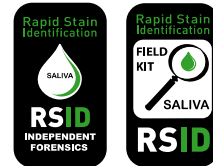


RSID-Saliva

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Introduction

RSID-Saliva utilizes two anti-salivary α -amylase monoclonal antibodies in a lateral flow immuno-chromatographic strip test format to detect the presence of salivary amylase, rather than the activity of the enzyme. We present experimental evidence demonstrating that this test is accurate, reproducible, easy to use, and highly specific for human saliva. In addition, we show that the test can detect saliva from envelopes, glass bottles, cans, swabs, and plastic lids before they are processed for DNA-STR analysis. Importantly, the test sensitivity has been adjusted such that if saliva is detected, there should be sufficient biological material for generating an STR profile.

Sensitivity

RSID-Saliva detects less than 1 μ l of human saliva.



Extract (μ l):	0	1	5	10	20
Saliva (μ l):	0	0.05	0.25	0.5	1.0

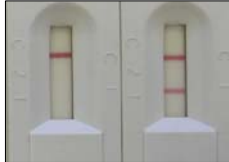
RSID-Saliva exhibits no high dose Hook effect.



	25	50	75	100	150
	1.25	2.5	3.75	5.0	7.5

Specificity

RSID-Saliva does not cross-react with human blood, semen, or urine.

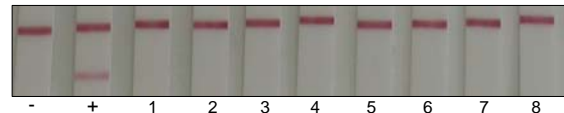


Body Fluids (1 μ l): B/Se/U B/Se/Sa/U

Other body fluids that do not cross-react: vaginal secretions, sweat, ear wax, amniotic fluid

Human breast milk and fecal/anal swabs exhibit low-level cross-reactivity due to the presence of α -amylase in these samples.

RSID-Saliva does not cross-react with animal saliva.

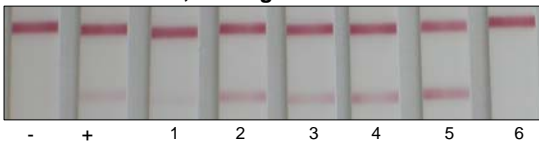


Animal saliva tested (1 μ l): tamarin (1), opossum (2), ferret (3), 2 different mix-breed dogs (4 and 5), callimico (6), horse (7), chameleon (8).

Other animal saliva that does not cross-react (1 μ l, not shown): llama, goat, sheep, border collie, marsh snake, hedgehog, domestic pig, domestic rabbit, mongoose, grey gull

Forensic Exhibits

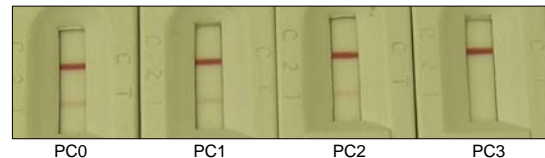
RSID-Saliva detects saliva from swabbed bottles, cans, and cigarette butts.



Samples tested (shown): plastic bottle (weak positive, 1), plastic mug (2), plastic bottle (3), ceramic mug (4), fresh cigarette butt (5), weathered cigarette butt (negative, 6)

RSID-Saliva also detects saliva from stamps and envelopes (not shown).

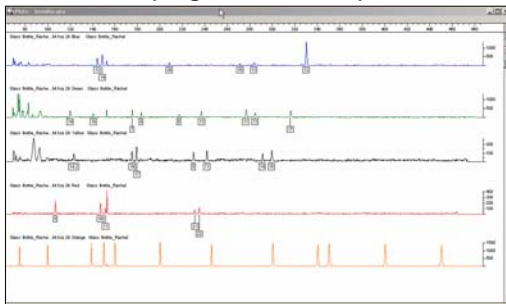
RSID-Saliva detects saliva from post-coital vaginal swabs.



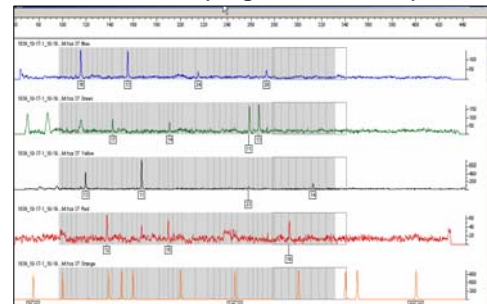
Samples shown: Vaginal swabs collected 1 hour (PC0), 24 hours (PC1), 48 hours (weak positive, PC2), and 72 hours (negative, PC3) after intercourse including oral contact.

DNA Integration

STR profile from RSID-Saliva positive bottle extract (single tube method).



Y-STR profile from RSID-Saliva positive cigarette butt extract (single tube method).



Conclusion

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