MANUAL

GENAXXON bioscience

InhibiCore Rapid Plant DNA Q-Extraction PCR Kit

Direct PCR from Plant Samples – fast, robust and inhibitor-resistant

Component / Cat#	M3252.0100	M3252.0500	Colour code of cap
Plant DNA Q-Extraction Solution	10mL	5 x 10mL	white
InhibiCore Rapid Plant PCR MasterMix (5X)	400µL for 100x 20µL reactions	5x 400µL for 500x 20µL reactions	green

Description

The **InhibiCore Rapid Plant DNA Q-Extraction PCR Kit** is a combined solution for **rapid DNA analysis from plant material**. It integrates the **Plant DNA Q-Extraction Solution (M3230)** with the **InhibiCore Rapid Plant PCR MasterMix (5X) (M3250)**, providing a complete workflow from sample preparation to qPCR analysis.

Plant tissues commonly contain PCR-inhibiting compounds such as polyphenols, polysaccharides, and other secondary metabolites. The kit is designed to **overcome these inhibitory effects** and enables reliable, sensitive, and reproducible qPCR results even from challenging plant matrices.

The Plant DNA Q-Extraction Solution allows **rapid DNA release without the need for conventional extraction procedures**. In combination with the inhibitor-resistant PCR Master Mix, this enables a **direct PCR workflow** that reduces handling time and simplifies sample processing.

The InhibiCore Rapid Plant PCR MasterMix (5X) is based on a modified HotStart Taq DNA polymerase, providing high specificity, sensitivity, and robustness. Its **high tolerance to PCR inhibitors** makes it suitable for applications in plant research, agriculture, and quality control. The InhibiCore Rapid Plant PCR MasterMix (5X) is suitable for standard PCR as well as probe-based and dye-based qPCR applications.

The master mix is **lyo-ready** and includes **dUTP** for optional carry-over contamination control in combination with **UDG (Uracil-DNA Glycosylase)** (please note: UDG is not included!). The HotStart polymerase allows convenient **room-temperature reaction setup** without the need for cooling.

Product specifications

Concentration:	5X ready-to-use master mix
TaqMan Probe compatibility:	Yes
Standard Amplicon Size	100-1500bp (optimal: 70-150bp)

Advantages

Complete kit for **fast direct PCR from plant material**
Includes **extraction + inhibitor-resistant qPCR master mix**
High inhibitor tolerance for robust amplification
Fast workflow without conventional DNA extraction
Lyo-ready mastermix with optional **UDG-based contamination control**

Shipment: on wet ice

Long-Term Storage: Stored at -20°C immediately upon receipt.

Shelf-life: Stable until expiration date when stored and handled correctly.
DNA Q-Extraction Solution tolerates up to 20 freeze-thaw cycles. It is recommended to aliquot the Q-Extract into smaller volumes.

Important notes before getting started

- This protocol is a guideline; optimize conditions as needed.
- Readjust threshold value for analysis of every run.
- InhibiCore Rapid Plant PCR MasterMix provides an optimized concentration of MgCl2 which will produce satisfactory results in most cases.
- Set up all reaction mixtures in an area separate from that used for DNA preparation or PCR product analysis.
- Use disposable tips containing hydrophobic filters to minimize cross-contamination.
- Contamination control can be inforced by the use of UDG. Mix already contains dUTP, but NO UDG (must be added).

Extraction Protocol

Thaw Plant DNA Q-Extraction solution

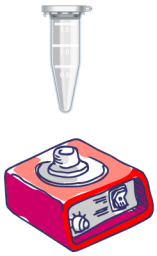
For the first time use, mix the Plant DNA Q-Extraction solution well and aliquote it into smaller volumes. (DNA Q-Extraction Solution has a cloudy appearance).

Add your sample to a tube containing 100µL Plant DNA Q-Extraction Solution

Recommended sample sizes

Sample	Plant DNA Q-Extraction Solution 100µL	500µL
Plant tissue*	2 -10mg	10 - 50mg

* Examples of tested plant materials include leaves from stinging nettle, ivy, tomato and wheat.



Vortex the tube containing the sample and the Plant DNA Q-Extraction Solution for 15 sec.

Make sure that the sample is completely covered by the Plant DNA Q-Extraction Solution.

Transfer the tube to a heat block or a thermal cycler and incubate as indicated in the table on the right.

Incubation

Time	Temperature
6 min	65 °C
2 min	98 °C
hold	4 °C or cool down on ice

DNA extracts are stable at -20°C for one week or long term at -80°C.

Please note:
Plant DNA lysate should be diluted 5- to 10-fold prior to PCR. We recommend performing a serial dilution.

PCR Protocol

Thaw primer solutions

Mix well before use.

Optional:

Prepare a primer mix of an appropriate concentration using sterile, nuclease-free water. This is recommended if several amplification reactions using the same primer pair are to be performed.

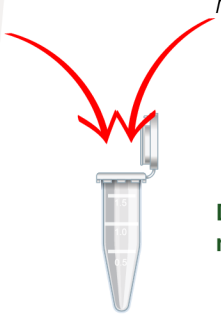
Thaw InhibiCore Rapid Plant PCR MasterMix (5X) at RT.

Mix well before use.

It is very important to mix the InhibiCore Rapid Plant PCR MasterMix (5X) well before use to avoid local differences in salt concentration.

The Genaxxon bioscience InhibiCore Rapid Plant PCR MasterMix (5X) is provided as a 5X concentrated mix (i.e. a 4µL volume of InhibiCore Rapid Plant PCR MasterMix (5X) is required for qPCR reactions with a final volume of 20µL). A negative control (qPCR without template DNA) should be included in every experiment. It is recommended that the PCR tubes are kept on ice until they are placed in the thermal cycler.

primer
template DNA
Alternatively: Probes OR GreenDye
Nuclease-free H_2O

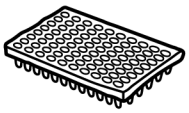


Distribute 20 µL reaction mix into each tube.

Protocols for either standard PCR, probe-based or dye-based qPCR

Components	Quantities/Final concentration
InhibiCore Rapid Plant PCR MasterMix (5X)	4µL
primer 1 (4µM):	1µL [200nM (100-400nM recommended)]
primer 2 (4µM):	1µL [200nM (100-400nM recommended)]
Plant lysate*	2µL (10fold dilution)
Nuclease-free water	up to 20µL
Alternatively: **For probe-based qPCR:** **Probe (8µM)**	1µL [400nM (200-600nM recommended)]
Alternatively: **For dye-based qPCR:** **GreenDye (20x) M3243**	1µL (1x final concentration)

***extracted with Plant DNA Q-Extraction Solution (M3230)**



Place PCR tubes in the thermal cycler* and start program.

A typical PCR cycling program is outlined on the right For maximum yield and specificity, temperatures and cycling times should be optimized for each new target or primer pair.

*When using a thermal cycler with a heated lid, do not use mineral oil. Otherwise, overlay with app. 50µL mineral oil

FAST PCR conditions - 2 Step program

Step	Time	Temperature
Initial denaturation*	**3 min**	**95 °C**
Denaturation	10 sec	95 °C
Annealing/Extension	30 sec	~60 °C*
Number of Cycles	25 - 45**	

*optional step for denaturation of sample; often not needed
**Approximately 5°C below Tm of primers
***For low copy number genes, it might be necessary to use cycle number of up to 45.

Additional information

Quality Control

Genaxxon bioscience InhibiCore Rapid Plant PCR MasterMix (5X) undergoes stringent quality controls. Each lot is tested in a Green dye-based realtime PCR.
The enzyme purity and homogeneity of >98% is validated.
All master mixes are free of endonuclease- and exonuclease activity.

Safety information

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate material safety data sheets (MSDSs). These are available online as pdf-file or on request (info@genaxxon.com).

Product Use Limitations

InhibiCore Rapid Plant PCR MasterMix (5X) is developed, designed, and sold for research purposes only. It is not to be used for human, diagnostic or drug purposes or to be administered to humans unless expressly cleared for that purpose by the Food and Drug Administration in the USA or the appropriate regulatory authorities in the country of use. All due care and attention should be exercised in the handling of many of the materials described in this manual.

Further information

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