SIGNALCHEM
DIAGNOSTICS

User Manual

SignalChem Diagnostics

Cannabis Gender Identification Kit

For early rapid on-site cannabis sexing, to maximize harvest, optimize resources, and maintain crop purity

Diagnostic Reagents For Accurate And Reproducible Results

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Cat# CNB01-K799
Cat# CNB02-K799

Introduction

This manual is for both Cannabis Gender ID Starter Kit (Cat# CNB01-K799) and Cannabis Gender ID Standard Kit (Cat# CNB02-K799). The device used for gender identification is sold separately—CRISPOT Detection Device (Cat# CSP01-V19A).

To identify the gender of your cannabis plants, all you need is the starter (or standard) kit and CRISPOT device. There is no need to send you samples elsewhere for analysis. CRISPOT detects a male-specific gene in leaf samples, allowing you to identify male specimens in a cohort. It is important to label your samples according to the plants they were extracted from to avoid confusion. Sample preparation and device setup take approximately 10 minutes. Once started, it will take 25 minutes for the detector to run the test.

For first-time use, the Starter Kit is required. For subsequent tests, the Standard Kit is suitable.

Disclosure

This product is not to be used as a drug, medical device, food additive, cosmetic, or household chemical. It is not to be used in therapeutic, consumer, or pesticidal applications. Not for resale.

Support

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Table of Contents

User Guide

Kit Components

#	Component	Amount	Package
1	PCR tube strips with Master Mix	16 wells/kit	2 strips in a white container
2	Buffer A (lysis buffer)	200 µL each, 16 vials/kit	1.5 mL screw-cap tube, in a plastic bag
3	Buffer B (reaction buffer)	1.5 mL each, 16 vials/kit	2.0 mL screw-cap tube, in a plastic bag
4	Grinding rods	16	16 rods in a plastic bag
5	Pipette tips	36	36 tips in a plastic bag
6	Pipette*	1	in a separate box
7	Tube rack*	1	in a separate box
8	User manual	1	in a plastic bag
9	CRISPOT Detection Device	1	sold separately

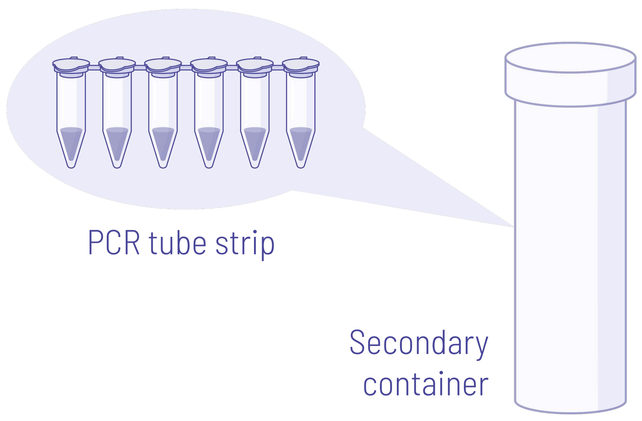
Components marked with an asterisk (*) are included in the Starter Kit only

Not Provided

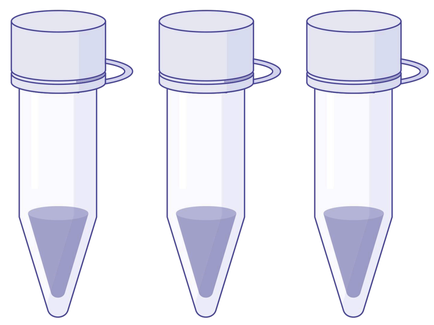
Gloves
Bleach solution

Kit Components: Visual Guide

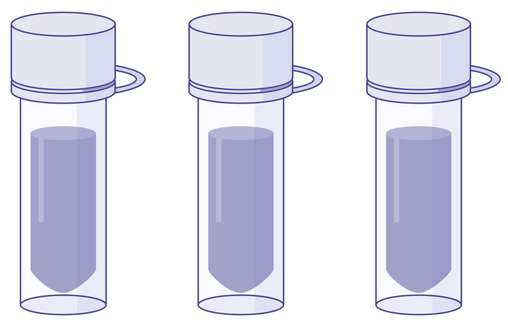
1. PCR tube strips with Master Mix, in a white container



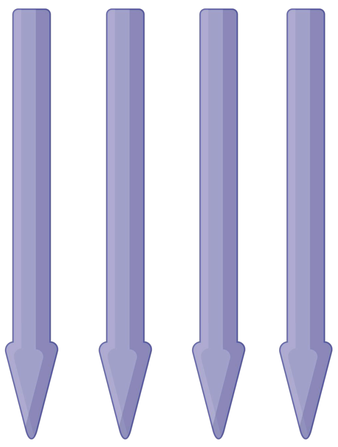
2. 200 µL lysis buffer in the 1.5 mL screw-cap tubes, in a plastic bag (Buffer A)



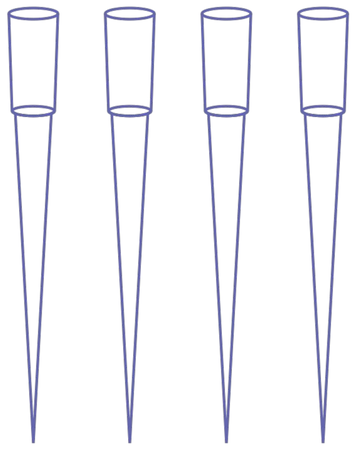
3. 1.5 mL reaction buffer in the 2.0 mL screw-cap tubes, in a plastic bag (Buffer B)



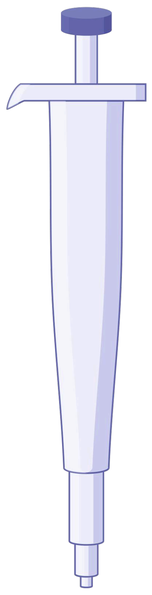
4. Grinding rods



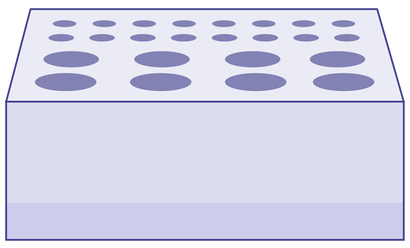
5. Pipette tips, in a plastic bag



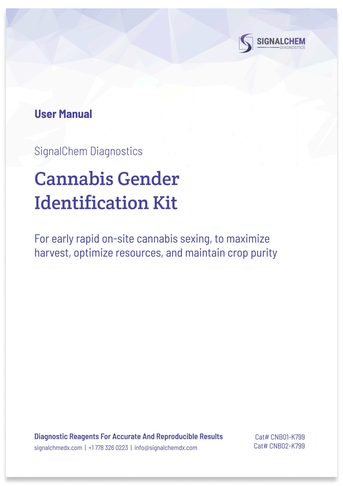
6. Pipette



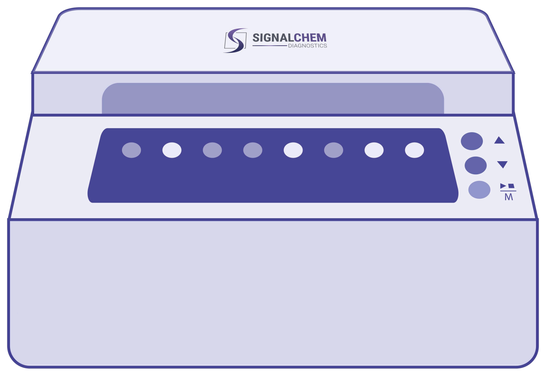
7. Tube rack



8. User manual



9. CRISPOT Detection Device



Storage and Precautions

Kit Storage

All kit components should be stored at 2–25°C for up to 6 months.

Premixtures in the PCR tubes (component 1) need to be protected from light. The secondary (white) container provides light protection as long as the lid is securely closed. Keep the strips in the container at all times except for the immediate use. Failing to protect the strips from light can result in their deterioration and faulty experiment results.

Before use, allow the kit components to sit at room temperature for 10 minutes to ensure optimal performance.

Store the kit components in their original packaging (sealed container) to protect them from moisture.

Precautions

- Put on a new pair of examination gloves when taking a sample and the performing assay.
- Do not re-use disposable kit components.
- Clean work area and non-disposable equipment with a 10% bleach solution before and after the experiment.

Sample Preparation

Protocol

1. Place a number of Buffer A (2) and Buffer B (3) tubes on a tube rack. The number of tubes of each buffer equals the number of samples. Ensure that the liquid is at the bottom of the tubes.
2. Label the tubes according to the plant samples (example: BA sample 1, BB sample 1).
3. Open the cap of Buffer A and place one leaf onto the mouth of the tube. Cut the leaf sample by tightening the tube cap, and discard any excess leaf material.
4. Take a new tissue grinding rod (4) and grind the circular leaf in Buffer A for 1 minute until no leaf chunks are visible.
5. Close the tube and discard the rod.
6. Repeat steps 3-5 for each plant sample being tested.
7. Allow the ground samples to sit for 3 – 5 minutes to help separate the solids from liquids.
8. Open the bag of pipette tips (6), take one without touching either of its ends, take the pipette (5) and without touching the end of the pipette with your hands, mount the tip onto the pipette. Press gently to ensure that the tip is secured on the pipette.
9. Using the pipette, transfer 25 µL of the supernatant (the liquid above the solid residue, excluding the residue itself) from the tube with Buffer A into a tube with Buffer B, recap the tube, and invert it 5 to 6 times to mix thoroughly. Discard the used tip. Use new pipette tip for each sample.

Using the Pipette

The pipette is calibrated to 25 µL. Press the plunger to the stop. Place the tip into the liquid. Slowly release the plunger to draw up the liquid. Move the tip to the container where you want to release the liquid. Press the plunger firmly to the stop to dispense the entire volume. Maintain downward pressure on the plunger while withdrawing the tip from the liquid to prevent re-aspiration.

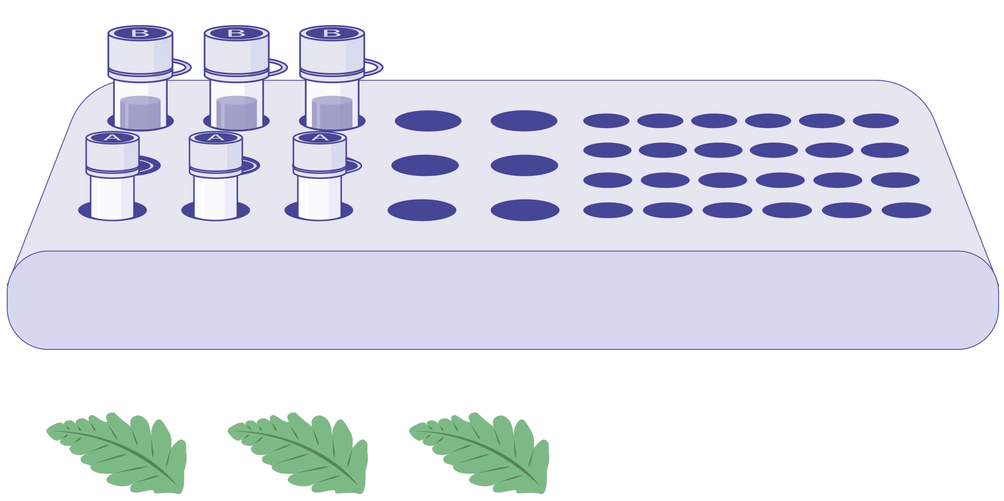
Warning

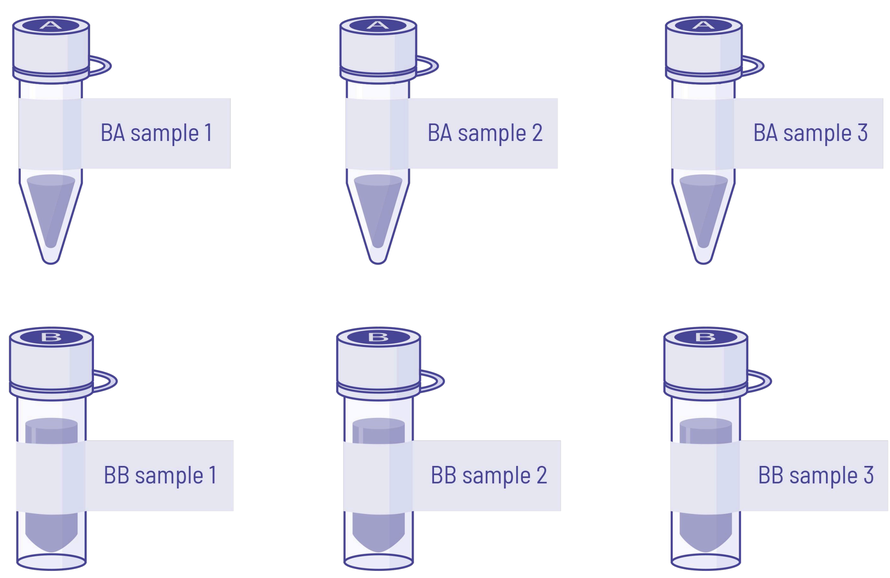
- Ensure that each leaf sample is fully submerged in Buffer A before grinding.
- Change gloves and tissue grinding rods between each sampling to avoid cross-contamination.
- Use a new pipette tip for each sample to prevent cross-contamination.
- Dispose of used materials in the regular garbage container.

Sample Preparation: Visual Guide

Protocol

1. Place a number of Buffer A (2) and Buffer B (3) tubes on a tube rack. The number of tubes of each buffer equals the number of samples. Ensure that the liquid is at the bottom of the tubes.





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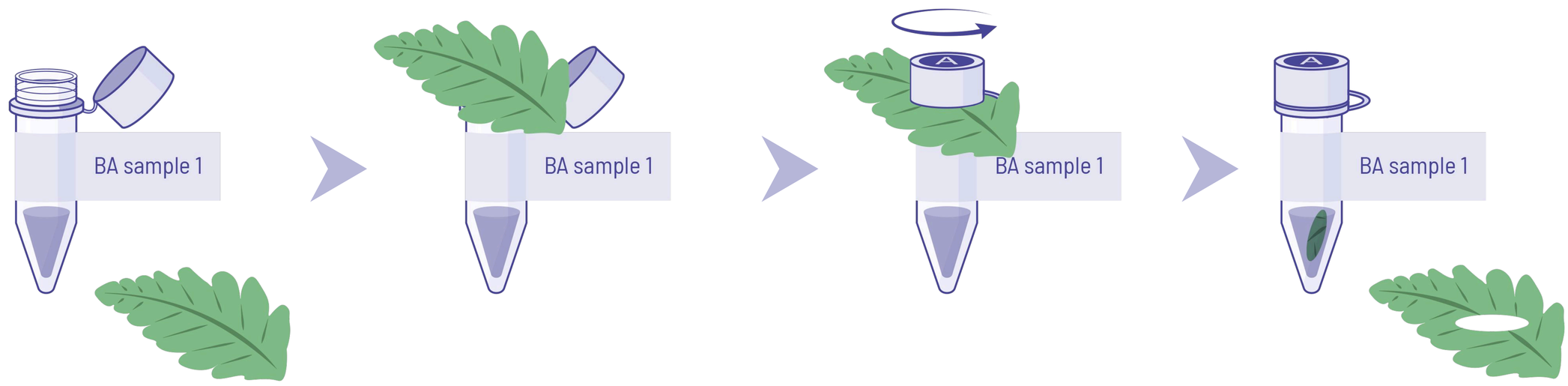

Sample Preparation: Visual Guide

Protocol

4. Take a new tissue grinding rod (4) and grind the circular leaf in Buffer A for 1 minute until no leaf chunks are visible.

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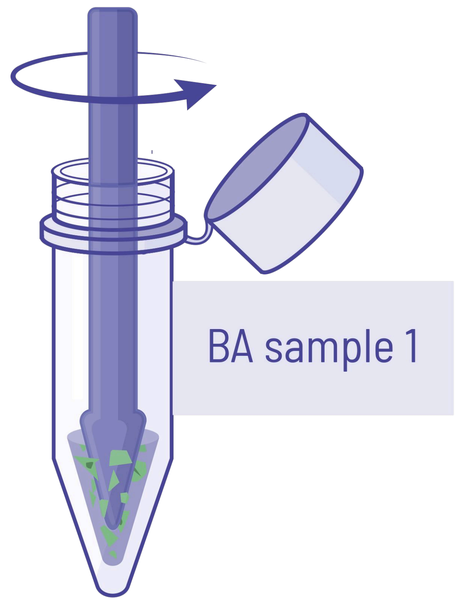

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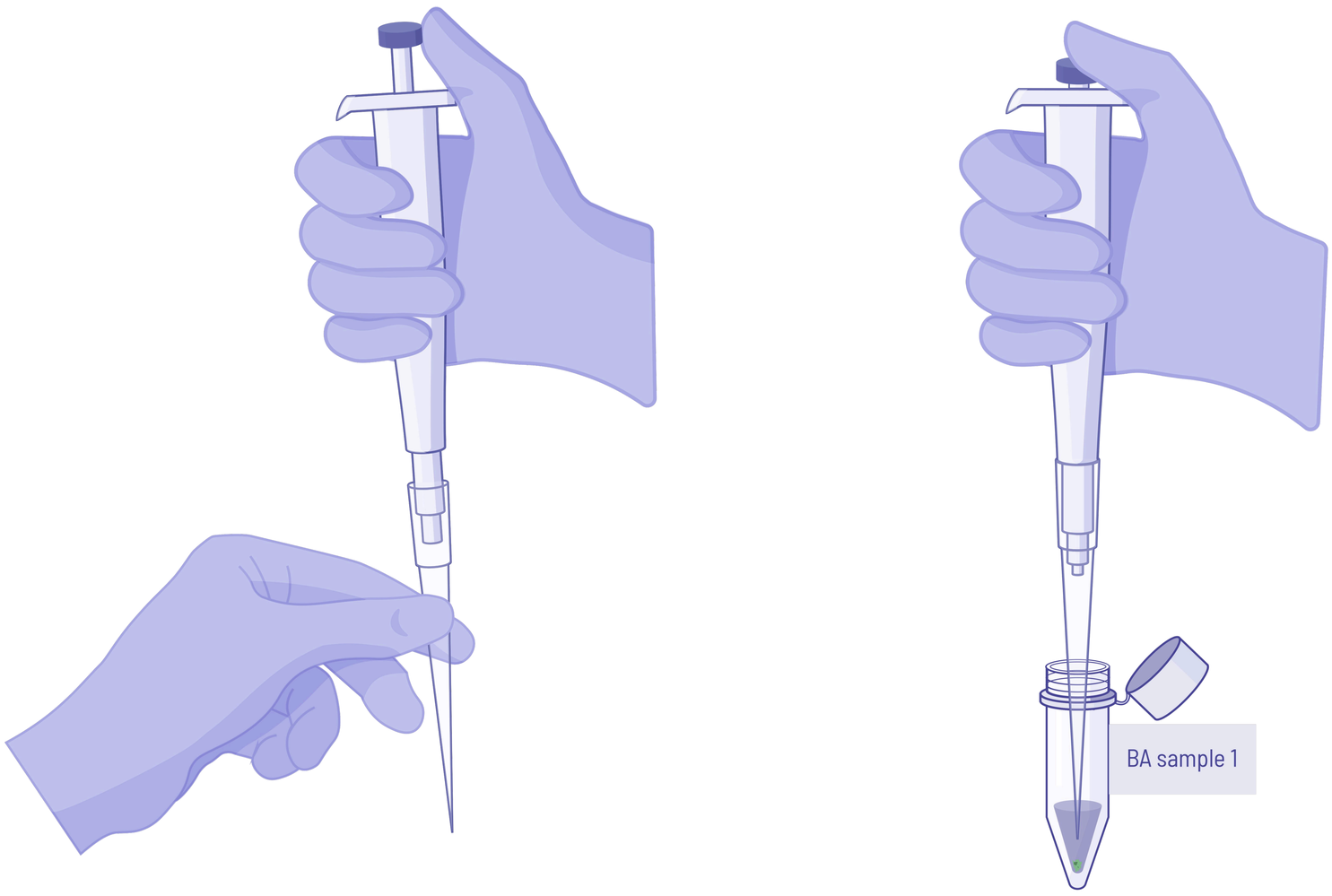

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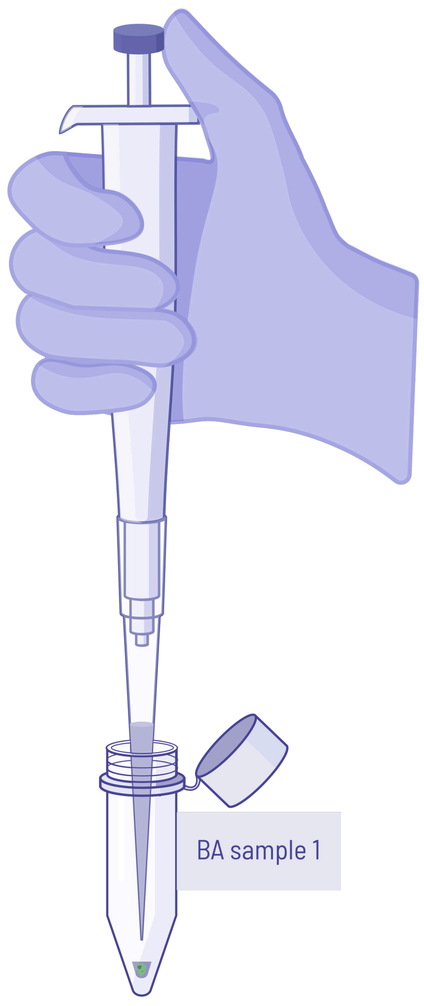
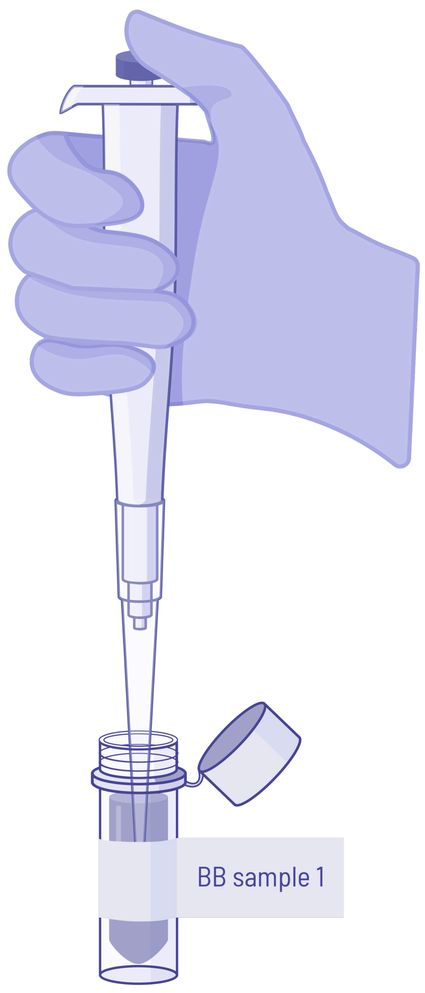
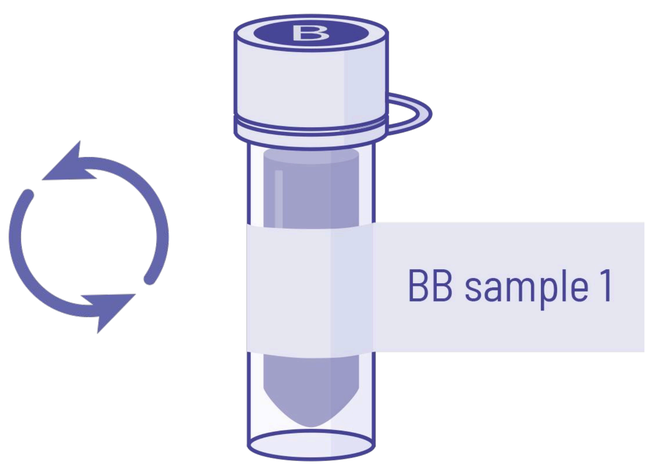
Sample Preparation: Visual Guide

Protocol

9. (Continued) Using the pipette, transfer 25 µL of the supernatant (the liquid above the solid residue, excluding the residue itself) from the tube with Buffer A into a tube with Buffer B, recap the tube, and invert it 5 to 6 times to mix thoroughly. Discard the used tip. Use a new pipette tip for each sample.







Analysis

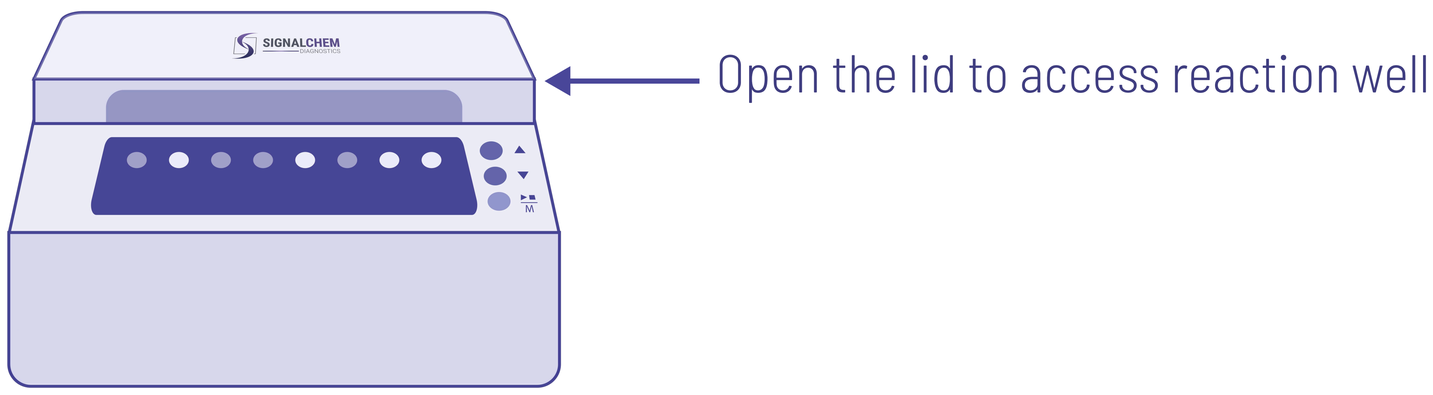
Final Steps

1. Retrieve a PCR tube strip from the secondary container (1) included in the kit. Cut the strip to obtain a number of tubes corresponding to the number of samples to be tested.
2. Using the pipette, transfer 25 µL of Buffer B containing the sample extract into the PCR tubes. Each sample must go into a separate PCR tube. Keep track of which sample corresponds to which tube.
3. Close the PCR tubes securely and mix the contents by flicking the bottom of the tube 3 to 5 times, then shake the liquid down to the bottom of the tubes.
4. Place the PCR tubes inside the reaction well of the CRISPOT device.
5. Turn on the CRISPOT device (9). For detailed instructions on operating the device, refer to the CRISPOT Instructions for Use provided with it.
6. Once turned on, CRISPOT will display three operational modes: Heating, Program, and Custom. Use the Up and Down buttons (located to the right of the screen) to select **Program Mode**.
7. Press the Start button to initiate the test.
8. Wait 25 minutes for the test to complete.
9. Once finished, the screen will display "Completed."
10. Interpret the results. Refer to the Results Interpretation section (page 12) to read CRISPOT output.

Note: When the test is running, the CRISPOT screen will display real-time status prompts:
"Heating...": Heating mode is active for sample preparation.
"Testing...": Program or Custom mode is active.
If the process is interrupted, the screen will display "Aborted."
Test can be manually terminated by double-clicking the Start button.

Warning

- Use a new tip for transferring each sample to prevent cross-contamination.
- Recap the tubes securely after each step to prevent contamination and evaporation.
- After CRISPOT completes the analysis, do not open the used PCR strips to prevent contamination.



Result Interpretation

Reading CRISPOT Output

The detector screens for a male-specific gene in each sample. If it is present, the result is positive, and the light will turn **red**, indicating that the sample was taken from a **male plant**.

The display will indicate the results for each sample well:

- Red tube: Indicates a positive result (male).
- Green tube: Indicates a negative result (female) or an empty well.