CTAB Extraction Buffer

C1518318

Storage Room temperature. Protect from light.
Shipping Regular transportation.

Introduction

Common methods for extracting genomic DNA from plant tissues include cesium chloride centrifugation, CTAB extraction, and others. The CTAB extraction method is a classic approach for plant DNA extraction and can be used for various types of plant samples. This method yields a high amount of DNA, and although the purity is generally moderate, it is sufficient for most molecular biology experiments.

The active component of the CTAB Extraction Buffer is CTAB (hexadecyltrimethylammonium bromide). Before use, 2-ME must be added to enhance the effectiveness and stability of the reagent. This product is intended for scientific research only and is not suitable for clinical diagnosis or other purposes.

Component List

C1518318	Component	500 mL	Storage
C1518318A	CTAB Extraction Buffer	500 mL	RT.
C1518318B	2-ME	10 mL	RT. Store in the dark.

Materials to Prepare

1. Laboratory equipment: Liquid nitrogen, mortar or homogenizer, centrifuge tubes, incubator or water bath, centrifuge.
2. Reagents: Chloroform/isoamyl alcohol (24:1), 75% ethanol.

Procedure (For Reference Only)

1. Take an appropriate amount of 5 mL of CTAB Extraction Buffer and mix it with 2-ME in a ratio of 50:1 (CTAB Extraction Buffer:2-ME). Place the mixture in a 15 mL or other appropriate centrifuge tube and preheat it to 60°C. If necessary, add 1–5 μg/mL of RNase A to remove residual RNA.
2. Weigh 1–1.5 g or an appropriate amount of fresh plant tissue or leaves. Use pre-chilled liquid nitrogen or dry ice to cool the mortar or homogenizer, and grind the plant tissue into a fine powder. Then, transfer the frozen tissue into the centrifuge tube.
3. Add the preheated CTAB Extraction Buffer to the powdered tissue at a ratio of 4–5 mL/g. Mix thoroughly and incubate at 65°C for 15–60 min, mixing occasionally during incubation.

4. Add an equal volume of chloroform/isoamyl alcohol (24:1). Invert the centrifuge tube to mix thoroughly. Centrifuge at 8000g for 5–10 min and recover the upper aqueous phase (supernatant containing the desired DNA).
5. Transfer the supernatant to a new centrifuge tube. Add 1/2 to 2/3 volumes of pre-chilled isopropanol, mix gently, and let it stand at room temperature to allow nucleic acid precipitation at the bottom of the tube. If no precipitate is observed, let it stand at room temperature for several hours or overnight.
6. Centrifuge at 2000g for 2 min and carefully discard the supernatant.
7. Add 75% ethanol to the loose DNA pellet, let it stand at room temperature for 20 min, and centrifuge at 4000g for 10 min. Carefully discard the supernatant.
8. Air-dry the DNA naturally and dissolve it in an appropriate amount of deionized water or TE buffer. If necessary, add 1–5 μg/mL of RNase A to remove residual RNA. Finally, store at -20°C.

Precautions

1. If the reagent is used in small quantities each time, it is recommended to aliquot it appropriately to avoid repeated freeze-thaw cycles or contamination.
2. To ensure your safety and health, wear laboratory gloves and a lab coat during operation.
3. Once opened, use the reagent as soon as possible to avoid compromising subsequent experimental results.