

Re-evaluation of the Seratec® PSA Semiquant test: comparison of kit provided buffer with phosphate buffer saline

James DiFrancesco & Joel Sutton

Abstract

The Seratec® PSA Semiquant test has been utilized in the forensic community to help identify seminal fluid on crime scene samples. The value of the test is dependent on its ability to accurately identify a prostate specific antigen (PSA) in various samples. Several non-biological substances that may be found on oral and vaginal samples in forensic casework were tested in this study to see if they would give false positive results using the Seratec® PSA Semiquant kit with two different buffers. Results indicate Red Bull® Energy Drink, Rock Star® Sugar Free Energy Supplement, and Summer's Eve® Douche Medicated as non-biological substances that gave false positive results when extracted with Phosphate Buffer Saline (PBS) on the test strips. False positive results were also observed on oral swabs collected from individuals who ingested Red Bull® Energy Drink. The false positive results can be attributed in part to a drop in pH of the PBS buffer. The buffer provided with the Seratec® PSA Semiquant kit was also tested and was found to prevent these false positive results from occurring. This Seratec® buffer was seen to effectively maintain a pH of 8.5 for all samples tested and was just as sensitive as the PBS buffer. This study illustrates the need for laboratories that use the Seratec® PSA Semiquant kit to re-evaluate the buffer they are using to extract case samples.

Source

Canadian Society of Forensic Science Journal

Volume 48, 2015

Issue 3

Link

<https://www.tandfonline.com/doi/abs/10.1080/00085030.2015.1051315>