Penicillium sp. Real-Time PCR Control (100)

Cat. No. *CPD-576*

Lot. No. (See product label)

Product Name

Penicillium sp. Real-Time PCR Control (100)

Product Overview

Penicillium sp. Real-Time PCR Control (100) is designed for the detection of Penicillium sp. DNA based on the use of real-time PCR technology.

Description

Penicillium sp. Real-Time PCR Control (100) is designed for the detection of Penicillium sp. specific DNA based on the use of real-time PCR technology. The detection of Penicillium sp. specific DNA is providing a simple, reliable and rapid result for the detection of Penicillium sp.. Penicillium sp. Penicillium sp. Real-Time PCR Control (100) includes a PCR control to monitor for PCR inhibition, and to validate the quality of the sample and the detection result. The Penicillium sp. Real-Time PCR Control (100) comprises Master Mix for the target and PCR control detection, Primer & Probe Mix, as well as a positive control and a negative control (nuclease-free water) to confirm the integrity of the kit reagents.

Kit Components

Component Product
2X PCR Master Mix 350 µL
Penicillium sp. Primer & Probe Mix 70 µL
Penicillium sp. Positive Control 50 µL
Nuclease-Free Water (Negative control) 1.25 mL
Product Insert 1

Materials Required but Not Supplied

Appropriate Real-Time PCR Instrument with FAM and HEX filter channel;
DNA Purification Kit: The kit is compatible with all DNA purification kits that yield high quality, inhibitor-free DNA;
Disposable powder-free gloves;
Benchtop microcentrifuge;
Micropipettors;
Sterile pipette tips with filters;
PCR tubes;
Vortex mixer;
PCR reaction preparation station (Optional).

Scientific Background

Penicillium is major causative agents of food spoilage (dairy products, fruits, vegetables and meat) and postharvest decay. The genus causes significant economic losses to the fruit industry and is also of potential public health significance since Penicillium species (Penicillium sp.) produce a number of mycotoxins known to cause harmful effects in humans and animals. Penicillium is also a huge problem in the wine industry. Its presence in wine and grape juice during the various stages of fermentation is highly detrimental to the quality of the wine due to the production of compounds such as Geosmin (trans-1,10-dimethyl-trans-9-decalol) an earthy-musty compound which produces off odours and flavours. For these reasons the rapid and specific detection of Penicillium species are important for ensuring microbiological quality and safety of fruits and juices among other foods.

Detection method

Real-Time PCR

Preparation

Before use, suitable amounts of all Real-Time PCR components should be completely thawed at room temperature, mixed by gentle vortexing or by pipetting, and centrifuged briefly.

FOR RESEARCH OR FURTHER MANUFACTURING USE ONLY

Address: SUITE 209, 17 Ramsey Road, Shirley, NY 11967
Tel: 1-631-356-5138 Fax: 1-631-910-2166
E-mail: info@lifeasible.com
https://www.lifeasible.com

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Assay Protocol

1. For each Real-Time PCR set, prepare one no template control PCR as shown in Table 1 below:
Table 1. PCR Negative Control Preparation
PCR Components Quantity
Nuclease-Free Water 8 µL
2X PCR Master Mix 10 µL
Penicillium sp. Primer & Probe Mix 2 µL
Total Volume 20 µL

2. Prepare the PCR reaction for sample detection as shown in Table 2 below.
Table 2. PCR Aspergillus niger Assay Preparation
PCR Components Quantity
Nuclease-Free Water 5 µL
2X PCR Master Mix 10 µL
Penicillium sp. Primer & Probe Mix 2 µL
Sample DNA* 3 µL
Total Volume 20 µL

3. For each PCR set, prepare one positive control PCR as shown in Table 3 below:
Table 3. PCR Positive Control Preparation
PCR Components Quantity
2X PCR Master Mix 10 µL
Penicillium sp. Primer & Probe Mix 2 µL
Penicillium sp. Positive Control (PosC) 8 µL
Total Volume 20 µL

Sample Type

Plant tissues

Storage

All kit components should be stored at -20°C upon arrival;
Repeated thawing and freezing (> 2 x) of the Master Mix and Positive Control should be avoided, as this may affect the performance of the assay. If the reagents are to be used only intermittently, they should be frozen in aliquots;
All reagents can be stored for 1 year at -20°C without showing any reduction in performance.

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