MBead Plant Genomic DNA Kit

Cat No. SN012-0100 Size: 100 Reactions
Cat No. SN012-0004 Size: 4 Reactions
Sample: Up to 100 mg of the fresh plant tissue
Up to 50 mg of the dry plant tissue
Format: Magnetic Bead System
Operation time: Within 50 minutes
Release volume: 200 µl

Description

This MBead Plant Genomic DNA Kit is designed specifically for isolating the genomic DNA from plant samples. Its unique buffer system will efficiently lyse cells and degrade proteins, allowing for the DNA to be easily bound by the surface of the magnetic beads. The RNA and other non-specific binding particles are removed with a wash buffer, and the genomic DNA is then released into the Release Buffer. The genomic DNA can be purified manually within 50 minutes (using most magnetic separators) or the kit can be easily adapted to satisfy most automated nucleic acid purification systems.

Features

- Fast, reproducible and easy processing by using a magnetic bead system.
- To isolate high quality genomic DNA.
- Isolated genomic DNA is compatible with various downstream applications.

Applications

- Restriction enzyme digestion.
- PCR amplification.
- Southern blotting.
- Real-Time PCR assay.

Kit Contents

Contents	SN012-0100	SN012-0004
Magnetic Bead	2 ml X 1 vial	80 µl X 1 vial
Grind Buffer	40 ml X 1 bottle	2 ml X 1 vial
Lysis Buffer	30 ml X 1 bottle	1.5 ml X 1 vial
Wash Buffer	80 ml X 1 bottle	2 ml X 2 vials
Release Buffer	20 ml X 1 bottle	1 ml X 1 vial

Quality Control

The quality of the MBead Plant Genomic DNA Kit is tested on a lot-to-lot basis to ensure consistent product quality.

Required Materials

- Tissue homogenizer (mortar and pestle)
- Magnetic separator
- Isopropanol
- 1.5 ml microcentrifuge tubes
- Liquid nitrogen

MBead Plant Genomic DNA Kit Protocol

Sample Preparation

1. Cut off the fresh plant tissue (up to 100 mg) or dry plant tissue (up to 50 mg).
2. Grind the sample in the liquid nitrogen to a fine powder using a mortar and pestle.
3. Add 400 µl of the Grind Buffer to the pestle and mortar and continue to homogenize the sample tissue by grinding.

Step 1 Lysis

1. Transfer the mixture from the Sample Preparation Step to a 1.5 ml microcentrifuge tube.
2. Incubate at 70°C for 30 minutes to lyse the sample. During incubation, invert the tube every 5 minutes.
3. Centrifuge for 5 minutes at 5,000 x g.
4. Transfer the supernatant to a new 1.5 ml microcentrifuge tube and add 200 µl of Lysis Buffer. Mix well and incubate at 65°C for 5 minutes. During this time, pre-heat the Release Buffer to 65°C for Step 4.
5. Add 400 µl of the isopropanol to the lysate and mix well.

Step 2 DNA Binding

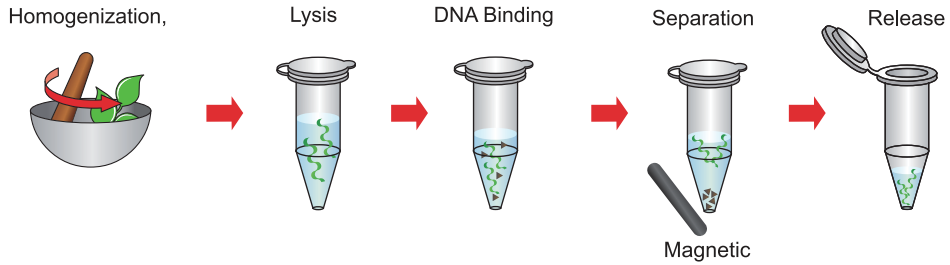
1. Add 20 µl of the Magnetic Beads. Mix well by gently shaking for 3 minutes.
2. Place the tube in a magnetic separator for 30 seconds.
3. Remove the solution (If the mixture becomes viscous, increase magnetic bead separation time).

Step 3 Wash

1. Add 800 µl of the Wash Buffer and mix well (Following the wash, the mixture will no longer be viscous).
2. Place the tube in a magnetic separator for 30 seconds. Remove the solution.

Step 4 Release

1. Add 200 µl of the Release Buffer (pre-heated to 65°C) and mix well.
2. Incubate for 3 minutes at 65°C (during incubation, shake the tube vigorously every minute).
3. Place the tube in a magnetic separator for 1 minute.
4. Carefully transfer ONLY the clean portion of the solution to a clean tube.
   NOTE: Be sure and allow the magnetic beads to disperse completely during the binding, wash and release steps.



Troubleshooting

Refer to the table below to troubleshoot problems that you may encounter when you did genomic DNA isolation with the kit.

Problem	Cause	Solution
DNA is smeared or degraded	Lysate mixed too vigorously	Use the appropriate pipette tip set for the required volume, lower it under the reading line of the solution to mix the sample, pipet up and down gently to mix.
	DNases contamination	Maintain a sterile environment while working (e.g. wear gloves and use DNase-free reagents).
RNA containment	Incomplete removal of the RNases	RNase A treatment
Low yields of genomic DNA	Incomplete lysis and homogenization	Complete lysis. Use the appropriate method for the lysate preparation based on the amount of starting materials.
	Incorrect release conditions	Add the Release Buffer (200 µl) and incubate for 3 minutes at 65°C.
	The quality of the starting material may not be optimal.	Use fresh sample and process immediately after collection, or freeze the sample at -80°C or in the liquid nitrogen.
High background on UV measurement	Residual beads released	Repeat the magnetic separation and transfer elute to a clean tube.

Related Ordering Information

Cat. No.	Description	Size
SM101-0500	*Taq* DNA polymerase	500 U
SM200-0100	PCR SUPERMIX	100 Reactions
SM201-0100	Hot Start SUPERMIX	100 Reactions
SM255-0100	Ultrapure Proteinase K	100 mg
SA001-0500	AGAROSE Tablet, 0.5g	100 Tablets
SL001-1000	Novel Juice Supplied in 6X Loading Buffer	1 ml
SD003-R600	100 bp DNA Ladder H3 RTU	600 µl
SD010-R600	1 Kb DNA Ladder RTU	600 µl
SD013-R600	XLarge DNA Ladder RTU	600 µl
ST040-4000	100 mM dNTP Set	4 x 1 ml
ST046-1000	100 mM dNTP Set	4 x 250 µl
ST025-1000	2.5 mM dNTP Mix	1 ml
ST100-1000	25 mM dNTP Mix	1 ml

Caution

- Check buffers before use for salt precipitation. Re-dissolve any precipitate by warming up to 37°C.
- During operation, always wear a lab coat, disposable gloves, and protective equipment.
- All products are for research use only.