AccuPower® Plus *DualStar*™ qPCR Master Mix (with UDG) (V0/2022-05-02)

[Cat. No.] K-6608

Introduction

AccuPower® Plus *DualStar*™ qPCR Master Mix (with UDG) is a ready-to-use mixture for real-time PCR with enhanced specificity and sensitivity by applying hydrolysis probe method and antibody-based HotStart *Taq* DNA Polymerase. By applying antibody-based HotStart *Taq* DNA Polymerase, it provides reduced non-specific reactions such as mis-priming and primer dimer during PCR at a low temperature. It also helps to minimize carryover contamination, which may cause severe problems in clinical diagnosis by using uracil DNA glycosylase (UDG). UDG catalyzes the hydrolysis of N-glycosylic bond between the uracil and sugar. In the following heating at 95°C, contaminants (uracil-containing DNA) are degraded and consequently not amplified. This product contains all components for real-time PCR, except for template DNA, target-specific primers, and fluorogenic probe. By just adding template DNA, target specific primers, and probe, reproducible results with high sensitivity and specificity can be obtained. This product can be used for hydrolysis probe-based real-time PCR experiments for the amplification and detection of genomic DNA and cDNA targets, differential gene expression profiling, single nucleotide polymorphism (SNP) analysis, and evaluation of RNAi products.

Applications

- Gene expression profiling
- Target DNA quantification
- Microbial detection
- Viral/bacterial pathogen load determination
- Evaluation of primer pair performance for probe-based real-time PCR

Features & Benefits

- Carryover contamination prevention: Minimized false positives caused by a carryover contamination through application of uracil DNA glycosylase system.
- Dynamic range: A wide range of 8 logs up to 10-10^8 copies.
- Specificity: Optimized amplification of target gene using HotStart *Taq* DNA Polymerase.
- Comprehensiveness: Effective real-time PCR regardless of gene types, including DNA, cDNA and high GC templates.
- Convenience: Reactants are individually packaged in a tube, it allows any user simply perform real-time PCR by adding template DNA, target-specific primers, and probe.
- 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.

Components

Components	K-6608
2X Master Mix	0.625 ml x 4 ea
50X ROX dye	0.1 ml
DEPC-D.W.	1.2 ml

*** Note:** ROX dye is used for normalization of intensity by background subtraction. The use of ROX dye is recommended for Applied Biosystems 7500 Real-Time PCR System (Applied Biosystems), but not required for *Exicycler*™ 96 Real-Time PCR System (BIONEER) and CFX96 Real-Time PCR System (Bio-Rad).

Composition

2X Master Mix	Concentration
HotStart *Taq* DNA polymerase	1 U
Uracil DNA glycosylase	1 U
dNTP with dUTP	1.2 mM
Reaction buffer with 1.5 mM $MgCl_2$	1X
Stabilizer	1X

Specifications

HotStart *Taq* DNA Polymerase	
5' to 3' exonuclease activity	Yes
3' to 5' exonuclease activity	No
3'–A overhang	Yes

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

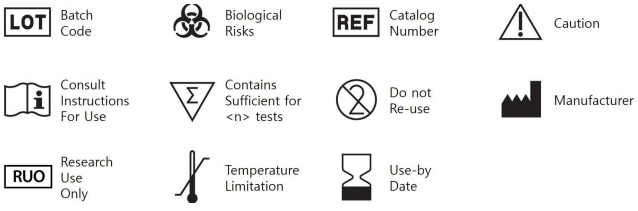
Ordering Information

Description		Cat. No.
2.5 ml of 2X Master Mix solution	0.625 ml x 4 ea	K-6608

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® Plus DualStar™ qPCR Master Mix (with UDG) on ice and mix thoroughly before use. Then, briefly spin down components.

2. Dispense appropriate volumes of AccuPower® Plus DualStar™ qPCR Master Mix (with UDG) into PCR tubes (not provided). Use 25 µl of 2X Master Mix for 50 µl reaction.</td></tr>
<tr><td>2</td><td> 
Preparation of reaction mixture</td><td>3. Add template DNA, target-specific primers, hydrolysis probe (not provided), 50X ROX dye (optional), and DEPC-D.W. into PCR tubes containing AccuPower® Plus DualStar™ qPCR Master Mix (with UDG).

• Preparation of reaction mixture
<table><tr><th>Components</th><th>50 µl reaction</th></tr><tr><td>2X Master Mix</td><td>25 µl</td></tr><tr><td>Template DNA (10 pg- 100 ng)</td><td>Variable</td></tr><tr><td>Forward primer (10 pmol/µl)</td><td>0.5-5 µl</td></tr><tr><td>Reverse primer (10 pmol/µl)</td><td>0.5-5 µl</td></tr><tr><td>Hydrolysis probe (10 pmol/µl)</td><td>0.5-5 µl</td></tr><tr><td>(Optional) 50X ROX dye</td><td>1 µl</td></tr><tr><td>DEPC-D.W.</td><td>Variable</td></tr><tr><td>Total volume</td><td>50 µl</td></tr></table>* Note: This protocol was validated with the TaqMan® probe as a hydrolysis probe.

4. Seal real-time PCR tubes or plate with adhesive optical sealing film (Cat. No. 3111-4110, not provided).

5. Mix the reaction mixture by vortexing, and briefly spin down.</td></tr>
<tr><td>3</td><td> 
Real-time PCR</td><td>6. Perform the reaction under the following conditions.
<table><tr><th>Step</th><th>Temperature</th><th>Time</th><th>Cycles</th></tr><tr><td>UDG activation</td><td>37°C</td><td>2 min</td><td>1 cycle</td></tr><tr><td>Pre-denaturation</td><td>95°C</td><td>3-5 min</td><td>1 cycle</td></tr><tr><td>Denaturation</td><td>95°C</td><td>5-30 sec</td><td rowspan="2">40-45 cycles</td></tr><tr><td>Annealing & Extension</td><td>55-60°C</td><td>30-35 sec</td></tr></table>* Note: Users can adjust the protocol according to their instrument and template DNA sequences to get optimal results.

7. After the reaction, perform data analysis.</td></tr>
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