SYNERGY™ Plant DNA Extraction Kit

Product No. SYNP 02-100-01

The SYNERGY™ Plant DNA Extraction Kit utilizes a proprietary method to rapidly isolate high-quality DNA from plant tissue samples. SYNERGY™'s unique bead beating chemistry and centrifugation procedures replace extensive CTAB DNA isolation protocols using phenol and chloroform extraction. Each SYNERGY™ Homogenization Tube contains a grinding matrix that acts to liberate DNA and capture contaminants from the sample that could be detrimental to downstream manipulations of DNA.

Plant samples (50 mg) and Plant Homogenization Buffer are placed in the 2 ml Homogenization Tubes and disrupted with a high velocity bead beater (e.g., HT Mini™ or HT 6™). The cell debris and PCR inhibitors bind to the grinding matrix and are then removed by centrifugation, leaving the liberated DNA in the supernatant. DNA can be directly used for standard PCR or downstream applications. NOTE: Plant samples containing high levels of phenolic compounds and polysaccharides can be further purified by simple alcohol precipitation or by capturing DNA on a silica spin column and then eluting (SYNERGY™ 2.0). The entire process, including additional purification steps, takes approximately 45 minutes.

SYNERGY™ Plant DNA Extraction Kit contains:
100 Homogenization Tubes with grinding matrix
60 ml Plant Homogenization Buffer
600 µl RNase A Solution
Instructions

Additional Materials Required:
High Velocity Bead Beater
Microcentrifuge
Microfuge Tubes
Isopropanol
Vortexer
Incubator
70% Ethanol
Molecular Biology Grade Water or TE Buffer (pH 8) if storage of samples is required

Storage:
RNase A Solution should be stored at -20°C*, while Plant Homogenization Buffer and all other components should be stored at room temperature.*

Related Products	Format	Product No.
SYNERGY™ 2.0 Plant DNA Extraction Kit (includes spin columns)	100 Preps	SYNP 02-100-02
SYNERGY™ 96 Well Plant DNA Extraction Kit	192 Preps	SYNP 02-96-03
HT Mini™	115 V/230 V	BM-D1030 /BM-D1030E-230V
HT 6™	115 V/230 V	BM-D1036 /BM-D1036E

This product is made for research purposes only, not for clinical use. Please follow safety and institutional guidelines when using this product. **WARNING: Harmful if dust is inhaled. Buffer may cause irritation when in contact with skin and if swallowed.**

Protocol
SYNERGY™ Plant DNA Extraction Kit

Materials

- Plant Homogenization Buffer
- Homogenization Tubes
- RNase A Solution
- Microfuge Tubes
- Isopropanol (2-propanol)
- 70% Ethanol (Ethyl alcohol)
- Molecular Biology Grade Water or TE buffer (pH 8)

Protocol

1. Add up to 50 mg of plant tissue (approximately 5 leaf punches) and 500 µl of Plant Homogenization Buffer to the 2 ml Homogenization Tubes.

2. Place the Homogenization Tubes into the bead beater and homogenize the sample at the highest speed for 1 minute. (If the plant sample is not completely homogenized, repeat the process, as the sample can occasionally press against the tube wall and avoid homogenization. When adequately processed, the tube will lack foam.)

3. Centrifuge the Homogenization Tubes at 15,000 x g for 5 minutes to pellet the debris, grinding matrix and contaminants. ***NOTE:*** The grinding matrix has an adsorption capacity for contaminants. For optimal results, the amount of starting plant tissue for some species should be reduced if the supernatant is not clear after centrifugation.

4. Transfer the clear supernatant into a clean Microfuge Tube.

5. To obtain RNA-free DNA, add 5 µl of RNase A Solution to the supernatant. Vortex for 5 seconds. Incubate at 37°C for 15 minutes.

6. Add 7/10 volume of isopropanol. Vortex for 5 seconds. Incubate at -20°C for 15 minutes.

7. Centrifuge the tube at 10,000 x g for 5 minutes to pellet the DNA. Decant the supernatant without disrupting the pellet.

8. Wash the pellet with 500 µl of ice cold 70% ethanol. Decant the liquid, then wash the pellet again with 500 µl of ice cold 70% ethanol. Decant the liquid and remove residual liquid.

9. Dissolve the DNA in Molecular Biology Grade water or TE buffer (if storing) and use for PCR or other applications. ***NOTE:*** Pellets can be difficult to resuspend.

10. Store at -80°C if storage of samples is required.

If you have questions about this product, please contact OPS Diagnostics:

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