AccuPower® ProFi Taq PCR Master Mix

[Cat. No.] K-2635

Introduction

AccuPower® ProFi Taq PCR Master Mix is ideal for convenient and high fidelity of DNA amplification. Included *ProFi Taq* DNA Polymerase is a unique recombinant *Taq* DNA Polymerase that provides accurate amplification of long template DNA with high fidelity and high efficiency. This product is a ready-to-use mixture containing *ProFi Taq* 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

- Primer extension
- Long-range amplification from genomic DNA
- High amplification efficiency
- Excellent performance on difficult templates
- Amplification of low-copy targets
- High yield and high sensitivity PCR

Features & Benefits

- High Efficiency and high sensitivity: Guaranteed accurate PCR products with excellent sensitivity and amplification efficiency even with small amounts of DNA.
- Long-range PCR: Effective amplification of large genomic DNA fragments up to 20 kb of human 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
ProFi Taq 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

ProFi Taq DNA Polymerase	
5’ to 3’ exonuclease activity	Yes
3’ to 5’ exonuclease activity	Yes
3’–A overhang	Yes
Fragment size	Up to 30 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

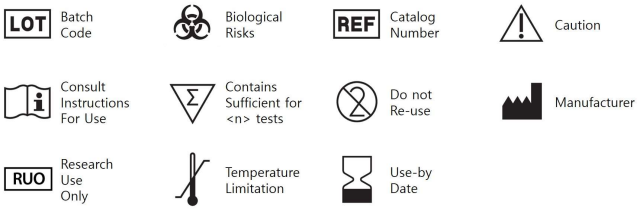
Ordering Information

Description		Cat. No.
1 ml of 2X Master Mix solution	1 ml x 1 ea	K-2635

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.

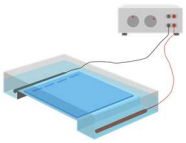
Explanation of Symbols



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

2. Dispense appropriate volumes of AccuPower® ProFi Taq 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 (1-500 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>95°C</td><td>5 min</td><td>1 cycle</td></tr>
<tr><td>Denaturation</td><td>95°C</td><td>15-20 sec</td><td rowspan="3">25-35 cycles</td></tr>
<tr><td>Annealing</td><td>45-65°C*</td><td>15-30 sec</td></tr>
<tr><td>Extension</td><td>68°C</td><td>1 min/kb</td></tr>
<tr><td>Final extension</td><td>68°C</td><td>3-5 min</td><td>1 cycle</td></tr>
</table>
* Optimal annealing temperature depends on the melting temperature 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 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 10 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>95°C</td><td>5 min</td><td>1 cycle</td></tr>
<tr><td>Denaturation</td><td>95°C</td><td>15-20 sec</td><td rowspan="2">30-35 cycles</td></tr>
<tr><td>Annealing/Extension</td><td>68°C</td><td>1 min/kb*</td></tr>
<tr><td>Final extension</td><td>68°C</td><td>3-5 min</td><td>1 cycle</td></tr>
</table>
* Annealing/Extension time depends on target length. Perform 15 min for 20 kb and 20 min for 30 kb.</td></tr>
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