DEVELOPMENTAL VALIDATION OF SPERM HY-LITER™: A SPECIFIC, SENSITIVE, AND CONFIRMATORY SCREENING METHOD FOR HUMAN SPERM DETECTION FROM SEXUAL ASSAULT EVIDENCE

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The identification of sperm from sexual assault evidence (SAE), as presently performed, is a labor intensive, time consuming, insensitive, and non-specific technique. In order to satisfy legal and criminalistic requirements for proceeding with DNA-based evidence testing, crime laboratories devote a great deal of effort, time, and resources to identifying sperm from SAE. Commonly employed sperm identification methods are based on non-specific microscopic staining techniques (i.e., KPIC or 'Christmas Tree Stain') that are not amenable to automation or computer-aided searches. Since a large percentage of crime laboratory case work is related to SAE, the effort and expense devoted to sperm screening is substantial. These issues are exacerbated with SAE that has been stored for long periods (e.g., backlogged rape kits) or for samples that have minimal amounts of biological material.

Here we present experiments demonstrating the sensitivity, specificity, and usefulness of Sperm HY-LITER™: a reagent that fluorescently labels human sperm heads. Additionally, we show that Sperm HY-LITER™ provides scientifically justifiable and legally defensible identification of human sperm, and greatly increases the efficiency of microscopic sperm searches.