Tribioscience

Alfalfa J101 qPCR Detection Kit (Catalog: TBS43008-100)

Probe qPCR Detecting GMO Marker J101 from Alfalfa

DESCRIPTION

Genetically modified (GM) alfalfa has been authorized for cultivation in several countries since 2005. However, cultivation in or export to some regions is not allowed. Therefore, event-specific detection is needed for GM alfalfa. The real-time qPCR method is sensitive and robust and is regarded as the gold standard for GMO analysis.

The Alfalfa J101 qPCR Kit is designed for identifying GMO marker J101 presence or absence in alfalfa crops, feed and seeds using real-time quantitative polymerase chain reaction(qPCR), primers, and labeled probes. The Kit includes maize J101 Positive and Negative controls, and PCR internal controls, qPCR Super Mix, Alfalfa J101 Prime-Probe Mix, in which the probe is labeled with Fam, and Hex is labeled for PCR internal control. This aids in the straightforward interpretation of the results.

PRINCIPLE

GMO marker identification is based on qPCR amplification of a specific region of the relevant target genome. The amplified product is detected using target-specific fluorescent probes that bind to the amplified product. As the PCR product accumulates, there is an increased fluorescent signal from the bound probes. Monitoring the fluorescence intensities during the PCR run allows the detection of the accumulating PCR product in real time.

KEY FEATURES

- ❖ Highly sensitivity and specificity for identification of J101.
- ❖ High efficiency: the optimal systemic conditions for PCR amplifications.
- ❖ Streamlined protocol: Just add DNA Template, and water.
- ❖ No cross reactivity with others.

APPLICATIONS

Detect J101 in alfalfa crop feed and seeds.

KIT CONTENTS

Name	100RXN
qPCP Super Mix	0.8 mL
Primer-probe Mix	0.3 mL
Positive Control DNA	60 µL
Negative Control DNA	60 µL

J101 gene is labeled with FAM.
Alfalfa internal control is labeled with Hex.

STORAGE CONDITION

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

PCR PROTOCOL

1. **DNA extraction:** The methods for DNA extraction can be used for any suitable preparation of DNA purification from food samples. We recommend that the Fast genomic DNA extraction method is used for this purpose (catalog: TBS6008).
2. **Set up PCR reaction for each sample in 20 µL**

Reaction Component	Volume (µL)
qPCP Super Mix	7.0
Primer-probe Mix	3.0
Nuclease-free Water	5.0
DNA sample	5.0
Final Volume	20 µL

Internal control should be included as below: Positive Control or Negative control (5 µL /reaction).

3. **Suggested PCR conditions**

Step	Amplification	PCR	
	HOLD	CYCLE (40 cycles)	
		Denature	Anneal/ Extend
Temperature	95 °C	95 °C	60 °C
Time	1 min	15 sec	60 sec

DATA ANALYSIS

Positive Reaction: Sample Ct < or = 30， and Positive, Negative and Blank controls are normal.
Negative Reaction: Sample Ct ≥ 37， and Positive, Negative and Blank controls are normal.
PCR internal control is positive in all samples, positive and negative controls. The positive response 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.

RELATIVE PRODUCTS

TBS6008: Fast Genomic DNA Extraction
TBS6025: Microbial DNA Magnetic Extraction
TBS43001: Maize GMO 98140 qPCR Detection
TBS43003: Maize GMO DBT418 qPCR Detection
TBS43004: Maize GMO LY038 qPCR Detection
TBS43005: Maize GMO Mon863 qPCR Detection
TBS43006: Maize GMO Mon87411 qPCR Detection
TBS43009: Alfalfa J163 qPCR Detection
TBS43010: Alfalfa KK179 qPCR Detection
TBS43007: Maize GMO DAS-59132 qPCR Detection
TBS42025: 4-In-1 Aspergillus Species qPCR
TBS42026: O157H7 E. Coli qPCR
TBS42028: Salmonella qPCR
TBS42029: Salmonella-STEC qPCR
TBS42031: Listeria Monocytogen qPCR
TBS42032: Listeria Species qPCR
TBS42033: Bacillus Cereus qPCR

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