# **Forensic Chemistry Section**



Identification of Saliva Method

## 1. <u>Scope</u>

This document outlines the method for examining for the presence of saliva. Where it is reported that oral contact has been made with specific body parts or clothing articles and that these areas were swabbed (swabs in Sex Crimes Kit) or will be swabbed or cut (clothing articles), the Chemist may choose to test for the presence of salivary  $\alpha$ -amylase (a component of human saliva) prior to submitting these swabs for DNA analysis.

NOTE: Due to likely false positive results, female intimate body swabs (oral, genital, vaginal/cervical, and anal swabs) and the crotch area of underwear worn by a female will not be tested using the RSID<sup>TM</sup> - Saliva (Rapid Stain Identification of Human Saliva) test kit. This test will be considered a presumptive test for the presence of human saliva.

### 2. <u>Safety</u>

- 2.1 Disposable laboratory coats and disposable gloves will be worn when examining and handling evidence.
- 2.2 Disposable face masks will be worn as necessary.
- 2.3 Protective goggles will be worn when the alternative light source is in use.

### 3. <u>Examination</u>

- 3.1 In situations where saliva may have been deposited on clothing, bedding or other items, it may be necessary to screen these items with an alternate light source in order to locate possible saliva stains.
- 3.2 For general semen, saliva, perspiration, etc. screening, the alternate light source will be set at 530nm. Alternatively, a BattleLite with a blue 455 nm light head may be used as the light source.
- 3.3 The light source will be tested against a known semen or saliva standard.
- 3.4 The room must be as dark as possible to screen the sample.
- 3.5 A marking pen or chalk may be used to note all areas of fluorescence.
  - 3.5.1 A stain containing blood and saliva may not fluoresce.
- 3.6 The Chemist will determine which samples will be further tested for saliva.
- 3.7 Portions of individual swabs (approximately one quarter of the head) or cuttings will be sampled for saliva testing independent of seminal fluid/semen testing and DNA analysis.

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3.8 Each test sample will be placed in a sterile microcentrifuge tube and labeled accordingly.

#### 4. <u>Testing</u>

- 4.1 Testing for salivary α-amylase will be conducted using the RSID<sup>TM</sup> Saliva (Rapid Stain Identification of Human Saliva) test kit.
- 4.2 The sample, buffer, and test devices will be brought to room temperature.
- 4.3 A positive control will consist of a known saliva stain extracted in 100ul of RSID<sup>™</sup> Universal Buffer for 10 seconds, while shaking or vortexing, at room temperature.

NOTE: TE buffer will not be used for extractions.

- 4.4 A negative control will consist of the RSID<sup>TM</sup> Universal Buffer only.
- 4.5 300ul of RSID<sup>™</sup> Universal Buffer will be used for each test sample extraction. The amount of buffer may vary based on sample size and examiner discretion. Minimally, enough buffer to cover the sample should be used.
- 4.6 The samples should be shaken or vortexed consistently for at least 10 seconds at room temperature. Samples may also be extracted for up to 2 hours at room temperature, following agitation and a brief vortex.
- 4.7 Each test kit device will be labeled in such a way that any examiner could identify the sample.
- 4.8 100ul of the Universal Buffer extract will be added to the sample well marked "S" on the test device.
- 4.9 All cards will be read using the RSID<sup>™</sup> Reader (DETEKT Model RDS-2500<sup>™</sup>) after a 10 minute reaction time. A positive result cannot be read after the 10 minutes. An RDS-2500 Result Data page will be printed for each card result. These data pages will be maintained in the associated casefile folder.
- 4.10 The RSID<sup>TM</sup> Reader detects and interprets the card lines as follows:

The presence of a red line in the 'C' and 'T' areas of the test device indicates positive results – " $\alpha$ -amylase detected."

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NOTE: The reader should not be calling lines or shadows that are <u>not</u> red that may be observed in the 'T' area of the device. The reader also has a threshold or cut-off that allows it to call cards with very faint pink lines as negatives.

Negative results are indicated by the presence of a red line in the 'C' area of the test device and no reaction in the 'T' area (see above) of the test device. A negative result indicates that no  $\alpha$ -amylase is present or that the  $\alpha$ -amylase concentration is below the detection limit of the test.

When no red line develops in the 'C' area of the test device, the test is invalid and must be repeated. Also, if results of the positive and/or negative controls are erroneous, the controls and associated test sample must be re-tested.

- 4.11 At this time, RSID<sup>™</sup> Universal Buffer extracts will not be analyzed for DNA. The remaining swab or cutting portion will be extracted for seminal fluid/semen testing and/or submitted to the Forensic Biology Section for DNA analysis.
- 4.12 Refer to the Independent Forensics "Rapid Stain Identification of Human Saliva (RSID<sup>™</sup> Saliva)" Technical Information & Protocol Sheet for Use with Universal Buffer, Reduced Incubation Time Cat# 0130 for additional technical information regarding the use of the RSID<sup>™</sup> Saliva (Rapid Stain Identification of Human Saliva) test kit.