SemenSPY CSI Semen Detection Kits

PSA VALIDATION STUDY

The detection of the PSA (Prostate Specific Antigen) on forensic samples confirms the presence of semen even in samples that involve vasectomized or azospermic individuals.

The PSA is a glycoprotein produced by the prostate gland and secreted in seminal fluid at concentrations ranging from 2.0x105 to 5.5x106 ng/ml. **Unlike the acid phosphatase presumptive test**, detection of the PSA requires the presence of the protein without the need of the target to perform an enzymatic function.

This will aid in the identification of semen in aged evidence samples in which the acid phosphatase enzyme is functionally inactive.

Methods used to detect the PSA include Ouchterlony double diffusion, crossover electrophoresis, rocket immunoelectrophoresis, radial immumodiffusion, and ELISA testing. These techniques are labor intensive and require specialized training.

The ***SemenSPY*** PSA test is a product that can be used for rapid and qualitative identification of semen.

The ***SemenSPY*** PSA test confirms the presence of semen by utilization of a dye-labeled mobile monoclonal antibody that binds to the PSA. The PSA-antibody complex diffuses horizontally on a membrane with two regions of fixed antibodies.

Immobilized polyclonal PSA antibodies are located in a test region and antihuman immunoglobulin antibodies are present in a control region on the ***SemenSPY*** test card test membrane.

In these regions, the mobile PSA-antibody complex and/or free dye-labeled PSA antibody interact with the immobilized antibody regions. Following the application of the sample extract and a 10 minute diffusion time, the accumulation of the dye labeled antibodies results in the formation of pinkish colored bands at the test and control regions on the test card membrane.

A pinkish colored band at the control region signifies that the test was run appropriately. Immobilization of the antigen antibody complex at both the test and control region positively identifies the presence of the PSA.

Validation studies were performed to evaluate the PSA test card for use as a confirmatory test for the presence of semen.

The sensitivity of the test card membrane for the PSA was determined using liquid and dried serial dilutions of a SERI semen sample. The specificity of the test card was evaluated by analysis of various body fluids (both neat and mixed stains) on different substrates. These included male and female urine, blood, saliva, fecal material, and vaginal secretions on swabs, wood, cotton, metal, carpet, and leather.

SemenSPY detects the PSA found in seminal fluid even in the mixtures with other body fluids.

Our validation studies have demonstrated that the ***SemenSPY*** test card is a rapid and simple test for confirmation of semen in forensic evidence samples. Using the ***SemenSPY*** test card, PSA is even detected at extremely low concentrations.

SemenSPY is Bringing Forensics Home