

Automated Differential Digestion using the VERSA 1100
Helena Wong, Oakland Police Department Crime Laboratory

In examining sexual assault evidence, a process called the differential digestion is utilized to separate the assailant's sperm cells from the victim's non-sperm cells. This current process is a labor-intensive process that requires multiple wash and centrifugation steps to remove residual non-sperm DNA from the sperm fraction. An automated approach to this process was developed using a technique called "selective degradation". This technique uses DNase I to destroy any residual non-sperm DNA in the sperm fraction, replacing the multiple wash and centrifugation steps. This process was automated using the VERSA 1100. The flexibility of the VERSA 1100 allowed automation of this process to be customized to our laboratory's needs, including the ability to prepare microscope slides and prepare sample tubes for DNA extraction.