

## **AN EVALUATION OF THE SPERM CELL STAINING KIT, SPERM HY-LITER™**

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The examination of sexual assault kit slides for the presence of spermatozoa is a common practice in Forensic Laboratories. Sperm cell identification is an arduous task that is both labor intensive and time consuming. Typically examination of evidence smear slides involves either performing a differential stain procedure, such as Christmas Tree Stain, or using only phase contrast microscopy to locate and identify sperm cells. A new method for locating and identifying sperm cells on prepared sexual assault kit smear slides was developed by Independent Forensics called Sperm Hy-Liter™.

An evaluation of the Sperm Hy-Liter™ kit has shown that this staining procedure does differentially stain sperm cells from other types of cells. This technique includes a dual staining method that will both allow for the staining of any nucleic acid present on the slide and specific sperm cell staining simultaneously. The specificity of the staining method along with the sensitivity to detect low levels of sperm cells present on smear slides was evaluated.

It was determined that the specificity of the staining, the sensitivity to low numbers of sperm cells, and the ability to couple this to more automated microscopic technology is effective in improving the approach to forensic sexual assault kit smear slides. Also it was determined that use of this staining method does not have a deleterious effect on subsequent DNA extraction and downstream DNA testing methods such as Y-STR or STR testing.