2X *Taq* Master Mix **Cat. No. E00019**
Technical Manual No. TM0228 **Update date 10112010**

I. DESCRIPTION

2X *Taq* Master Mix is a premixed 2X concentrated solution of *Taq* DNA Polymerase (GenScript, Cat. No. E00007), reaction buffer, $MgCl_2$ and dNTPs. 2X *Taq* Master Mix contains all components for PCR*, except DNA template and primers. The mixture is optimized for consistent and efficient routine PCR amplifications. It can amplify up to 8 kb fragment from lambda DNA. For a 50 µl reaction, simply add 25 µl of 2X *Taq* Master Mix to primers, DNA template and PCR-Qualified H_2O.

II. KEY FEATURES

- *Taq* DNA Polymerase in ready-to-use mix
- Low contamination risk
- Low risk of pipetting errors

III. CONTENTS

- 0.1 U/µl *Taq* DNA Polymerase (GenScript, Cat. No. E00007)
- Reaction buffer
- 3 mM $MgCl_2$
- 0.4 mM dNTPs

IV. STABILITY

1. Freeze-thaw stability of 2X *Taq* master mix: Following 25 freeze-thaw cycles, no effect on performance is observed.

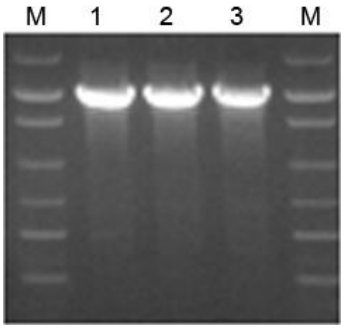

Fig. 1 Stability after 25 freeze-thaw cycles.
2 kb fragment amplification.
Lane 1 25 µl of 2X *Taq* Master Mix
Lane 2 25 µl of 2X *Taq* Master Mix after 25 freeze-thaw cycles
Lane 3 2.5 U *Taq* DNA Polymerase (GenScript, Cat. No. E00007)

2. Stability at 4°C: No effect on performance is observed after storage at 4°C for 2 months.

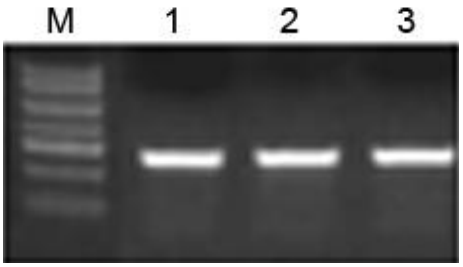

Fig. 2 Stability at 4°C
0.5 kb fragment amplification.
Lane 1 25 µl of 2X *Taq* Master Mix
Lane 2 25 µl of 2X *Taq* Master Mix storage at 4°C for 2 months
Lane 3 2.5 U *Taq* DNA Polymerase (GenScript, Cat. No. E00007)

V. STORAGE

This product is shipped on blue ice. Store the product at –20°C.

VI. GENERAL PCR PROTOCOL USING 2X TAQ MASTER MIX

This is a general PCR amplification protocol, optimization may be needed to get satisfactory results.

1. Thaw the 2X *Taq* Master Mix at room temperature. Vortex the 2X *Taq* Master Mix and then spin it briefly in a microcentrifuge to collect the material in the bottom of the tube.
2. Prepare one of the following reaction mixes on ice:

- **For a 25 µl reaction volume:**

Component	Volume	Final Concentration
2X *Taq* Master Mix	12.5 µl	1X
Upstream Primer, 10 µM	0.5 µl	0.1–1.0 µM
Downstream Primer, 10 µM	0.5 µl	0.1–1.0 µM
DNA Template	1-5 µl	<500 ng
Nuclease-Free Water to	25 µl	

- **For a 50 µl reaction volume:**

Component	Volume	Final Concentration
2X *Taq* Master Mix	25 µl	1X
Upstream Primer, 10 µM	1 µl	0.1–1.0 µM
Downstream Primer, 10 µM	1 µl	0.1–1.0 µM
DNA Template	1-5 µl	<500 ng
Nuclease-Free Water to	50 µl	

3. Gently mix the reaction and spin down in microcentrifuge.

4. Set up cycling conditions for a routine PCR reactions:
   - Initial Denaturation — 94-95°C for 1-5 minutes
   - 25-40 cycles — 94-96°C for 30 sec.
45-70°C for 10-30 seconds
72°C for X minutes (1 min/kb)
   - Final extension: — 72°C for 7 minutes
   - Final soak — 4-10°C

VII. ORDER INFORMATION

2X *Taq* Master Mix, Cat. No. E00019

For Research Use Only.

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