

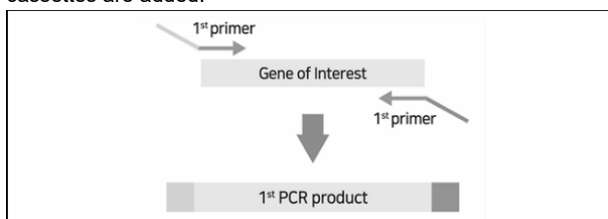
[Cat. No.] **K-7410**

Introduction

ExiProgen™ Protein Expression Optimization Kit rapidly generates multiple linear template DNAs using a two-step PCR process. The template DNAs include essential elements for protein expression and purification, along with sequences for 6 types of tags to optimize the protein expression conditions. The kit enables the production of 6 templates (1 control DNA with tag 1 to 6) of more than 1 µg and 30 templates (5 target genes with tag 1 to 6).

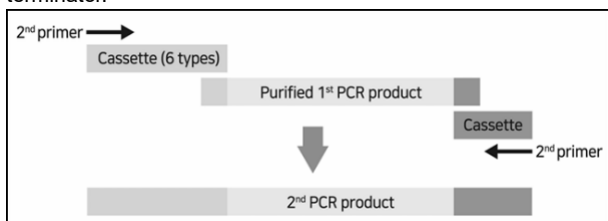
A. First PCR

In the first PCR, target genes are amplified and partial sequences of cassettes are added.



B. Second Overlapping PCR

In the second PCR, the cassettes are added to the upstream and downstream of first PCR products. The cassettes are DNA fragments containing sequences of the T7 promoter, ribosomal binding site, six histidine tag, one of the 6 types of tag, TEV cleavage site and T7 terminator.



Features & Benefits

- Convenient: Contains all PCR components for generating template DNA for screening optimal expression conditions.
- Rapid: Saves time by getting the template DNA through PCR instead of time-consuming cloning steps.
- Minimized PCR error: Provides AccuPower® ProFi Tag PCR PreMix, having high accuracy and precision, to lower the error rate as much as possible.

Components

Components	Concentration	Amount
AccuPower® ProFi Tag PCR Premix	-	50 µl x 96 tubes
Tag 1_Cassette mixture	7.5 ng/µl	70 µl x 1 ea
Tag 2_Cassette mixture	7.5 ng/µl	70 µl x 1 ea
Tag 3_Cassette mixture	7.5 ng/µl	70 µl x 1 ea
Tag 4_Cassette mixture	7.5 ng/µl	70 µl x 1 ea
Tag 5_Cassette mixture	7.5 ng/µl	70 µl x 1 ea
Tag 6_Cassette mixture	7.5 ng/µl	70 µl x 1 ea

Control DNA	10 ng/µl	10 µl x 1 ea
1 st Forward primer (for Control DNA)	10 pmol/µl	10 µl x 1 ea
1 st Reverse primer (for Control DNA)	10 pmol/µl	10 µl x 1 ea
2 nd Forward primer	10 pmol/µl	220 µl x 1 ea
2 nd Reverse primer	10 pmol/µl	220 µl x 1 ea

* **Note:** Refer to experimental procedures to prepare a set of gene-specific primers to amplify the target gene before using the kit.

Specifications

Expression enhanced tags			
Tag 1	-	Tag 4	Ubiquitin
Tag 2	Expressivity	Tag 5	Trx
Tag 3	S	Tag 6	SNUT

Storage

Store at a temperature between -70°C and -20°C.

Online Resources



Korean



English

Visit our [product page](#) for additional information and protocols

Ordering Information

Description	Cat. No.
ExiProgen™ Protein Expression Optimization Kit	K-7410




Notice

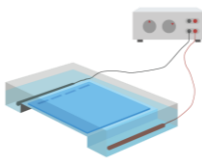


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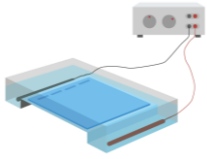
Explanation of Symbols

LOT Batch Code	REF Catalog Number	Caution	Consult Instructions For Use
Contains Sufficient for <n> tests	Do not Re-use	Manufacturer	Research Use Only
Temperature Limitation	Use-by Date		

Experimental Procedures

Steps		Procedure Details																								
1	 Primer design	<p>1. Prepare the gene-specific primers as shown below.</p> <table border="1"> <thead> <tr> <th>Primers</th> <th>Sequences (5' to 3')</th> </tr> </thead> <tbody> <tr> <td>1st Forward primer (48-mer)</td> <td>GAGCTCGAAAACCTTATATTTTCAGGGC + 21-mer from the target gene's 5' end</td> </tr> <tr> <td>1st Reverse primer (48-mer)</td> <td>GGGCTTTGTTAGCAGCCGGTCGACCTA + 21-mer from the target gene's 3' end in reverse complementary sequence</td> </tr> </tbody> </table> <ul style="list-style-type: none"> Primers for control DNA <table border="1"> <thead> <tr> <th>Primers</th> <th>Sequences (5' to 3')</th> </tr> </thead> <tbody> <tr> <td>1st Forward primer (for Control DNA)</td> <td>GAGCTCGAAAACCTTATATTTTCAGGGC + ATGGAAATTAATGTGTTAAT (21-mer)</td> </tr> <tr> <td>1st Reverse primer (for Control DNA)</td> <td>GGGCTTTGTTAGCAGCCGGTCGACCTA + CTCGAGTATGTAAGATAGTAT (21-mer)</td> </tr> </tbody> </table> <p>* Note: Annealing of primers to control DNA</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>5' ATGGAAATTAATGTGTTAAT ATACTATCTTACATACTCGAG 3'</p> <p style="margin-left: 100px;">← 21 mer</p> <p>3' TACCTTAATTTACACAATTA TATGATAGAATGTATGAGCTC 5'</p> <p style="margin-left: 100px;">→ 21 mer</p> </div>	Primers	Sequences (5' to 3')	1 st Forward primer (48-mer)	GAGCTCGAAAACCTTATATTTTCAGGGC + 21-mer from the target gene's 5' end	1 st Reverse primer (48-mer)	GGGCTTTGTTAGCAGCCGGTCGACCTA + 21-mer from the target gene's 3' end in reverse complementary sequence	Primers	Sequences (5' to 3')	1 st Forward primer (for Control DNA)	GAGCTCGAAAACCTTATATTTTCAGGGC + ATGGAAATTAATGTGTTAAT (21-mer)	1 st Reverse primer (for Control DNA)	GGGCTTTGTTAGCAGCCGGTCGACCTA + CTCGAGTATGTAAGATAGTAT (21-mer)												
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3	 Incubate reactions in a thermal cycler	<p>4. Perform the first PCR 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>58°C</td> <td>30 sec</td> <td>30 cycles</td> </tr> <tr> <td>Extension</td> <td>72°C</td> <td>1 min/kb</td> <td></td> </tr> <tr> <td>Final extension</td> <td>72°C</td> <td>5 min</td> <td>1 cycle</td> </tr> </tbody> </table> <p>* Note: The length of first PCR product from control DNA of 462 bp is 516 bp.</p>	Step	Temperature	Time	Cycles	Pre-denaturation	94°C	5 min	1 cycle	Denaturation	94°C	30 sec		Annealing	58°C	30 sec	30 cycles	Extension	72°C	1 min/kb		Final extension	72°C	5 min	1 cycle
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<p>4</p>	 <p>Analyze with gel electrophoresis</p>	<p>5. After the reaction, maintain the reaction mixture at 4-8°C. The samples can be stored at -20°C until use.</p> <p>6. Load the samples on agarose gel without adding a loading-dye mixture, and perform gel electrophoresis for analysis.</p> <p>7. Purify the samples using a gel purification kit.</p>																																													
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