

UltraBio™ StableMax RT-qPCR Master Mix (Dye, UDG, One Tube)

Cat. No.: FP1508907 | Pack size: 100T / 1000T / 10000T | Storage: Store at -20°C, Avoid repeated freezing and thawing

Overview

The StableMax RT-qPCR Master Mix (with Dye, UDG) is a one-tube, probe-based RT-qPCR premix optimized for both single and multiplex RNA detection. Its unique buffer system is compatible with Taq DNA polymerase and reverse transcriptase, enabling seamless reverse transcription and amplification in a single reaction.

Key Features

- Visual tracking: Yellow dye (non-inhibitory) confirms reagent addition, preventing omissions.
- Contamination control: dUTP/UDG system eliminates carryover amplicon contamination.
- Broad applications: Suitable for one-step RT-qPCR (RNA targets) and hot-start DNA amplification.
- Optimized performance: High sensitivity and reproducibility for low-abundance targets.

Kit Contents & Storage

Catalog	Component	100T	1000T	10000T	Storage
FP1508907	UltraBio™ StableMax RT-qPCR Master Mix (Dye, UDG, One Tube)	1.0 mL	10×1.0 mL	100mL	-20°C

Storage: Store at -20°C, Avoid repeated freezing and thawing.

Shipped in: Ice chest + Ice pads.

Materials Required But Not Supplied

Item	Recommended Specification	Purpose
PCR/qPCR instrument or thermal cycler	Compatible with selected reaction volume	Amplification and fluorescence detection
RNase/DNase-free pipettes, filter tips, and tubes	Molecular biology grade	Reaction setup and contamination control

Item	Recommended Specification	Purpose
Primers/probes and template nucleic acid	User-designed and validated	Target amplification

Specifications

Attribute	Value
Specifications & Purity	10 µL/T
Application	PCR, RT-qPCR
Shipped In	Ice chest + Ice pads
Specifications & Purity	BioReagent, DNase, RNase free, PCR Reagent, Suitable for molecular biology, for DNA and RNA applications, 10 µL/T
Stability And Storage	Store at -20°C long term (12 months). Avoid freeze/thaw cycle. Upon receipt, it is recommended to aliquot.
Storage	Store at -20°C, Avoid repeated freezing and thawing
Shipped In	Ice chest + Ice pads. This product requires cold chain shipping. Ground and other economy services are not available.

Protocol

I. Reaction Setup

- Reagent Preparation

Thaw all components at room temperature or 4°C.

Mix gently and centrifuge briefly before use.

- Recommendations

Protect probes from light.

Aliquot master mix to avoid freeze-thaw cycles.

- Prepare Reaction Mix

Component	Volume per 25 μ L	Volume per 50 μ L	Final Concentration
StableMax RT-PCR Master Mix (Dye, UDG, One Tube)	10 μ L	20 μ L	1×
Primer-probe Mix	1 μ L	2 μ L	/
Templates	5 μ L	10 μ L	/
ddH ₂ O	Up to 25 μ L	Up to 50 μ L	/
Total	25 μ L	50 μ L	/

*Note: Primer/template volumes can be adjusted.

For multiplex assays, optimize primer concentrations empirically.

● Mixing

Gently pipette mix or vortex briefly. Centrifuge at room temperature to collect liquid.

● PCR Amplification

Load tubes onto a thermal cycler with heated lid (105°C recommended).

II. Thermal Cycling Program

Step	Temperature	Time	Cycles
1	50°C	15min	1
2	95°C	2min 30s	1
3	94°C	10s	45
4	55°C	40s (Fluorescence read)	45

Optimization Guidelines

a. Reverse Transcription: 5–15 min (adjust based on target abundance).

b. Cycle Number: Reduce to 40 cycles for high-copy targets.

c. Primer Design:

Final concentration: 0.2 μ M (typical).

T_m $\geq$ 55°C (use software for accurate calculation).

Adjust annealing temperature ($\pm$ 3°C) if amplification is suboptimal.

Safety & Precautions

1. Use dedicated, RNase/DNase-free pipettes, filter tips, and tubes. Maintain physical separation between pre-PCR and post-PCR work areas to prevent amplicon carryover contamination.
2. Wear gloves at all times and change them between sample preparation, master mix preparation, and template addition.
3. Keep enzymes or master mixes on ice or in a cold block during use. Avoid repeated freeze-thaw cycles.

Quality Control

QC Item	Method	Acceptable Range
Component appearance	Visual inspection on receipt	No leakage, precipitation beyond reversible cold storage effects, or abnormal color
Amplification performance	Positive control reaction	Amplification curve or endpoint band meets lot-specific COA/specification
Nuclease control	DNase/RNase-related quality check as applicable	Meets DNase/RNase-free grade claims on product label/COA

Troubleshooting

Issue	Possible Causes	Corrective Action
No or weak amplification	• Inactive master mix/enzyme • Incorrect primer/probe design or cycling program • Low or degraded template	• Verify storage and avoid freeze-thaw cycles • Run a positive control and confirm cycling parameters • Re-quantify template and optimize primer/probe concentrations
High background or nonspecific signal	• Contamination or primer-dimer formation • Annealing temperature too low • Excess template or primers	• Use separated pre-/post-PCR areas and filter tips • Increase annealing temperature or redesign primers • Optimize template and primer/probe input

Issue	Possible Causes	Corrective Action
Poor reproducibility	• Inadequate mixing • Pipetting variation • Repeated freeze-thaw	• Mix gently and centrifuge briefly • Use calibrated pipettes and replicate wells • Aliquot reagents upon receipt

Recommended Applications

PCR, RT-qPCR.

Contact & Global Offices

Whether you have a technical question, need help with a quotation, or want to inquire about an order, our regional teams are ready to assist. Please contact the office for your region; for general inquiries, the North American office is the corporate primary.

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Limitations & Disclaimer

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