Cat. No.: FTAQ-101

Fast *Taq* DNA Polymerase Mastermix (2X)

(ETERBIO-EZ-FTAQ-101)

Lot:_____

Expiry Date: yy / mm / dd

Store at -20℃

DESCRIPTION

Fast *Taq* DNA Polymerase Mastermix (2X) is designed for fast PCR and ready-to-use 2X solution containing Fast *Taq* DNA polymerase, dNTPs, $MgCl_2$ and reaction buffers at optimal concentrations. Fast *Taq* DNA Polymerase is a second-generation enzyme engineered from *Thermus aquaticus* DNA polymerase, offering higher processivity and speed. Fast *Taq* DNA polymerase has 5'→3' DNA polymerase and 5'→3' exonuclease activities that lacking a 3'→5' exonuclease (proofreading) activity. In addition to faster extension rates, the enzyme provides higher yields and sensitivity than wild-type *Taq* DNA polymerase across a broad range of targets. With a buffer specifically formulated, add primers, template, and water simply to amplify the target sequence. Fast *Taq* DNA Polymerase Mastermix (2X) not only saves valuable time without specialized PCR consumables or thermocyclers, but also reduces number of pipetting and reagent handling errors.

COMPOSITION

0.2 U/µl Fast *Taq* DNA polymerase, reaction buffer, 3 mM $MgCl_2$, 0.4 mM of each dNTP (dATP, dCTP, dGTP and dTTP).

PRODUCT NOTES

A. Set up 1 sec extension time for target fragments <1 kb and 15 sec/kb for longer target fragments.
B. Fast Taq DNA Polymerase Mastermix (2X) includes two tracking dyes to allow loading onto agarose gels directly.
C. The following assays are likely to be unsuitable for fast PCR with the Fast *Taq* DNA Polymerase Mastermix (2X):
   I. Amplification of long fragments (>1 kb) from low target copy numbers
   II. Amplification of highly GC-rich fragments (>70%)
   III. Amplification with primers that are prone to nonspecific annealing
   IV. Amplification from template samples that contain PCR inhibitors (EDTA-, Citrate-, Heparin-treated blood, etc.)
   V. Multiplex PCR

USAGE

1. Gently vortex and briefly centrifuge Fast *Taq* DNA Polymerase Mastermix (2X) after thawing.
2. Set up each reaction as follows (Keep on ice):

Component	50 µl reaction	Final Concentration
Mastermix (2X)	25 µl	1X
Primer A	Variable	0.1–1.0 µM
Primer B	Variable	0.1–1.0 µM
Template DNA	Variable	< 1.0 µg
Nuclease-free water	to 50 µl	

3. Gently mix the solution a few times and spin down.
4. Perform PCR using the recommended thermal cycling conditions outlined below:
   (For maximum yield and specificity, temperatures and cycling times should be optimized for each new template target or primer pair)

Step	Temperature	Time
Initial Denaturation	95℃	3 minutes
30 Cycles	95℃	15-30 seconds
	45-68℃	15-30 seconds
	72℃	1-15 seconds/kb
Final Extension	72℃	1 minute/kb
Hold	4-10℃	

If these conditions are not used to, reaction failure is likely.

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