AccuPower® Multiplex PCR Master Mix

[Cat. No.] K-2120

Introduction

AccuPower® Multiplex PCR Master Mix is the powerful technology for convenient and easy performance that allows DNA amplification of two or more products in a single tube. By applying antibody-based HotStart *Top* DNA Polymerase, it provides reduced non-specific reactions such as mis-priming and primer dimer during PCR at a low temperature. This product is a ready-to-use mixture containing HotStart *Top* DNA Polymerase, dNTPs, reaction buffer, stabilizer, and tracking dye. It simplifies preparation of reaction mixture by adding template DNA and primers without any extra process. After the reaction, samples can be applied directly on agarose gel for analysis.

Applications

- STR analysis
- Molecular diagnostic analysis
- Qualitative, semi-qualitative gene expression assay
- Mutant screening
- Transgenic organism analysis
- Genotyping assay

Features & Benefits

- Multiplex PCR: Generation of 20 multiplexed amplification products in a single tube.
- Specificity & Efficiency: Minimized non-specific amplification and maximized PCR efficiency by using HotStart *Top* DNA Polymerase.
- Sensitivity: Excellent sensitivity and amplification efficiency even with small amounts of DNA.
- User-friendly: Reactants are included in a tube, it allows any user simply perform PCR by adding template DNA and primers.
- Stability: Included stabilizer enables to maintain the activity of master mix for more than a year. It ensures superior amplification efficiency with stability and uniform activity of polymerase in the process of PCR.
- Reproducibility: Mass production under ISO 9001 quality system allows minimized deviation between lots and reproducible results in replicated tests performed under same conditions and variation.

Composition

2X Master Mix	Concentration
HotStart *Top* DNA Polymerase	1 U
dNTPs (dATP, dCTP, dGTP, dTTP)	Each 250 μM
Reaction buffer with 2 mM $MgCl_2$	1X
Stabilizer and tracking dye	O

Specifications

HotStart *Top* DNA Polymerase	
5' to 3' exonuclease activity	No
3' to 5' exonuclease activity	No
3'–A overhang	Yes
Fragment size	Up to 1 kb

Storage

Store at -20°C. If stored in the recommended temperature, this product will be stable until the expiration date printed out on the label.

Precautions

This enzyme is specifically optimized for increasing base incorporation rate by inactivating 5' to 3' exonuclease activity. Therefore, this product is not recommended to use for real-time PCR using hydrolysis probe method.

Online Resources

Korean **English**

Visit our **product page** for additional information and protocols

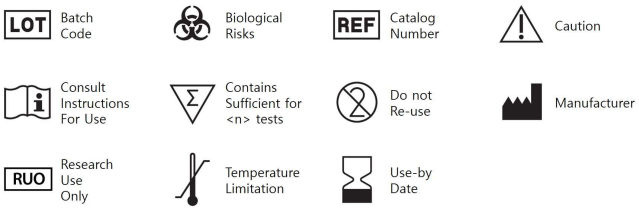
Ordering Information

Description		Cat. No.
1 ml of 2X Master Mix solution	1 ml x 1 ea	K-2120

Notice

BIONEER corporation reserves the right to make corrections, modifications, improvements and other changes to its products, services, specifications or product descriptions at any time without notice.

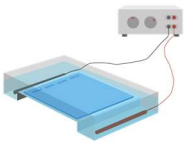
Explanation of Symbols



Experimental Procedures

<table>
<tr><th colspan="2">Steps</th><th>Procedure Details</th></tr>
<tr><td>1</td><td> 
Thaw reagents</td><td>1. Thaw AccuPower® Multiplex PCR Master Mix on ice and mix thoroughly before use. Then, briefly spin down components.

2. Dispense appropriate volumes of AccuPower® Multiplex PCR Master Mix into PCR tubes (not provided).</td></tr>
<tr><td>2</td><td> 
Preparation of reaction mixture</td><td>3. Add template DNA, primers, and nuclease-free water into PCR tubes to make a total volume of 20 µl or 50 µl.

• Preparation of reaction mixture
<table><tr><th>Components</th><th>20 µl reaction</th><th>50 µl reaction</th></tr><tr><td>2X PCR Master Mix solution</td><td>10 µl</td><td>25 µl</td></tr><tr><td>Template DNA (1-100 ng)</td><td>Variable</td><td>Variable</td></tr><tr><td>Forward primer (1-5 pmol/µl)</td><td>0.5-2 µl</td><td>1-5 µl</td></tr><tr><td>Reverse primer (1-5 pmol/µl)</td><td>0.5-2 µl</td><td>1-5 µl</td></tr><tr><td>Nuclease-free water</td><td>Variable</td><td>Variable</td></tr><tr><td>Total volume</td><td>20 µl</td><td>50 µl</td></tr></table>
4. Mix the reaction mixture by vortexing or pipetting, and briefly spin down.</td></tr>
<tr><td>3</td><td> 
Incubate reactions in a thermal cycler</td><td>5. Perform the reaction under the following conditions.
<table><tr><th>Step</th><th>Temperature</th><th>Time</th><th>Cycles</th></tr><tr><td>Pre-denaturation</td><td>95°C</td><td>10 min</td><td>1 cycle</td></tr><tr><td>Denaturation</td><td>95°C</td><td>30 sec</td><td></td></tr><tr><td>Annealing</td><td>55-65°C†</td><td>30-60 sec</td><td>25-35 cycles</td></tr><tr><td>Extension</td><td>72°C</td><td>1 min/kb</td><td></td></tr><tr><td>Final extension</td><td>72°C</td><td>5 min</td><td>1 cycle</td></tr></table>* Note: Primers are generally designed length of 24-35 nucleotides and ideally have a Tm value range within 5°C.
† Set the annealing temperature to 3-5 degrees lower than the Tm of the primers.</td></tr>
<tr><td>4</td><td> 
Analyze with gel electrophoresis</td><td>6. After the reaction, maintain the reaction mixture at 4-8°C. The samples can be stored at -20°C until use.

7. Load 5 µl of samples on agarose gel without adding a loading-dye mixture, and perform gel electrophoresis for analysis.</td></tr>
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