TransDirect® Plant Tissue PCR Kit

Please read the manual carefully before use.

Cat. No. AD301

Version No. Version 2.0

Storage: 2×*TransDirect*® PCR SuperMix II (+dye) at -18°C or below for two years, others at room temperature (15°C-30°C) for two years

Description

This kit utilizes a unique lysis buffer to lyse tissues (fresh or frozen). The resulting lysate can be used directly as a template without purification and amplified using inhibition-resistant 2×*TransDirect*® PCR SuperMix II (+dye). The amplified products can be directly loaded for electrophoresis.

Features

• Uses lysate directly as a PCR template, suitable for high-throughput sample screening.

• Amplification fragments ≤ 2 kb.

Sample Requirements

Plants without high levels of polysaccharides or polyphenols.

Kit Contents

Component	AD301-01	AD301-02
PD1 Buffer	4 ml	20 ml
PD2 Buffer	4 ml	20 ml
2×*TransDirect*® PCR SuperMix II (+dye)	1 ml	5×1 ml
Nuclease-free Water	5 ml	25 ml

Procedures

Please prepare a 95°C water bath, metal bath, or PCR instrument in advance. If a white precipitate appears in the solution, heat it at 55°C to dissolve before use.

A: Sample Lysis

1. Take approximately 5 mg or 0.5 cm² of plant tissue sample, cut it into small pieces, add 40 µl of PD1 Buffer, and mix well by pipetting or vortexing.
2. Incubate at 95°C for 10 minutes.
3. Add 40 µl of PD2 Buffer, mix well, and use directly as a template for PCR or store at 2°C–8°C or –20°C.

B: PCR

Reaction Components (taking 20 µl reaction system as an example)

Component	Volume	Final Concentration
Unpurified Lysate	Variable (≤4 µl)	as required
Forward Primer (10 µM)	0.4 µl	0.2 µM
Reverse Primer (10 µM)	0.4 µl	0.2 µM
2×*TransDirect*® PCR SuperMix II (+dye)	10 µl	1×
Nuclease-free Water	Variable	-
Total volume	20 µl	-

PCR

94℃	5-10 min	
94℃	30 sec	35-40 cycles
X℃	30 sec	
72℃	1-2 kb/min	
72℃	5-10 min	

Note: The annealing temperature X is the theoretical Tm value of the primers ±2–5 °C.

Notes

- Avoid repeated freeze-thaw cycles of samples.
- Ensure reagents are completely thawed and thoroughly mixed before use.
- For tissues that are difficult to lyse (e.g., waxy leaves), the incubation time at 95°C can be extended to 30 minutes.
- If the amplification band is weak, you may increase the template amount or the number of PCR cycles (should not exceed 40 cycles).
- If non-specific amplification is excessive, adjust the annealing temperature or appropriately increase or decrease the template amount.
- The recommended primer concentration is typically 0.2 μM. It can be adjusted within the range of 0.1–0.5 μM based on experimental results.
- The optimal template amount generally does not exceed 10% of the reaction system. For example, in a 20 μl system, the recommended template volume is 1–2 μl, with a maximum of 4 μl. • Excessive template may inhibit the PCR reaction.
- Lysates can be stored at 2°C–8 °C for three months, or at –20°C for six months.

For research use only, not for clinical diagnosis.

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