

2X qPCR Master Mix (Dye-Based)

Catalog No.	50502DS	50502DL
Reactions*	100 reactions	500 reactions

*Based on 20 μ l of reaction volume

Description

2X qPCR Master Mix (Dye-Based) is a ready-to-use 2X master mix solution optimized for real-time qPCR detection and quantification of target DNA with minimal or no optimization required. The master mix includes Taq DNA polymerase, dNTPs, MgCl₂ and stabilizers. The master mix makes it easy for reaction setup by adding DNA templates and primers, saves time and reduces contamination with fewer pipetting steps.

The low-cost intercalating dye-based technologies have several advantages, such as melting curve analysis after amplification and faster cycling than that probe-based qPCR. BioDynamix's 2X qPCR Master Mix uses a unique DNA intercalating dye to replace SYBR Green I, but with less PCR inhibition. The development increases the reliability and sensitivity of the Master Mix in reaction conditions.

2X qPCR Master Mix provides specific, sensitive and reproducible quantification of cDNA, genomic DNA, viral DNA, and plasmid DNA with earlier quantification cycle values and broad-range detection. The Optimized buffer eliminates the non-specific amplification and primer dimers formation, and leads to high reaction specificity and sensitivity.

The Master Mix is compatible with most real-time thermal cyclers. An additional passive ROX dye is provided, and it is compatible across a variety of instrument platforms with the requirement of either a high or low reference signal. The Master Mix is an affordable and reliable reagent for real-time qPCR applications including high throughput assay, gene expression, DNA quantification, genotyping, and pathogen detection.

Features

- Specificity: Optimized buffer eliminates non-specific amplification and primer dimers formation
- Sensitivity: Detects low copy number target DNA
- Easy reaction setup: Convenient, ready-to-use 2X master mix format
- Minimal risk of contamination by reducing pipetting steps
- Fluorescent dye: Comparable to SYBR Green, with less PCR inhibition

Component

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2X qPCR Master Mix	1 mL	5 mL
ROX (25 μ M)	50 μ l	250 μ l
PCR Water	1 mL	5 mL

Storage Condition

- Store 2X qPCR Master Mix and ROX at -20°C, stable up to 12 months. Protect from light.

Reagent & Equipment Needed (not provided in this kit)

- Real time thermal cycler
- PCR plate
- PCR plate seal film
- PCR grade water

Master Mix Composition

- 2X qPCR Master Mix: 2X qPCR Buffer; Taq DNA Polymerase 50 U/ml; dNTP 0.4 mM each; MgCl₂ 3 mM
- ROX: 25 μM

Protocol

Reaction setup

Suggested reaction setup for dye-based assays (on ice recommended):

Component	Volume	Final conc.
2X qPCR Master Mix	10 μl	1X
Forward Primer (10 μM)	0.5 μl	0.25 μM
Reverse Primer (10 μM)	0.5 μl	0.25 μM
ROX*	variable	
DNA template	variable	<100 ng
Water	variable	
Total Volume	20 μl	

* ROX may be needed and the required ROX concentration may be different based on the model of the thermal cycler.

Reaction Condition

Suggested condition for RT-qPCR:

Step	Temperature	Time	Cycles
Initial Denaturation	95°C	30 seconds	1
Denaturation	95°C	15 seconds	35-45 cycles
Annealing/Extension	60°C	30-60 seconds	
Melt Curve	Refer to the guidelines of the instrument		

Quality Control

Kit components passed stringent functional quality test.

Product Use Limitation

This product is developed and sold for research purposes and *in vitro* use only. Please refer to biodynami.com for Material Safety Data Sheet of the product.




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