

[Cat. No.] **K-2956**

Introduction

AccuPower® DP305423-1 PCR Kit is a ready-to-use premix for PCR that can be used to detect genetically modified soybeans by inducing gene silencing with *GM-FAD2-1* to suppress the expression of ω -6 desaturase and introducing *GM-HRA* to improve herbicide resistance.

Genetically modified organisms (GMOs) are organisms whose genetic material has been artificially modified to obtain desired characteristics, such as increased yield and resistance to pests and pathogens. Only those that have the approval of a regulatory agency, such as the Ministry of Food and Drug Safety in South Korea can be sold. Nowadays, many countries/regions require manufacturers to label products that include genetically modified products, leading to an increase in the demand for GMO detection technology.

This product contains vacuum-dried components specific to DP305423-1 GMO soybeans 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 | 25 μ l reaction |
|---|---------------------|
| Top DNA Polymerase | 1 U |
| dNTPs (dATP, dCTP, dGTP, dTTP) | Each 200 μ M |
| Reaction buffer with 2 mM MgCl ₂ | 1X |
| Stabilizer and tracking dye | O |
| DP305423-1 Forward primer | 0.52 μ M |
| DP305423-1 Reverse primer | 0.52 μ M |

* **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 | 149 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

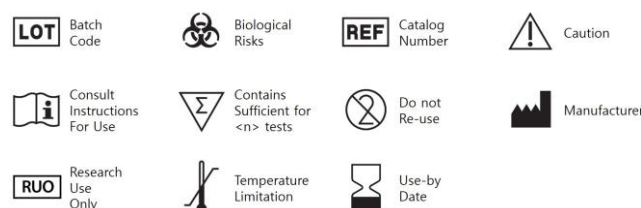
Ordering Information

| Description | Cat. No. |
|--|----------|
| AccuPower® DP305423-1 PCR Kit, 0.2 ml thin-wall 8-tube strips with attached cap / 96 tubes | K-2956 |




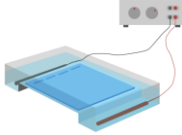
Notice

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Explanation of Symbols



Experimental Procedures

| Steps | | Procedure Details | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|--|--|-----------|-------------|------|--------|------------------|------|--------|---------|--------------|------|--------|--|-----------|------|--------|-----------|-----------|------|--------|--|-----------------|------|-------|---------|
| 1 |  Add template DNA | <p>1. After preparing the template DNA and nuclease-free water, add the template DNA to the <i>AccuPower®</i> DP305423-1 PCR Kit.</p> | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 |  Preparation of reaction mixture | <p>2. Add nuclease-free water into PCR tubes to make a total volume of 25 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 |  Incubate reactions in a thermal cycler | <p>4. Place PCR tubes on the thermal cycler.</p> <p>5. Perform the reaction under the following conditions.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time</th> <th>Cycles</th> </tr> </thead> <tbody> <tr> <td>Pre-denaturation</td> <td>95°C</td> <td>10 min</td> <td>1 cycle</td> </tr> <tr> <td>Denaturation</td> <td>95°C</td> <td>30 sec</td> <td></td> </tr> <tr> <td>Annealing</td> <td>60°C</td> <td>30 sec</td> <td>40 cycles</td> </tr> <tr> <td>Extension</td> <td>72°C</td> <td>30 sec</td> <td></td> </tr> <tr> <td>Final extension</td> <td>72°C</td> <td>7 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 | 95°C | 10 min | 1 cycle | Denaturation | 95°C | 30 sec | | Annealing | 60°C | 30 sec | 40 cycles | Extension | 72°C | 30 sec | | Final extension | 72°C | 7 min | 1 cycle |
| Step | Temperature | Time | Cycles | | | | | | | | | | | | | | | | | | | | | | | |
| Pre-denaturation | 95°C | 10 min | 1 cycle | | | | | | | | | | | | | | | | | | | | | | | |
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| Annealing | 60°C | 30 sec | 40 cycles | | | | | | | | | | | | | | | | | | | | | | | |
| Extension | 72°C | 30 sec | | | | | | | | | | | | | | | | | | | | | | | | |
| Final extension | 72°C | 7 min | 1 cycle | | | | | | | | | | | | | | | | | | | | | | | |
| 4 |  Analyze with gel electrophoresis | <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> | | | | | | | | | | | | | | | | | | | | | | | | |