# *AccuPower*® PCR PreMix



**[Cat. No.]** Please refer to the **Ordering Information**

## Introduction

*AccuPower*® PCR PreMix is the powerful technology for convenient and easy performance of DNA amplification. This product contains vacuum-dried components including *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

- Conventional PCR
- Primer extension
- TA cloning
- Gene sequencing

## Features & Benefits

- Stability: Included stabilizer enables delivery at room temperature and provides increased stability compared to solution-type products.
- User-friendly: Reactants are individually packaged in each of the PCR tubes, it allows any user simply perform PCR by adding template DNA and primers.
- Sensitivity: Excellent sensitivity and amplification efficiency even with small amounts of DNA.
- 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

| Composition | Concentration |
|---|---|
| *Top* 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

| *Top* DNA Polymerase | |
|---|---|
| 5' to 3' exonuclease activity | No |
| 3' to 5' exonuclease activity | No |
| 3'–A overhang | Yes |
| Fragment size | Up to 10 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

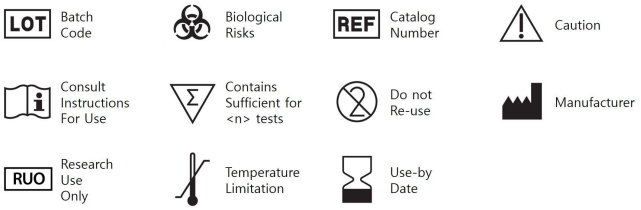
## Ordering Information

| Description | | | Cat. No. |
|---|---|---|---|
| 0.2 ml thin-wall 8-tube strips with attached cap | 96 tubes | 20 μl/rxn | K-2012 |
| | | 50 μl/rxn | K-2013 |
| | 480 tubes | 20 μl/rxn | K-2016 |
| | | 50 μl/rxn | K-2017 |
| 0.5 ml thin-wall microtubes | 100 tubes | 50 μl/rxn | K-2011 |
| thin-wall 96-well | flat plate | 10 μl/rxn | K-2260-1 |
| | | 20 μl/rxn | K-2260-4 |
| | full-skirted plate | 10 μl/rxn | K-2260-2 |
| | | 20 μl/rxn | K-2260-5 |
| | semi-skirted plate | 10 μl/rxn | K-2260-3 |
| | | 20 μl/rxn | K-2260-6 |
| thin-wall 384-well | full-skirted plate | 5 μl/rxn | K-2080-1 |
| | | 10 μl/rxn | K-2080-2 |
| | | 20 μl/rxn | K-2080-3 |

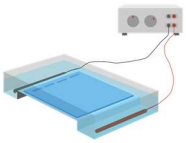
## Notice

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>  <br>Preparation of reaction mixture</td><td>
1. Add template DNA, primers, and nuclease-free water into AccuPower® PCR PreMix tubes make to a total volume of 20 µl or 50 µl. Do not include the dried pellet.<br><br>
• Amount of template
<table>
<tr><th rowspan="2">Template DNA</th><th colspan="2">Amount of template</th></tr>
<tr><th>20 µl reaction</th><th>50 µl reaction</th></tr>
<tr><td>Bacteriophage λ, Plasmid DNA</td><td>100 fg-200 ng</td><td>100 fg-500 ng</td></tr>
<tr><td>Total genomic DNA</td><td>1-500 ng</td><td>1 ng-1 µg</td></tr>
</table>
• Preparation of reaction mixture
<table>
<tr><th>Components</th><th>20 µl reaction</th><th>50 µl reaction</th></tr>
<tr><td>Template DNA</td><td>Variable (1-10 µl)</td><td>Variable (1-25 µl)</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>
2. Dissolve the vacuum-dried blue pellet by pipetting or vortexing, and briefly spin down.
</td></tr>
<tr><td>2</td><td>  <br>Incubate reactions in a thermal cycler</td><td>
3. 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>20 sec</td><td rowspan="3">25-35 cycles</td></tr>
<tr><td>Annealing</td><td>45-65°C</td><td>20 sec</td></tr>
<tr><td>Extension</td><td>72°C</td><td>0.5-1 min/kb</td></tr>
<tr><td>Final extension</td><td>72°C</td><td>3-5 min</td><td>1 cycle</td></tr>
</table>
</td></tr>
<tr><td>3</td><td>  <br>Analyze with gel electrophoresis</td><td>
4. After the reaction, maintain the reaction mixture at 4-8°C. The samples can be stored at -20°C until use.<br><br>
5. Load samples on agarose gel without adding a loading-dye mixture, and perform gel electrophoresis for analysis.
</td></tr>
<tr><td></td><td>  <br>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>95°C</td><td>5 min</td><td>1 cycle</td></tr>
<tr><td>Denaturation</td><td>95°C</td><td>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>72°C</td><td>3-5 min</td><td>1 cycle</td></tr>
</table>
</td></tr>
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