TGuide S32 Magnetic Plant DNA Kit

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TGuide S32 Magnetic Plant DNA Kit

Cat.no. 4992989

Kit Contents

Contents	4992989 (96 preps)
Buffer GPS	70 ml
Buffer GPA	20 ml
Plant DNA Extraction Reagents	6 plates
S32 Tip Comb	12 sets
Proteinase K	2×1 ml
RNase A (10 mg/ml)	1 ml
Handbook	1

Storage

This kit can be stored at room temperature (15-25°C) under dry condition for 12 months. For longer storage, we suggest storing the kit at 2-8°C. If a precipitate has formed in Buffer under 2-8°C, please place the buffer at room temperature or warm at 37°C for 10 min to dissolve the precipitate.

Introduction

The kit adopts magnetic beads with unique separation function and a unique buffer system to separate and purify high-quality genomic DNA from various plant tissues. The unique embedded magnetic beads have strong affinity for nucleic acid under certain conditions, and when the conditions change, the magnetic beads will release adsorbed nucleic acid, thus achieving the purpose of fast separation and purification of nucleic acid.

The product is perfectly matched with TGuide S32 Automated Nucleic Acid Extractor, thus realizing the transfer of magnetic beads and nucleic acids. The whole experimental process is safe and convenient. The extracted genomic DNA fragments are large in size, with high purity and stable and reliable quality.

The DNA purified by the kit is suitable for various conventional operations, including enzyme digestion, PCR, library construction, Southern blot and other experiments.

Features

Easy and fast: Ultrapure genomic DNA can be obtained within 1 hour.

Wide applicable: It is suitable for various plant tissues, especially polysaccharide/polyphenol-rich plants.

Safe and nontoxic: No toxic organic reagents such as phenol/chloroform are needed.

High purity: The obtained DNA has high purity and can be directly used in chip detection, high-throughput sequencing and other experiments.

Notes **Please read these notes before using this kit.**

1. Repeated freezing and thawing of the sample should be avoided, otherwise the extracted DNA fragments will be smaller and the extraction yield will decrease.
2. If there is precipitation in Buffer GPS, dissolve the buffer in 37°C water bath and used after shaking.

Protocol

1. Preparation of plant genomic DNA extraction reagent

Take out the vacuum package prepackaged 96-deep-well plate from the kit, mix it upside down for several times to resuspend the magnetic beads, remove the vacuum package. Gently shake the 96-deep-well plate to concentrate the reagent and magnetic beads to the bottom of the 96-deep-well plate (or centrifuge at 500 rpm for 1 min by the plate centrifuge). Carefully tear off the aluminum foil sealing film before use to avoid vibration of the 96-deep-well plate and prevent liquid spillage.

2. Sample treatment

2.1 Take about 100 mg of fresh plant tissue or about 30 mg of dry weight tissue, and fully grind with liquid nitrogen.

2.2 Quickly transfer the ground powder to a centrifuge tube added with 600 µl Buffer GPS and 20 µl Proteinase K in advance. After quickly inverting to mix, incubate the tube in a water bath at 65°C for 15 min. Invert the centrifuge tube during the water bath to mix the samples several times.

2.3 Add 10 µl RNase A (10 mg/ml), mix well, and let it stand at room temperature for 5 min.

2.4 Add 150 µl of Buffer GPA, mix well, and ice bath for 5 min.

2.5 Centrifuge at 12,000 rpm for 5 min.

3. TGuide S32 Automated Nucleic Acid Extractor operation steps

3.1 Add 450 µl of the supernatant solution of the above treated sample in columns 1 and 7 of the 96-deep-well plate. Place the 96-deep-well plate on the 96-deep-well plate base of TGuide S32 Automated Nucleic Acid Extractor.

Note: Don't touch the bottom precipitate when aspirating the supernatant, and the maximum volume of transferred supernatant should not exceed 500 µl.

3.2 Insert the S32 Tip Comb into the magnetic rod comb slot.

3.3 Run the plant automatic extraction program on TGuide S32 Automated Nucleic Acid Extractor

Turn on the supporting Windows Pad, double-click the “Purification” icon to enter the TGuide S32 control program, click “Run”, select the corresponding experimental program file and click the “Run” button in the lower right corner to start the experiment.

The specific experimental procedures are shown in the following table:

Step	Slot	Name	Waiting time (min)	Mixing time (min)	Adsoption time (sec)	Mixing speed	Volume (μl)	Temper-ature (°C)	Strong adsorption mode
1	1	Lysis	0	3	0	Fast	900	--	--
2	6	Beads transfer	0	0.5	60	Fast	615	--	Yes
3	1	Beads adsorption	0	8	60	Fast	900	--	Yes
4	6	Washing 1	0	3	60	Fast	615	--	Yes
5	2	Washing 2	0	3	60	Fast	700	--	Yes
6	3	Washing 3	0	3	60	Fast	700	--	Yes
7	4	Washing 4	0	3	60	Fast	700	--	Yes
8	5	Elution	5	8	120	Fast	100	75	Yes
9	6	Beads disposal	0	0.5	0	Fast	615	--	--

3.4 Upon the completion of the automatic program, pipette out DNA sample in the 5th and 11th columns of the 96-deep-well plate and store under appropriate conditions.

Determination of DNA Concentration and Purity

The size of the obtained genomic DNA fragment is related to factors such as sample storage time and shearing force during operation. The concentration and purity of the obtained DNA fragments can be detected by agarose gel electrophoresis and ultraviolet spectrophotometer.

DNA should have a significant absorption peak at OD_{260}, with OD_{260} value of 1 equivalent to about 50 μg/ml double stranded DNA and 40 μg/ml single stranded DNA.

The ratio of OD_{260}/OD_{280} should be 1.7-1.9. If deionized water is used instead of elution buffer, the ratio will be low, because the pH value and the presence of ions will affect the light absorption value, but it does not mean the purity is low.