Validation of Sperm HY-LITER Kits for the Fluorescent Detection of Human Sperm Cells in Forensic Samples

by Jordan Anderson

ABSTRACT: The Sperm HY-LITER kit was designed by Independent Forensics to detect human sperm cells in sexual assault case samples using immunochromatography and fluorescent microscopy. To be useful in a forensic lab such assays must be both specific and sensitive. This validation study incorporates tests which provide data about the specificity, sensitivity and reproducibility of the Sperm HY-LITER assay to preferentially identify human sperm heads with fluorescent antibody tags. The Sperm HY-LITER kit was then tested with mock case samples to determine the overall reliability of these assays in forensic casework.

Effect of Hematocrit Concentrations on Forensic Blood Alcohol Analysis

by Jessica Savopolos

ABSTRACT: Forensic blood alcohol measurements play a critical role in the investigation and prosecution of drunk driving. The validity of these results has been challenged recently based on the argument that an individual’s blood hematocrit may affect the measured blood alcohol level. Hematocrit is a measure of the relative amount of red blood cells in a blood sample with a typical range of 35-50% by volume. Drinking alcohol, or ethanol, is distributed through the plasma portion of the blood, but not into the red blood cells. As a result the effective alcohol concentration in the plasma fraction increases as the hematocrit increases. Our laboratory is interested in determining whether the forensic blood alcohol analysis protocol is sensitive to the hematocrit level in a sample.

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