Analysis Report

Case # PSA113279

On 1 August 2011, USPS (13073410000033XXXXX) delivered to SSDI an envelope containing one pair of ladies panties for testing. The item was logged in and testing was completed on 8/1/2011.

Evidence

The tested item is one beige pair of ladies panties, manufactured by Victoria’s Secret, size S, RN#70817, dated 7/13/2011 by customer.

Analysis

A Prostate Specific Antigen (PSA) test was completed. The detection of the PSA on forensic samples is often helpful because it confirms the presence of semen even in samples that involve vasectomized or azoospermic individuals. The PSA is a glycoprotein produced by the prostate gland and secreted in seminal fluid at concentrations (from 2.0x10^5 to 5.5x10^6 ng/ml).

A test for the presence of Acid Phosphatase (AP) was conducted. Acid phosphatase is an enzyme present in semen at concentrations of 20 to 400 times other body fluids. The presence of
acid phosphatase is a presumptive test for the presence of semen and needs to be confirmed by DNA or the presence of a Prostate Specific Antigen (PSA) and Sperm Protein (SP).

A Microscopic Examination (ME) was performed. This examination for the presence of sperm will be negative unless intact, non-degraded sperm are detected. Intact sperm are rarely visible after 5 days unless the sample preserved preventing the natural degradation of the sperm cells.

A test for human salivary amylase (HSA), an enzyme found in human saliva was performed. This test will detect as little as 1 µl of saliva with no cross-reaction to blood, semen, urine, vaginal secretions or menstrual blood, however a low-level detection from breast milk and human fecal matter may be observed.

A test for Sperm Protein (SP) was performed. SP10 is a protein localized throughout the inner aspect of the outer acrosomal membrane and the outer aspect of the inner acrosomal membrane. When detected, the presence of sperm is confirmed.

Results

The panties tested positive for the presence of semen and sperm by PSA, AP, and SP, and negative for sperm heads by microscopic examination. A saliva test was performed and was positive for human saliva. The following chart provides the comparative strengths of the results of the five tests (1 to 10 scale, 10 being the strongest outcome).

<table>
<thead>
<tr>
<th>Item</th>
<th>PSA</th>
<th>AP</th>
<th>ME</th>
<th>HSA</th>
<th>SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beige Panties</td>
<td>10</td>
<td>6</td>
<td>0</td>
<td>3</td>
<td>10</td>
</tr>
</tbody>
</table>

Conclusions

The panties tested positive for the presence of semen and sperm. No whole sperm heads were detected microscopically which may be attributed to the age of the sample or the method of storage. The panties tested positive for human saliva. Copulation (intercourse with ejaculation) most likely occurred within 24 hours of when the item was worn. A successful YPLEX DNA extraction for a male profile is estimated above 98% on the tested item. The panties and proof of test will be held for 1 year in freezer #1 then destroyed unless requested by customer. Results were emailed.

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