the sensitivity and the robustness of the newly introduced “Run Other Samples” instrument protocol using disposable cartridges with PowerPlex® 16 HS amplification system was validated on simulated crime scene samples. Varying amounts of blood and saliva samples were deposited on potentially inhibiting substrates. The substrates chosen for this study are commonly found in crime scenes in the United Arab Emirates (UAE). Additionally, the body fluids deposited on some of the substrates were environmentally challenged by subjecting them to increased heat and humidity factors that are similar to the summer weather conditions in UAE. The results indicate that the RapidHIT™ System is able to generate complete and concordant profiles from 0.125 $\mu$ l of neat blood and from 10.0 $\mu$ l of neat saliva. Also, full profiles were obtained with 1:20 diluted blood and saliva samples. Additionally, full profiles were obtained from environmentally challenged samples using the RapidHIT™ System.