

[Cat. No.] **K-2906**

Introduction

AccuPower® Brucella PCR Kit is a ready-to-use premix for PCR that can be used to detect *Brucella*, a bacterium that causes brucellosis in cattle, sheep and pigs.

Brucellosis is a bacterial infection that causes miscarriage and preterm birth in the second half of pregnancy. It can be found in livestock, such as cattle, deer, dogs, pigs, goats, sheep, and various other wild animals. Brucellosis is a zoonotic disease that can also infect humans by having contact with infected animals or animal products. Bacteria may enter the body through skin wounds or conjunctiva exposure. Symptoms include chills, headaches, and joint pain. The most crucial step when diagnosing brucellosis is checking its clinical manifestation and causative agents. Therefore, culture tests, serologic tests, and qualitative PCR tests are performed for diagnostic tests.

This product contains vacuum-dried components specific to *Brucella* 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

- **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 |
|---|----------------|
| 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 | 0 |
| Bruc 16s Forward primer | 0.5 µM |
| Bruc 16s Reverse primer | 0.5 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 |
| Fragment size | 905 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

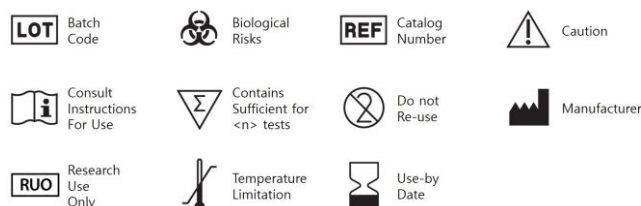
Ordering Information

| Description | Cat. No. |
|--|----------|
| AccuPower® Brucella PCR Kit, 0.2 ml thin-wall 8-tube strips with attached cap / 96 tubes | K-2906 |




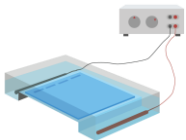
Notice

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Explanation of Symbols



Experimental Procedures

| Steps | | Procedure Details | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|--|--|-----------|-------------|------|--------|------------------|------|-------|---------|--------------|------|--------|--|-----------|------|--------|-----------|-----------|------|--------|--|-----------------|------|--------|---------|
| 1 |  <p>Add template DNA</p> | <p>1. After preparing the template DNA and nuclease-free water, add the template DNA to the <i>AccuPower®</i> Brucella PCR Kit.</p> | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 |  <p>Preparation of reaction mixture</p> | <p>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.)</p> <p>3. Completely dissolve the vacuum-dried pellet by vortexing, and briefly spin down.</p> | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 |  <p>Incubate reactions in a thermal cycler</p> | <p>4. Place PCR tubes on the thermal cycler.</p> <p>5. Perform the reaction under the following conditions.</p> <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time</th> <th>Cycles</th> </tr> </thead> <tbody> <tr> <td>Pre-denaturation</td> <td>94°C</td> <td>5 min</td> <td>1 cycle</td> </tr> <tr> <td>Denaturation</td> <td>94°C</td> <td>30 sec</td> <td></td> </tr> <tr> <td>Annealing</td> <td>57°C</td> <td>30 sec</td> <td>45 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>10 min</td> <td>1 cycle</td> </tr> </tbody> </table> <p>* Note: Users can adjust the protocol according to their instrument and template sequences to get optimal results.</p> | Step | Temperature | Time | Cycles | Pre-denaturation | 94°C | 5 min | 1 cycle | Denaturation | 94°C | 30 sec | | Annealing | 57°C | 30 sec | 45 cycles | Extension | 72°C | 60 sec | | Final extension | 72°C | 10 min | 1 cycle |
| Step | Temperature | Time | Cycles | | | | | | | | | | | | | | | | | | | | | | | |
| Pre-denaturation | 94°C | 5 min | 1 cycle | | | | | | | | | | | | | | | | | | | | | | | |
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| Final extension | 72°C | 10 min | 1 cycle | | | | | | | | | | | | | | | | | | | | | | | |
| 4 |  <p>Analyze with gel electrophoresis</p> | <p>6. After the reaction, maintain the reaction mixture at 4-8°C.</p> <p>7. Load samples on agarose gel without adding a loading-dye mixture, and perform gel electrophoresis for analysis.</p> | | | | | | | | | | | | | | | | | | | | | | | | |