AccuPower® rPLU/rVIV PCR Kit

[Cat. No.] K-2940

Introduction

AccuPower® rPLU/rVIV PCR Kit is a ready-to-use premix for nested PCR that can be used to detect malaria infection.
Plasmodium spp. is the causative organism of malaria, which is an epidemic that has a high risk and a mortality rate. Each year, it infects more than 200 million people worldwide. When bitten by an infected female mosquito, people may show various symptoms, such as headache, splenomegaly, jaundice, and anemia. Patients may also show signs of chill and high fever above 39-41°C. In the case of South Korea, *Plasmodium vivax* is the major cause of malaria. Polymerase chain reaction (PCR) is used for an accurate diagnosis of the infectious agent.
This product contains vacuum-dried components specific to *Plasmodium vivax* including DNA polymerase, primers, dNTPs, and reaction buffer required for PCR. This ready-to-use kit simplifies preparation of PCR mixture as the user only has to add template DNA and nuclease-free water. After the reaction, since tracking dye is included, the samples can be applied directly on agarose gel for analysis without adding extra solution.

Features & Benefits

- Nested PCR: Detect *Plasmodium vivax* with nested PCR consisting of rPLU PCR Kit and rVIV PCR Kit.
- Convenience & Reproducibility: All reactants necessary for PCR including primers are lyophilized in each PCR tube, providing reproducible results in a convenient way.
- Sensitivity: By applying the patented PyroHotStart (Enzyme-mediated HotStart) technology that minimizes non-specific reactions and maximizes reaction efficiency, only the target gene can be effectively amplified even with a trace amount of template DNA.
- Stability: Included stabilizer in the PCR reaction mixture provides increased stability compared to solution-type products.

Composition

Composition	20 µl reaction	
	1st PCR	2nd PCR
Top DNA Polymerase	1 U	1 U
dNTPs (dATP, dCTP, dGTP, dTTP)	Each 250 µM	Each 250 µM
Reaction buffer with 1.5 mM $MgCl_2$	1X	1X
Stabilizer and tracking dye	O	O
rPLU 5 Forward primer	0.45 µM	X
rPLU 6 Reverse primer	0.45 µM	X
rVIV Forward primer	X	0.55 µM
rVIV Reverse primer	X	0.55 µM

*** Note:** For research use only. Not for use in diagnostic or therapeutic procedures.

Specifications

Top DNA Polymerase	
5'→3' exonuclease activity	No
3'→5' exonuclease activity	No
3'–A overhang	Yes
1st fragment size	1,200 bp
2nd fragment size	120 bp

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

English

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

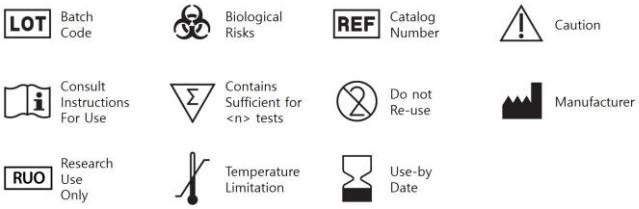
Ordering Information

Description	Cat. No.
AccuPower® rPLU PCR Kit, 0.2 ml thin-wall 8-tube strips with attached cap / 96 tubes *AccuPower*® rVIV PCR Kit, 0.2 ml thin-wall 8-tube strips with attached cap / 96 tubes	K-2940

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> 
Preparation of 1st reaction mixture</td><td>1. After preparing the template DNA and nuclease-free water, add the template DNA to the AccuPower® rPLU PCR Kit.

2. Add nuclease-free water into PCR tubes to make a total volume of 20 µl.
(Do not include the volume of the dried premix in the PCR tubes.)

3. Completely dissolve the vacuum-dried pellet by vortexing, and briefly spin down.</td></tr>
<tr><td>2</td><td> 
Incubate reactions in a thermal cycler</td><td>4. Place PCR tubes on the thermal cycler and 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>92°C</td><td>30 sec</td><td></td></tr><tr><td>Annealing</td><td>60°C</td><td>60 sec</td><td>30 cycles</td></tr><tr><td>Extension</td><td>72°C</td><td>60 sec</td><td></td></tr><tr><td>Final extension</td><td>72°C</td><td>5 min</td><td>1 cycle</td></tr></table>* Note: Users can adjust the protocol according to their instrument and template sequences to get optimal results.</td></tr>
<tr><td>3</td><td> 
Preparation of 2nd reaction mixture</td><td>5. After the 1st PCR reaction is completed, add 1-5 µl of the reaction solution into the AccuPower® rVIV PCR Kit.

6. Add nuclease-free water into PCR tubes to make a total volume of 20 µl.
(Do not include the volume of the dried premix in the PCR tubes.)

7. Completely dissolve the vacuum-dried pellet by vortexing, and briefly spin down.</td></tr>
<tr><td>4</td><td> 
Incubate reactions in a thermal cycler</td><td>8. Place PCR tubes on the thermal cycler and perform the reaction under the following conditions.
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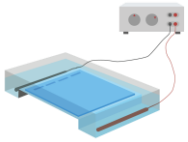
<tr><td>5</td><td> 
Analyze with gel electrophoresis</td><td>9. After the reaction, maintain the reaction mixture at 4-8°C.

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