

## **DEVELOPMENT OF A qPCR ASSAY FOR GENITAL MICROBIAL SIGNATURES**

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Recently, the human microbiome has been studied for applications in human identification and its potential transfer to various surfaces. However, there has been little research on the genital microbiome, which physiologically differs from other body sites, and has great potential value in cases of sexual assault. As per Locard's Principle of Exchange, the genital microbiome may indicate proof of sexual contact between two individuals, each of male and female sex, and then be used as evidence within criminal casework. A comparative analysis between preliminary data obtained at the McCord Research Lab at FIU and available literature was done to select seven target taxa that could be signature to the genital microbiome. These taxa are *Staphylococci*, *Anaerococci*, *Prevotella*, *Corynebacteria*, *Actinomyces*, *Gardnerella*, and *Lactobacilli*. Primers and probes for these target taxa were designed and are currently being tested on a sample population of males and females. Swabs of multiple body sites are examined for the presence of genital-specific targets using DNA extraction and quantification via qPCR. This will determine the efficiency of the designed primers & probes, as well as determine the specificity of each taxa to the genital area. For future directions, the results of this study will be implemented in studying the transferability of the taxa from one individual to both undergarments and another individual.