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Magbead Plant Nucleic Acid(DNA/RNA) Extraction Kit

Product Number: DRK78100

Shipping and Storage

The reagent kit is stored at 4~30℃ and has an expiration date of 18 months.

Components

Component	DRK78100 100Preps	DRK7850 50Preps
Magnetic Beads	1.7 mL	0.85 mL
Buffer LY	64 mL	32 mL
Buffer WB1	54 mL	27 mL
Buffer WB2	126 mL	2 63 mL
Buffer EB	16 mL	8 mL
LP Buffer	50 mL	25 mL
Buffer EH2	60μl	30μl

Note:The components of different models of test kits cannot be interchanged, and the components of test kits with different batch numbers cannot be interchanged. In order to minimize the absorbance effect of blank solution, when measuring nucleic acid concentration (A260, A280, A230) using UV absorbance method, Buffer EB is used as the blank control.

Description

This reagent kit uses magnetic beads with unique separation properties and a unique buffer system to isolate and purify high-quality nucleic acids from plant tissue samples. The reagent kit undergoes a unique nucleic acid extraction solution and Enhancement Buffer 2 pre-treatment, followed by magnetic bead binding, cleaning, and elution steps to remove proteins and other impurities. The resulting nucleic acid product has high purity and can be directly applied in various downstream molecular biology experiments such as qPCR, library construction, and NGS.

This product can be perfectly matched with an automatic nucleic acid extractor. By using specially designed magnetic rods to adsorb, transfer, and release magnetic beads, the transfer of magnetic beads and nucleic acids is achieved, improving the degree of automation. The entire experimental process is safe and convenient, and the extracted nucleic acid has high purity, without protein and other impurities pollution.

Application

This product is suitable for isolating and purifying high-quality nucleic acids from plant tissue samples, and the processed products are used for scientific research.

Sample requirements

1. Applicable sample type: Plant tissue tender leaf samples.
2. Sample storage and transportation: Samples can be used for testing immediately or stored at -20±5℃ for testing. Sample transportation is done by curling at 0℃.

Applicable instruments

A strip nucleic acid extractor with heating in column 6 or a plate nucleic acid extractor with heating in plate 6.

Note

For Research Use Only

1. Please read this manual carefully before the experiment.
2. Different models of nucleic acid extractors may require different extraction programs due to hardware limitations. Please consult our company for detailed parameters.
3. To avoid any potential biological hazards in the sample, the test sample should be considered infectious and avoid contact with skin and mucous membranes; The handling of samples is recommended to be carried out in a biosafety cabinet that can prevent the outflow of mist. The test tubes and suction heads used in the sample preparation area must be placed in containers containing disinfectants and sterilized together with the waste before being discarded; Sample operation and processing must comply with relevant regulatory requirements: the General Guidelines for Biological Safety in Microbial Biomedical Laboratories and the Regulations on Medical Waste Management issued by the Ministry of Health.
4. The components in the reagent kit must be used within the validity period. Failure to use the components provided in this reagent kit for experiments may result in incorrect results.
5. Laboratory management should strictly follow the management standards of PCR gene amplification laboratories. Experimental personnel must receive professional training, and the experimental process should be strictly divided into zones (reagent preparation zone, sample preparation zone, amplification and product analysis zone). Consumables used should be sterilized and used in one go. Specialized instruments and equipment should be used in each stage of the experimental operation, and supplies in each zone and stage should not be used interchangeably.
6. Use disposable centrifuge tubes and pipettes sterilized under high pressure or purchase centrifuge tubes and pipettes without DNA/RNA enzymes.
7. After completing the nucleic acid extraction of the sample, it is recommended to proceed to the next step of the experiment immediately. Otherwise, please store it at -20℃ for use (within 24 hours).
8. After the experiment is completed, treat the workbench and pipette with 5% hypochlorous acid or 75% alcohol, and then irradiate with a UV lamp for 20-30 minutes.

Protocol(Manual operation)

1. Add approximately 100 mg of fresh plant tissue and tender leaf samples to a 2 mL centrifuge tube, and grind thoroughly by adding grinding beads or freezing with liquid nitrogen.
2. Add the ground powder to a centrifuge tube pre filled with 450μl Buffer LP, add 0.45μl Buffer EH2, quickly invert and mix well, and incubate at 70 ℃ for 10 minutes. During this time, invert the centrifuge tube to mix the sample several times.
3. Centrifuge at 12000 rpm for 4 minutes, transfer 300μl of supernatant into a new centrifuge tube.
4. Add 580μl Buffer LY and 15μl Magnetic Beads, shake and mix well.
5. Leave at room temperature for 5 minutes, invert and mix several times during this time.
6. Place the centrifuge tube on a magnetic stand and let it stand for 1 minute until the magnetic beads inside the tube are completely adsorbed onto the wall of the centrifuge tube. Use a pipette to remove the liquid inside the tube and remove the centrifuge tube.
7. Add 500μl Buffer WB1, vortex and mix for 3 minutes to suspend the magnetic beads. Use a magnetic rack to adsorb the magnetic beads, and after 30 seconds, remove the liquid from the tube and remove the centrifuge tube.
8. Add 600μl Buffer WB2 and vortex mix for 3 minutes to suspend the magnetic beads. Use a magnetic rack to adsorb the magnetic beads. After 30 seconds, remove the liquid from the tube and remove the centrifuge tube.
9. Repeat step 8
10. Collect droplets on the wall of the tube through brief centrifugation. Use a magnetic bracket to adsorb magnetic beads, and after 1 minute, remove all liquids from the tube.
11. Open the lid and dry the centrifuge tube at 40 ℃ for 6 minutes (until the surface of the magnetic beads is dull).
    Note:Residual ethanol can inhibit subsequent enzyme reactions. When drying, ensure that ethanol evaporates completely. Prolonged drying can lead to difficulty in eluting nucleic acids.
12. Add 50-100μl Buffer EB to resuspend the magnetic beads and incubate at 75 ℃ for 10 minutes.
13. Collect droplets on the wall of the centrifuge tube through brief centrifugation. Place the centrifuge tube on a magnetic rack for

1 minute to allow the magnetic beads to be adsorbed. Transfer the liquid to a clean 1.5 mL centrifuge tube for later use. The purified nucleic acid can be used for downstream analysis. If not in a hurry to use, the nucleic acid solution can be stored in a -20 ℃ refrigerator for later use.

Limitations of the product

The efficiency of sample extraction is related to whether the operator strictly follows the instructions. If cross contamination is not properly controlled during sample processing, low nucleic acid concentration may result.

Product performance indicators

1. Appearance inspection: The appearance of each component is clean, without leakage or damage; The label should be complete and undamaged, the identification should be clear and complete, and there should be no omission of information; When visually mixing Magnetic Beads, it appears as a black homogeneous and precipitate free liquid. After settling, the magnetic beads precipitate as black, and the supernatant is clear and transparent; Visually, Buffer EH2 is a colorless, transparent, clear, and impurity free liquid.
2. The ratio of A260/A280 extracted from this reagent kit is between 1.7 and 2.1.