

# RSID-Semen

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## Introduction

RSID-Semen utilizes two anti-semenogelin monoclonal antibodies in a lateral flow immuno-chromatographic strip test format to detect the presence of semen. Semenogelin is a major component of human seminal fluid and gives rise to the gel-like coagulum of newly ejaculated semen. We demonstrate that RSID-Semen can identify semen from exhibits before they are processed for DNA-STR analysis. Also, the test is accurate, reproducible, easy to use, and can detect semen from a variety of materials and surfaces. In addition, we describe studies on the sensitivity, body fluid specificity, and species specificity of RSID-Semen.

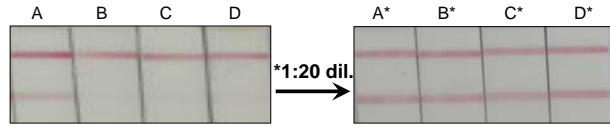
## Sensitivity

RSID-Semen detects less than 1 µl of human semen.



Extract (µl):	0	1	5	25	100
Semen (µl):	0	0.05	0.25	1.25	5.0

RSID-Semen high dose Hook effect



A	B	C	D	A*	B*	C*	D*
5	25	50	100	0.25	1.25	2.5	5.0
*1:20 dil.				*1:20 dil.			
0.25	1.25	2.5	5.0	0.0125	0.0625	0.125	0.25

## Specificity

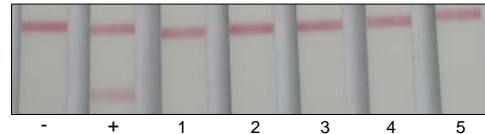
RSID-Semen does not cross-react with human blood, saliva, or urine.



Body Fluids (1 µl): Se/B/Sa/U B/Sa/U

Other substances that do not cross-react: vaginal secretions, feces, breast milk, sweat, ear wax, amniotic fluid

RSID-Semen does not cross-react with animal semen.

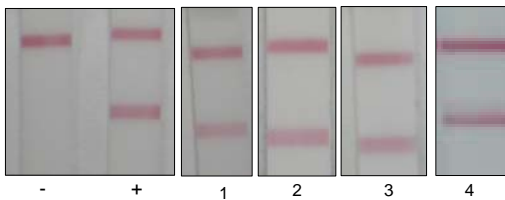


Animal semen tested (1 µl): goat (1), sheep (2), pig (3), bull (4), dog (5)

Other animal semen that does not cross react (1 µl, not shown): horse, mouse, cat

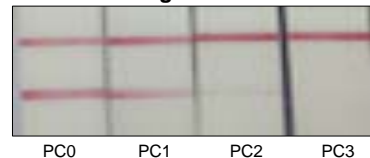
## Forensic Exhibits

RSID-Semen detects semen from forensic samples.



Samples shown: swab of condom (1), stain on cotton sheet (2), stain on cotton sheet containing semen and contraceptive gel (3), stained undergarment (4)

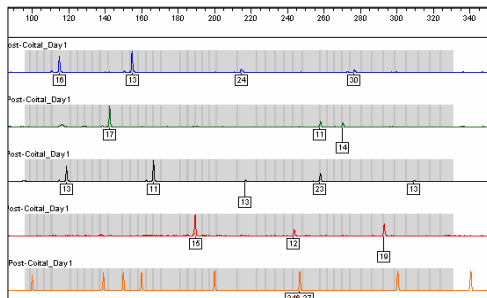
RSID-Semen detects semen from post-coital vaginal swabs.



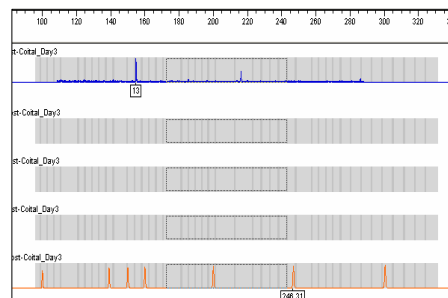
Samples shown: Vaginal swab collected 1 hour (PC0), 24 hours (PC1), 48 hours (weak positive, PC2), and 72 hours (negative, PC3) after intercourse including semen contact.

## DNA Integration

Full Y-STR profile from RSID-Semen positive, PC2 extract (single tube method)



Y-STR profile from RSID-Semen negative, PC3 extract (single tube method)



## Conclusion

RSID-Semen is an effective and useful tool for semen detection that reduces cost and labor for forensic labs, and should become an essential tool to aid forensic scientists in crime scene investigations.