GenSpin™ Plant DNA Purification Kit

The GenSpin Plant DNA Purification Kit is designed for the rapid preparation of double-stranded DNA in solution from small quantities of plant material for PCR analysis. Using a single microcentrifuge tube, this simple protocol enables the recovery of DNA for more than 50 amplification reactions from just 10 mg of plant tissue. The small sample capability is ideally suited for rapid analysis studies such as identification of genetically-modified plants and cultivar screening.

Plant material is homogenized at room temperature and applied to the GenSpin Filter Basket, which incorporates FTA technology to immediately stabilize the DNA at room temperature. Nucleases are inactivated and the DNA is protected from UV and environmental damage. The immobilized DNA is entrapped in the fibers of the matrix and can either be purified immediately or stored at room temperature for more than 4 weeks. The filter is washed with two reagents to remove contaminants that would inhibit PCR. The DNA is then eluted from the filter by heating and collected by centrifugation.

Features and Benefits

- Simple, single tube protocol. Eliminates need for organic solvents, liquid nitrogen and time-consuming precipitation steps
- Fast purification of DNA. Purify DNA in less than 30 minutes for quick sample screening. Up to 50 amplifications from only 10 mg of plant material
- PCR-ready double-stranded DNA. Reliable amplification of DNA for a wide range of applications including cultivar screening and ID of genetically modified plants
- FTA technology protects DNA from degradation. Enables room temperature storage for weeks

GenSpin Plant Kit Contents

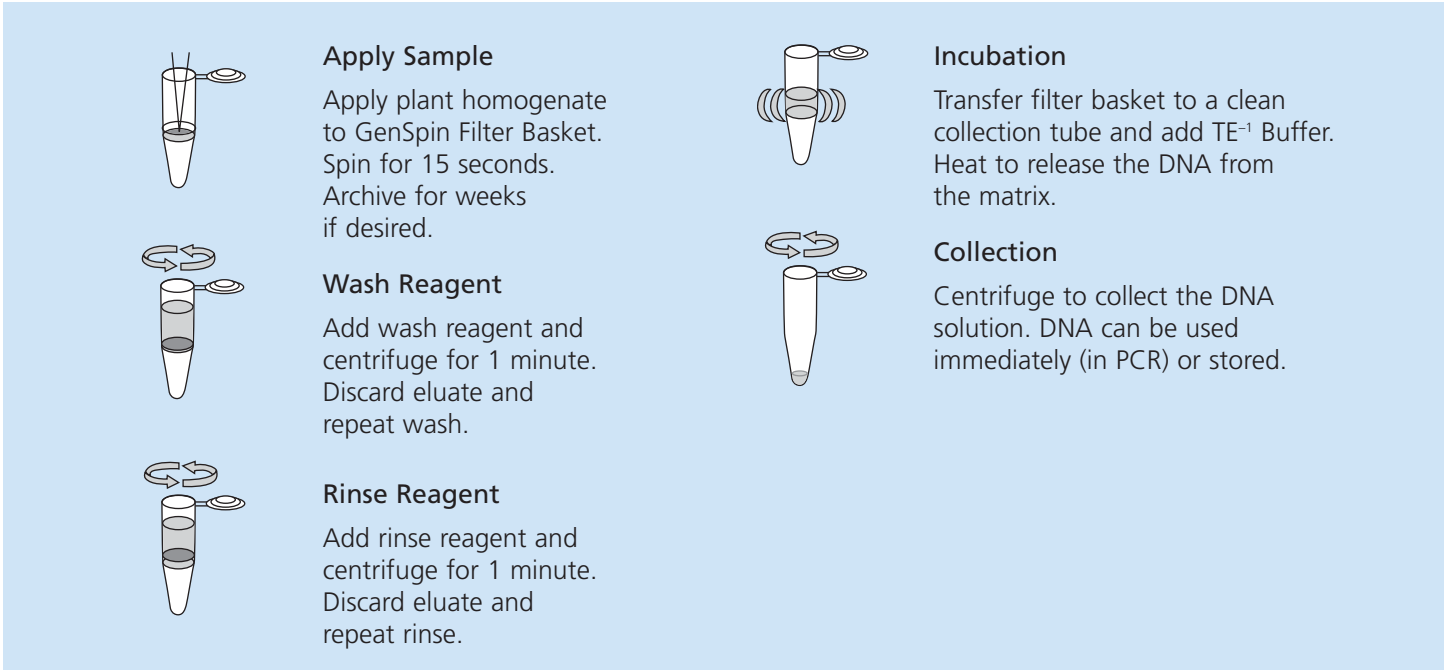
Quantity	Item
50	GenSpin Purification Tube with Filter Basket
50	GenSpin Collection Tube
1 bottle	Homogenization Buffer 25 mL
1 bottle	Wash Reagent 60 mL
1 bottle	Rinse Reagent 60 mL
1	Instruction Booklet

Ordering Information

GenSpin Plant Kits		
Catalog Number	**Description**	**Size**
WB120046	GenSpin Plant Kit	50 Purifications
SWB120046	GenSpin Plant Sample Kit	5 Purifications

GenSpin Plant DNA Purification Kit Performance Characteristics

Fig. 1 Overview of Protocol



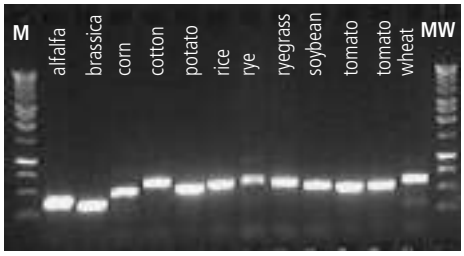


Fig. 2 Amplification of GenSpin Plant Purified DNA with Universal Primers for a Variety of Plant Species.

5 µL of GenSpin Plant DNA used per 25 µL PCR reaction for amplification of a noncoding chloroplast region trnL (UAA) exon.

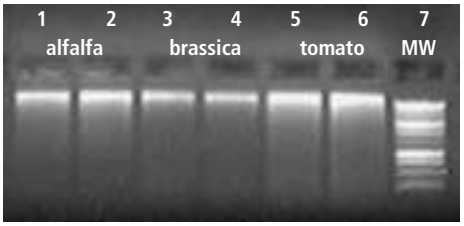


Fig. 3 GenSpin Plant Purified DNA.

Genomic DNA purified using GenSpin Plant Kit from 3 plant species. DNA from duplicate purifications were run on a 0.8% agarose gel.

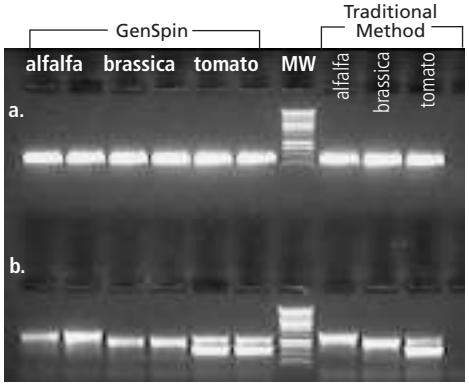


Fig. 4 Comparison of DNA Amplification Using DNA from GenSpin and a Traditional Extraction Method.

a. 18S rDNA PCR from three plant species, a 500 bp fragment is amplified

b. Rubisco activase (Rca) PCR from three plant species, fragments of 0.7–1.5 kb are amplified

Duplicate GenSpin purifications were run for each species. Results for GenSpin DNA are shown on the left and manually purified DNA shown on the right.

GenSpin Plant DNA Purification Kit Performance Characteristics continued

Table 1. Plant Species Typical DNA yields from 10 mg of young leaf tissue

Plant Species	Double Stranded DNA Yield (ng)
Alfalfa	800
Arabidopsis thaliana	110
Barley*	670
Brassica sp.	800
Corn*	120
Cotton	450
Potato	2200
Rice	120
Ryegrass	340
Soybean*	500
Spinach	340
Tobacco	1100
Tomato	1800
Wheat*	710

* Extraction of these plant species requires the addition of DTT to Homogenization Buffer. DNA yields can vary depending on plant species, tissue age and growing conditions. Double-stranded DNA was quantified using PicoGreen® Reagent.

Table 2. Comparison of GenSpin Plant and a common manual DNA isolation method

	GenSpin Plant	Manual Method*
Extraction Time	25 minutes	90 minutes*
Homogenization	Room Temperature	Liquid Nitrogen
Precipitation/Resuspension	Not Required	Required
All Reagents Aqueous	Yes	No
Archiving Capability	Yes	No
PCR of Low-Copy Loci	Yes	Yes
Double-Stranded DNA	Yes	Yes
gDNA Isolation from Other Cell Types (bacteria, blood)	Yes	No
Pathogen Inactivation	Yes	No

* Manual method (Dellaporta et. al. 1983), does not include time required for full resuspension after DNA precipitation.

Reference: Dellaporta et. al. (1983) A plant DNA Minipreparation. *Plant Molecular Biology Reporter* 1:19-21.