

GNX Food Probe qPCR MasterMix (5X)

qPCR Mastermix with high inhibitor tolerance for environmental, food and other difficult samples

Component	Cat#	M3048.0100	M3048.0500	Colour code of cap
GNX Food Probe qPCR MasterMix (5X)		400µL for 100x 20µL reactions	5x 400µL for 500x 20µL reactions	green
GNX Food Probe Booster (10X)		400µL for 100x 20µL reactions	5x 400µL for 500x 20µL reactions	blue

Description

The Genaxxon **GNX Food Probe qPCR MasterMix (5X)** is a premium 5x ready-to-use master mix specifically developed for **fast and reliable qPCR from environmental, food and other difficult material**. Engineered for **high inhibitor tolerance**, the mix enables robust amplification even from challenging samples. It contains a **modified HotStart Taq DNA polymerase** for high specificity and sensitivity, minimizing non-specific amplification and ensuring reliable results.

The GNX Food Probe qPCR MasterMix (5X) is **lyo-ready**, making it suitable for the development of stable, room-temperature assay formats. In addition, the mix **incorporates dUTP**, enabling effective **carry-over contamination control** when used in combination with UDG (Uracil-DNA Glycosylase).

The master mix includes an optimized PCR buffer, dNTPs, MgCl₂, and a dedicated **GNX Food Probe Booster (10X)**, which is added separately to further enhance resistance against PCR inhibitors commonly found in complex biological and environmental samples. This unique two-component system provides exceptional robustness and reliable amplification performance, even under challenging assay conditions.

The hot-start DNA polymerase is inactive at room temperature, eliminating the need for cold setup conditions. The advanced buffer system ensures rapid reaction kinetics and efficient target amplification, even with challenging templates and multiplex PCR applications.

The product is supplied as a 5x master mix, ensuring convenient handling and reduced contamination risk.

Product specifications

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

Advantages

All-in-one master mix
High inhibitor tolerance specifically engineered for challenging samples
High sensitivity
High efficiency and specificity
Room temperature set-up
Fast Hot start - no activation step needed
Contains dUTP - for optional contamination control with UDG



Shipment: on wet ice but full activity at RT (+15°C to +25°C) for at least 3 days



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



Shelf-life: Stable until expiration date when stored and handled correctly



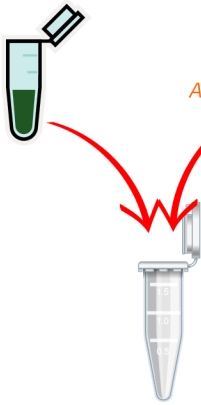
Important notes before getting started

- This protocol is a guideline; optimize conditions as needed.
- Readjust threshold value for analysis of every run.
- GNX Food Probe qPCR MasterMix (5X) 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 enforced by the use of UDG. Mix already contains dUTP, but NO UDG (must be added).**

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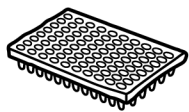
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PCR Protocol

 Thaw primer solutions  Mix well before use.	i 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 GNX Food Probe qPCR MasterMix (5X) at RT.  Mix well before use.	! It is very important to mix the GNX Food Probe qPCR MasterMix (5X) well before use to avoid local differences in salt concentration. The Genaxxon bioscience GNX Food Probe qPCR MasterMix (5X) is provided as a 5X concentrated mix (i.e. a 4µL volume of InhibiCore 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.																		
 <i>primer template DNA Alternatively: Probes OR GreenDye Nuclease-free H₂O</i> Distribute 20 µL reaction mix into each tube.	PCR protocol <table border="1"> <thead> <tr> <th>Components</th><th>Quantities/Final concentration</th></tr> </thead> <tbody> <tr> <td>GNX Food Probe qPCR MasterMix (5X)</td><td>4µL</td></tr> <tr> <td>primer 1 (4µM):</td><td>1µL [200nM (100-400nM recommended)]</td></tr> <tr> <td>primer 2 (4µM):</td><td>1µL [200nM (100-400nM recommended)]</td></tr> <tr> <td>Template DNA</td><td>XµL (1-300ng genomic DNA)</td></tr> <tr> <td>GNX Food Probe Booster (10X)</td><td>2-4µL (1-2x final concentration)</td></tr> <tr> <td>Alternatively: For probe-based qPCR: Probe (8µM)</td><td>1µL [400nM (200-600nM recommended)]</td></tr> <tr> <td>Alternatively: For dye-based qPCR: GreenDye (20x) M3243</td><td>1µL (1x final concentration)</td></tr> <tr> <td>Nuclease-free water</td><td>up to 20µL</td></tr> </tbody> </table>	Components	Quantities/Final concentration	GNX Food Probe qPCR MasterMix (5X)	4µL	primer 1 (4µM):	1µL [200nM (100-400nM recommended)]	primer 2 (4µM):	1µL [200nM (100-400nM recommended)]	Template DNA	XµL (1-300ng genomic DNA)	GNX Food Probe Booster (10X)	2-4µL (1-2x final concentration)	Alternatively: For probe-based qPCR: Probe (8µM)	1µL [400nM (200-600nM recommended)]	Alternatively: For dye-based qPCR: GreenDye (20x) M3243	1µL (1x final concentration)	Nuclease-free water	up to 20µL
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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 T_m 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 GNX Food Probe qPCR 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

GNX Food Probe qPCR 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.

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Further information

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