AccuPower® *Pfu* PCR Master Mix

[Cat. No.] K-2026

Introduction

AccuPower® *Pfu* PCR Master Mix is ideal for convenient and high fidelity of DNA amplification. Included *Pfu* DNA Polymerase provide highly accurate PCR products through its proof-reading function. This product is a ready-to-use mixture containing *Pfu* 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

- Gene synthesis
- Gene cloning
- Conventional PCR
- Primer extension
- Site-directed mutagenesis
- High fidelity PCR

Features & Benefits

- High fidelity: Low mutation rate during DNA amplification due to its high fidelity (error rate = 1.9×10^{-6}).
- Sensitivity: Excellent sensitivity and amplification efficiency even with small amounts of DNA.
- Long range PCR: Effective amplification of large size templates allowing various applications such as promoter assay and cloning.
- 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.
- User-friendly: Reactants are included in a tube, it allows any user simply perform PCR by adding template DNA and primers.
- 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
Pfu DNA Polymerase	1 U
dNTPs (dATP, dCTP, dGTP, dTTP)	Each 250 μM
Reaction buffer with 1.5 mM $MgCl_2$	1X
Stabilizer and tracking dye	O

Specifications

Pfu DNA Polymerase	
5' to 3' exonuclease activity	No
3' to 5' exonuclease activity	Yes
3'–A overhang	No
Fragment size	Up to 15 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.

Online Resources

Korean

English

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

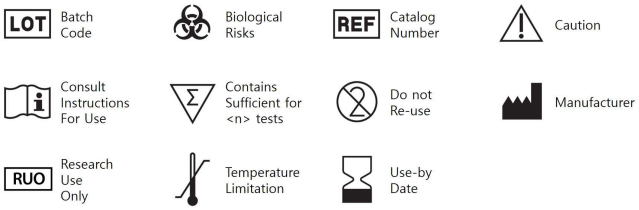
Ordering Information

Description		Cat. No.
1 ml of 2X Master Mix solution	1 ml x 1 ea	K-2026

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.

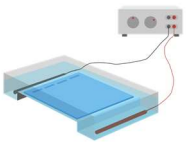
Explanation of Symbols



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® Pfu PCR Master Mix on ice and mix thoroughly before use. Then, briefly spin down components.

2. Dispense appropriate volumes of AccuPower® Pfu 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 (10 pmol/µl)</td><td>0.5-2 µl</td><td>1-5 µl</td></tr><tr><td>Reverse primer (10 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>94°C</td><td>2-5 min</td><td>1 cycle</td></tr><tr><td>Denaturation</td><td>94°C</td><td>0.5-1 min</td><td rowspan="3">25-35 cycles</td></tr><tr><td>Annealing</td><td>45-65°C</td><td>0.5-1 min</td></tr><tr><td>Extension</td><td>72°C</td><td>1-2 min/kb</td></tr><tr><td>Final extension</td><td>72°C</td><td>5 min</td><td>1 cycle</td></tr></table>* Note: For maximum yield and specificity, temperatures and cycling times should be optimized for each new template DNA or 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 samples on agarose gel without adding a loading-dye mixture, and perform gel electrophoresis for analysis.</td></tr>
<tr><td></td><td> 
Option</td><td>• If primer’s Tm value is more than 65°C or PCR product size is more than 5 kb, follow the conditions as below.
<table><tr><th>Step</th><th>Temperature</th><th>Time</th><th>Cycles</th></tr><tr><td>Pre-denaturation</td><td>94°C</td><td>2-5 min</td><td>1 cycle</td></tr><tr><td>Denaturation</td><td>94°C</td><td>30 sec</td><td rowspan="2">25-35 cycles</td></tr><tr><td>Annealing/Extension</td><td>68°C</td><td>1-2 min/kb</td></tr><tr><td>Final extension</td><td>68°C</td><td>5 min</td><td>1 cycle</td></tr></table></td></tr>
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