

Evaluation of semen presumptive tests for use at crime scenes

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Abstract

The SERATEC® PSA Semiquant and RSID®-Semen tests are immunoassay kits that identify semen by detecting prostate-specific antigen (PSA) and semenogelin (Sg), respectively. Both kits were tested with semen, urine, blood, saliva, vaginal secretions and breast milk in order to determine their sensitivity and specificity. These results demonstrate that the SERATEC PSA kit is more sensitive than the RSID-Semen kit with a limit of detection of 200 ng/mL as opposed to 8.0×10^3 ng/mL. The RSID-Semen kit gave no false-positives or -negatives compared with 2.9% false-negatives with the SERATEC PSA kit. Results from postcoital samples show the RSID-Semen kit to be more effective, indicating that this kit is more suitable for semen identification in the Haven Suites. As a more robust and cost-effective kit, the SERATEC PSA test is recommended for use at crime scenes. The ability to obtain DNA profiles from the buffer of both kits demonstrates the potential benefit of these kits in a rape investigation. The use of these kits at crime scenes would provide an invaluable contribution by prioritizing samples for subsequent analysis, thereby allowing greater efficiency with investigation times.

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