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Magbead Plant Nucleic Acid(DNA/RNA) Extraction Kit

Product Number: DRK7896B

Shipping and Storage

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

Components

Component	DRK7896B 96Preps
Buffer LY Plate	96 Preps/Plate
Buffer WB1 Plate	96 Preps/Plate
Buffer WB2 Plate	96 Preps/Plate
Magnetic Beads Plate	96 Preps/Plate
Buffer EB Plate	96 Preps/Plate
LP Buffer	47mL
Buffer EB	1.2mL
96-Magnetic sleeve	96 Preps/Plate
Buffer EH 2	60μL

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

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(Automated operation steps)

Plate nucleic acid extraction reagent

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.As a backup for the test sample.
4. Invert the pre installed plate placed at room temperature three times and centrifuge briefly (or shake by hand) in a 96 well plate centrifuge to avoid liquid hanging.
5. Tear off the sealing aluminum foil film of the pre loaded plate of the lysis binding solution, add 300uL of the above test sample to the Buffer LY Plate, and place the Buffer LY Plate with the added sample in position 1 of the extractor.
6. Tear off the sealing aluminum foil film of the magnetic bead liquid pre assembly plate and place the Magnetic Beads Plate in position 2 of the extractor.

   Note: In order to prevent Magnetic Beads from hanging on the film and sticking to the hole wall, please make sure to invert the board three times before tearing off the aluminum foil film, and then vigorously shake the board bottom down twice, so that all the liquid in each hole slides to the bottom of the hole before tearing off the aluminum foil film
7. Tear open the sealing aluminum foil film of the Buffer WB1 Plate pre installed board and place the Buffer WB1 Plate in position 3 of the extractor.
8. Tear off the sealing aluminum foil film of the pre installed plate for washing solution 2, and place two Buffer WB2 plates in positions 4 and 5 of the extractor.

9. Tear open the sealing aluminum foil film of the Buffer EB Plate and place it in position 6 of the extractor.

Note: The liquid volume of the Buffer EB Plate is small. To prevent the liquid from hanging on the sealed aluminum foil film, please make sure that the bottom of the plate is facing downwards and shake twice before tearing off the aluminum foil film, so that all the liquid in each hole slides to the bottom of the hole before tearing off the aluminum foil film

10. Set extraction program: (Suitable for plate nucleic acid extractor heated on the 6th plate)

Step	Hole	Name	Waiting Time(s)	Mixing Time(s)	Magnetization Time(s)	Mixing Speed 1-10	Volume μL	Temperature state	Temperature ℃
1	1	Cracking	0	300	0	7	900	Off	0
2	2	Magnetic shift	0	20	20	8	500	Off	0
3	1	Combine	0	300	20	7	900	Off	0
4	3	Washing 1	0	180	20	7	500	Off	0
5	4	Washing 2	0	180	20	7	600	Off	0
6	5	Washing 2	0	180	20	7	600	Off	0
7	6	Elution	300	600	20	5	100	6th hole	75
8	2	Demagnetization	0	10	0	8	500	Off	0

11. Insert the 96 well magnetic rod sleeve into the automatic nucleic acid extractor and start the program.

12. After the program runs, the purified nucleic acid is placed on board 6. Carefully transfer the nucleic acid to a clean 1.5 mL centrifuge tube using a pipette 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.

Note: If the magnetic absorption parameter of the extractor is the number of magnetic absorption times, the time is 20 seconds per time.

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.