

DETECTION OF PROSTATE SPECIFIC ANTIGEN AND SALIVARY AMYLASE IN VAGINAL SWABS USING SERATEC® IMMUNOCHROMATOGRAPHIC ASSAYS

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SERATEC® PSA Semiquant is a rapid test for detection of human seminal fluid. This immunochromatographic strip test uses two monoclonal antibodies specific for human PSA and takes place in a compact test cartridge¹. The test is performed by placing the extracted sample in running buffer into the test well which has a conjugate pad that is used to transport the sample to the test membrane. The sample will dissolve colloidal gold labeled anti-PSA antibodies. These labeled antibodies will bind to PSA if it is present in the sample and be moved across the membrane by bulk fluid flow to the membrane¹. Bound antibodies will then bind to antibodies present in the “T” or test line on the membrane and appear as a pink line. An internal positive control exists in this test and it provides a semiquantitative result¹.

The SERATEC Amylase Test is a rapid test for detection of human saliva. It is very similar to the PSA Semiquant described above, however it uses anti-amylase antibodies for detection. Both tests are easy to use, and results are obtained after 10 minutes. They are both attractive for use in processing sexual assault kits for seminal fluid and saliva detection.

Both PSA and amylase are found endogenously in the vagina. With this knowledge and a positive result for either immunochromatographic assay, one might question the reliability of the test result. It is for this reason, we have undertaken a large-scale study to determine the rate of positive results from the SERATEC PSA Semiquant and Amylase Tests with vaginal swabs. The vaginal swabs were collected following IRB approval at all institutions. Volunteers were asked to abstain from male ejaculation in the vaginal cavity for 10-14 days, oral-vaginal contact for 7 days, and female orgasm for 2 days. Swabs were self-collected. Samples were extracted, and the extracts were used for running the PSA Semiquant and Amylase tests. Results were recorded, and photographs taken of each test. All results were peer-reviewed. Information about spermicide and contraceptive use was collected from volunteers. Data presented will include the rate of positive results of PSA and amylase endogenously in the vagina as well as any correlations between results and volunteer responses.

¹Laux, D. L., Tambasco, A. J., & Benzinger, E. A. (2006). Forensic Detection of Semen II. Comparison of the Abacus Diagnostics OneStep ABACard p30 Test and the Seratec PSA Semiquant Kit for the Determination of the Presence of Semen in Forensic Cases.