q•Taq 5X PCR Master Mix with $MgCl_2$ and Ready-to-Load option

for in vitro use only

Protocol

1. Thaw and briefly centrifuge all components
2. Prepare your reactions using the Recommended Reaction Mix
3. Briefly centrifuge your samples
4. Run PCR using Recommended Cycling Settings

Recommended Reaction Mix

Component	Conc.	Amount	Final Conc.
q•Taq MM	5X	4 µL	1X
Primer, F[1]	10 pmol/µL	0.2 - 0.6 µL	100 - 300 nM
Primer, R[1]	10 pmol/µL	0.2 - 0.6 µL	100 - 300 nM
Template DNA[2]		2 - 400 ng	0.1 - 20 ng/µL
Nuclease-free water		variable	
Total		20 µL	

1 To maximize assay sensitivity use lowest concentration possible without compromising reaction efficiency. Doubling the reverse primer concentration may improve performance. Further optimization can be tested using final concentrations of 100 - 400 nM.

2 Further optimizations can vary depending on your DNA template.

Recommended Cycling Settings

Cycle Step	Temp (°C)	Time	Cycles
Initial denaturation	95	3 - 5 min	1
Denaturation	95	20 -40 sec	25 - 30
Annealing	T_M - 4[1]	30 - 60 sec	
Extension	72	1 min/kb[2]	
Final extension	72	5 -10 min	1

[1] *Set annealing temperature to be 4°C lower than T_M of primers.*

[2] *Use amplicon length to optimize extension time: approx. 1 min per 1000 bases.*

Estimating primer melting temperature:

For primers containing less than 25 nucleotides, $T_M = 4 (G + C) + 2 (A + T)$, where G, C, A, T represent the number of respective nucleotides in the primer. If primers contain more than 25 nucleotides specialized software is recommended to calculate T_M.

q•Taq 5X Master Mix Order Information

Cat. No.	Vol. (mL)	No. Rxns 20 µL each	Mix Composition: q•Taq	5X Buffer	Final $MgCl_2$ Conc.	Final dNTP Conc.	Blue Loading Dye	Yellow Loading Dye	Nuclease free H_2O
QTMM15-S	0.2 mL	50	✓	400 mM Tris-HCl, 100 mM $(NH_4)_2SO_4$, 0.1% w/v Tween-20	1.5 mM	200 µM each of dATP, dCTP, dGTP, dTTP	No	No	1 mL
QTMM15-01	1 mL	250							4 mL
QTMM25-S	0.2 mL	50			2.5 mM				1 mL
QTMM25-01	1 mL	250							4 mL
QTMMRL15-S	0.2 mL	50			1.5 mM		Migration equivalent to 3.5 - 4.5 kb DNA fragment	Migration rate in excess of primers in 1% agarose gel: <35-45 bp	1 mL
QTMMRL15-01	1 mL	250							4 mL
QTMMRL25-S	0.2 mL	50			2.5 mM				1 mL
QTMMRL25-01	1 mL	250							4 mL

Description

q•Taq 5X Master Mix is a ready-to-load cocktail for PCR. It contains all the components necessary for DNA amplification in PCR. Simply add nuclease-free water (supplied with the kit), template and primers.

- **Ready-to-load option.** With this option the mix contains two loading dyes so that your PCR product can subsequently be directly loaded onto agarose gel.
- **Nuclease-free water.** More than sufficient RNase and DNase free water is included in all master mixes.

Fidelity

q•Taq fidelity is ~2.5 X 10^{-5} errors per nucleotide incorporation event or ~ 4.0 x 10^4 nucleotides incorporated before any error occurs.

Eco-friendly shipping & storage

- Shipped at ambient temperature without ice to reduce packaging waste
- Use within 2 weeks of arrival or store at -20°C

T_+1-310-326-1542 E_technical.support@qartabio.com E_sales@qartabio.com W_www.qartabio.com