

Powdery Mildew qPCR (TBS42044)

Catalog Number

TBS42044-100

TBS42044-200

Kit Size

100 assays

200 assays

DESCRIPTION

TribioScience's Powdery Mildew Detection qPCR Kit is designed for the rapid detection of powdery mildew DNA in cannabis and hemp plant samples using real-time quantitative polymerase chain reaction (qPCR) with fluorescent probe detection, as shown in Fig. 1.

The assay targets the common powdery mildew species that infect cannabis and hemp plants. These include *Golovinomyces cichoracearum*, *Golovinomyces spadiceus*, *Golovinomyces ambrosiae*, and *Podosphaera macularis*.

The assay uses a multiplex qPCR format with powdery mildew target primers and probes to detect powdery mildew. The target probe is labeled with FAM fluorescence and an internal control labeled with HEX fluorescence. The assay provides a sensitive and simple approach to detect plant powdery mildew.

KEY FEATURES

- High sensitivity and high specificity: Detect *Golovinomyces* and *Podosphaera macularis* powdery mildew species.
- High efficiency: The optimal systemic conditions for PCR amplification.
- Streamlined protocol: Just add DNA template and water.
- No cross-reactivity with other species.

APPLICATIONS

Detection of powdery mildew in cannabis, hemp, and other plant material.

KIT CONTENTS

Name	100x rxn	200x rxn
PCR Mix	0.8 mL	1.6 mL
Powdery Mildew Primer-probe Mix	0.5 mL	1.0 mL
Powdery Mildew Positive Control	60 µL	120 µL
Powdery Mildew Negative Control	60 µL	120 µL

The Powdery Mildew target is labeled with **FAM**, while the PCR internal control is labeled with **HEX**.

STORAGE CONDITIONS

The kit is shipped on ice and should be stored at -20°C for long-term storage. The shelf life is 12 months after receipt.

PCR PROTOCOL

1. DNA Sample Preparation:

DNA extraction from samples should be performed using a suitable method. We recommend Tribioscience microbial DNA Magnetic Extract Kit (TBS6025) or Fast DNA Extraction Kit (TBS6008) for rapid DNA preparation from plant samples.

2. qPCR Setup:

2.1 Prepare PCR Master Mix

qPCR Master Volumes

Reagents	1 Reaction
qPCR Mix	7 µL
Primer-probe Mix	4 µL
Water	4 µL
DNA Sample	5 µL
Total	20 µL

Prepare enough master mix for your samples plus two controls (positive and NTC). Add 10% overage to the master mix components to account for pipetting and dead volumes.

2.2 Transfer samples and master mix to PCR plate

- Transfer 5 µL of each sample, 5 µL Positive Control, and 5 µL Negative Control into separate wells of a qPCR plate in duplicate manner.
- Transfer 15 µL of freshly prepared qPCR Master Mix to each well and slowly tip mix. Avoid adding bubbles to the mixture.

2.3 Seal plate tightly, spin in plate centrifuge and load on qPCR machine.

2.4 Set up qPCR cycling parameters as below:

Step	PCR Amplification		
	Pre-denature	CYCLE (40x cycles)	
		Denature	Anneal/ Extend
Temperature	94°C	94°C	60°C
Time	1 min	10 sec	60 sec

2.5 Start the run.

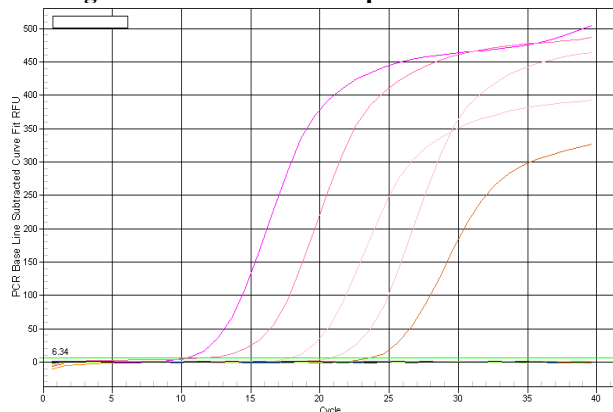
2.6 When the run is complete, the plate can be discarded.

2.7 Proceed to data analysis.

Data Analysis:

- Powdery mildew Positive (FAM): Sample Ct ≤ 37 at Positive control and Negative and Blank controls normal amplification.
- Powdery mildew Negative (FAM): Sample Ct ≥ 38 or non-amplification at Positive control and Negative and Blank controls normal amplification.
- PCR internal control (HEX) is positive signal in all samples, positive and negative controls. The internal control amplification indicates a normal PCR amplification. Otherwise, the PCR reaction may be inhibited.
- Repeat Reaction: If one of the control reactions is not normal, PCR reaction fails and should be repeated.

Fig.1: Positive Control Amplification Curve



RELATIVE PRODUCTS

TBS6008: Fast DNA Extraction Kit
 TBS6025: Microbial DNA Magnetic Extraction
 TBS6039: Dead Bacterial DNA Eraser
 TBS42024: Aspergillus Terreus qPCR
 TBS42025: 4-In-1 Aspergillus qPCR
 TBS42029: STEC and Salmonella Multiple qPCR
 TBS42030: Mycoplasma Detection qPCR
 TBS42031: Listeria Monocytogenes qPCR
 TBS42032: Listeria Species qPCR
 TBS42033: Bacillus Cereus Species qPCR
 TBS42034: Bacillus Species qPCR
 TBS42046: Cannabis Gender Detection qPCR
 TBS42050: Staphylococcus-Pseudomonas Multiple qPCR
 TBS42051: E. Coli and Salmonella Multiple qPCR
 TBS42053: Bacillus Subtilis qPCR

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