ML254 HiPer® SaliSure Kit

Kit Content:

Product Code	Material Provided	20 Tests
DS1886	Saliva Detection Paper 10cm^2	20 Nos
DS1887	Saliva Detection Stock Solution	1 ML
DS1888	Pre-Filled Diluent Tube-1 ml	20 Nos
PW013	Hi-FlexiLoop 4 (0.01 ml)	20 Nos
ML253	HiPura® Molecular Biology Grade Water (for forensic applications)	4 ML
PW043	Sterile Pure Viscose Swab (for sample collection)	20 Nos
PW1155A	Sterile Disposable Petri Plates	10 Nos

Introduction:

The HiPer® SaliSure Kit is designed for rapid identification of saliva for forensic use. This method relies on detecting salivary enzymes through an enzymatic-chemical reaction. The presence of saliva can be visually assessed by observing a white color appearing against a purple background on the saliva detection paper. The test is user-friendly and can be performed on-site within 20-25 minutes.

After blood, saliva is the most commonly found biological evidence at crime scenes. Its significance in forensic analysis extends to various aspects such as determining sex, establishing personal identity through DNA profiling, identifying ABO blood groups, discerning microbial signatures, detecting biomarkers, and even revealing lifestyle habits like smoking [1].

The kit can effectively detect saliva from a variety of surfaces, including fabric, metal, plastic, glass, tiles, and wood.

Stability and Storage:

The kit remains stable below 30°C and maintains its stability until the expiration date indicated on the packaging. After each use, ensure to store the unused saliva detection paper in the provided aluminum bag, securely sealed until its next use to maintain its stability.

Sensitivity:

The kit is capable of detecting saliva diluted up to 1:1000. It can also identify saliva stains up to one month old from various surfaces. If the collected sample is stored at a constant temperature and humidity, the kit may even detect stains that are several months old.

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Specificity:

The kit does not show positive results with other body fluids such as blood, urine, and vaginal fluids. However, it does indicate very weak positive results with semen. Additionally, the presence of salivary enzymes in breast milk might contribute to positive results.

Protocol:

Note:

1. Wear gloves while handling saliva detection paper.
2. Store the unused saliva detection paper in the provided zip-lock and aluminum bag and seal securely until its next use.
3. Working solution should be prepared freshly before conducting tests.
4. Do not freeze the kit components.
5. Ten sterile disposable petri plates are provided for 20 tests. Each petri plate includes a lid and a base, either of which can be used as a tray for a single test. Since each petri plate has two parts, a set of 10 plates is sufficient for 20 tests.

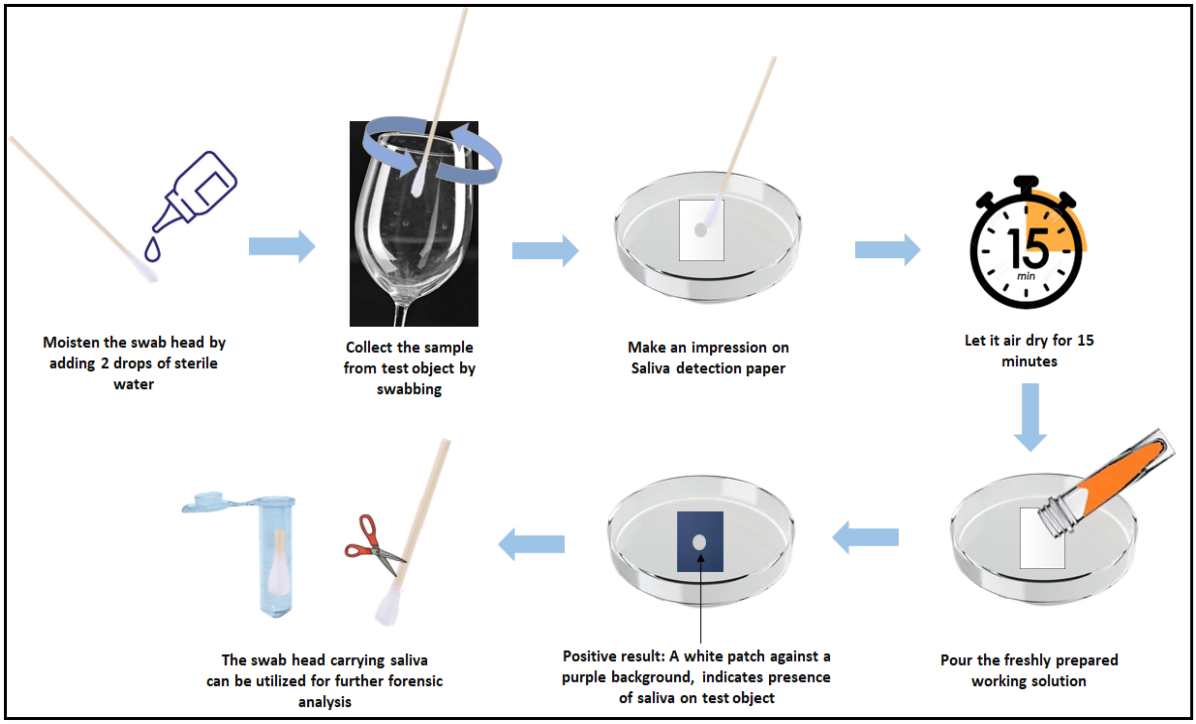

Fig 1. Schematic representation of saliva detection

Preparation of Working Solution for Saliva Detection:

1. Preparing a working solution for a single test requires one tube of Pre-Filled Diluent Tube-1ml (DS1888) and one loopful of the Saliva Detection Stock Solution (DS1887).
2. With a provided Hi-FlexiLoop (PW013), take a loopful of the Saliva Detection Stock Solution (DS1887) and insert it into a Pre-Filled Diluent Tube-1 ml (DS1888). Gently mix by moving the loop up and down within the tube to mix the stock solution with the diluent. Remove the loop, cap the tube securely, and then mix the solution by inverting the tube a few times.
3. The working solution is now ready for use in the protocol.

Protocol for detection of saliva from the suspected surfaces

1. Remove the Saliva Detection Paper (DS1886) from the pouch and place it in a provided petri-plate (PW1155A).
2. Moisten the sterile viscose swab head (PW043) by adding 2 drops of HiPura® Molecular Biology Grade Water (ML253).
3. Swab/wipe the suspected area/object with the wet swab (fig 1).
4. Create an imprint of a wet swab onto a saliva detection paper placed in a petri-plate.
5. Allow it to air dry at room temperature for 15 minutes.
6. Pour the entire 1 ml of the prepared working solution onto the saliva detection paper at once, as shown in Fig 1.
   Note: *Avoid adding the solution drop by drop; pour the full 1 ml at once.*
7. If saliva is present, a white spot will appear against the purple background within 10–20 seconds. However, it is recommended to wait 1 minute after adding the working solution to read the results accurately.
8. If needed, document it with a photo, as the coloration of the saliva detection paper tends to fade after around 25-30 minutes.
9. Swab head can be used for further forensic analysis.

Internal quality control:

Positive control: Apply a small drop of known saliva onto saliva detection paper, allow it to air dry for 15 minutes. Pour the 1ml freshly prepared working solution onto the paper ensure that the entire surface of the paper is fully covered with the solution. Read the results within 1 minute.

Negative control: Follow the same procedure as for the positive control, but instead of using known saliva, use distilled water to create the negative control.

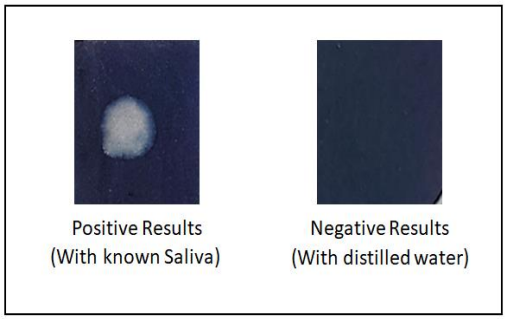

Fig 2. Internal quality control

Result Interpretation:

Positive Result (Saliva Detected):
Indicator: White patch against a purple background on the saliva detection paper, often bordered by a bluish tint.
Note: The exact color and shape of the positive result may vary.

Negative Result (No Saliva Detected or Below Detection Limit):
Indicator: The saliva detection paper remains throughout purple, with no distinct white patch.
Note: The intensity of the purple color may vary.

Invalid Result:
Indicator: Known positive and/or negative control indicates an incorrect result.
Action Required: Repeat the test with a new saliva detection paper and fresh working solution. Ensure the entire paper is covered with the working solution, avoid air bubbles under the paper, and read the result within the specified time frame.

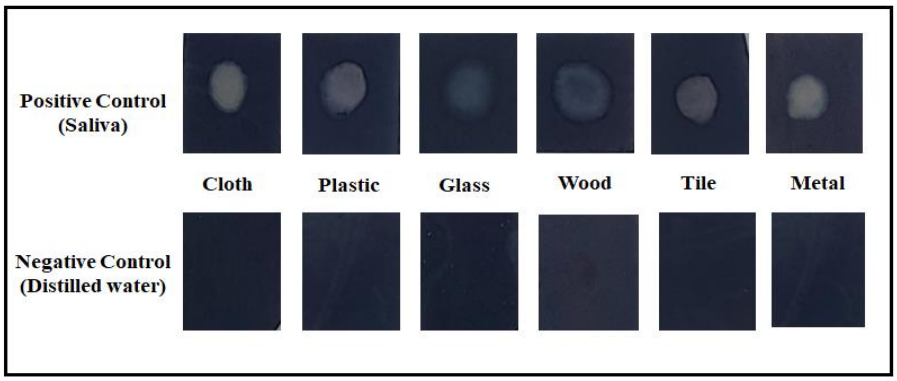

Fig 3. Saliva detection on various surfaces using Positive and Negative Controls

References:

1. Megha Upadhyay, Pankaj Shrivastava, Kapil Verma, Bhawana Joshi Recent advancements in identification and detection of saliva as forensic evidence: a review. Egyptian Journal of Forensic Sciences (2023) 13:17.
2. John SJ, Rajaji D, Jaleel D, Mohan A, Kadar N, Venugopal V. Application of Saliva in Forensics. Oral Maxillofac Pathol J 2018;9(2):85-87.

SYMBOLS USED ON LABELS

	Manufacturer		Batch code
	Date of manufacture (YYYY-MM)		Catalogue number (commercial product name", commercial product code")
	Use-by date (YYYY-MM)		Consult instructions for use

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