SYNERGY™ 2.0 Plant DNA Extraction Kit

Product No. SYNP 02-100-02

The SYNERGY™ 2.0 Plant DNA Extraction Kit utilizes a proprietary method to rapidly isolate high-quality DNA from plant tissue samples. SYNERGY™'s unique bead beating chemistry replaces laborious CTAB DNA isolation procedures requiring chloroform extraction, as well as the lengthy protocols associated with other spin column-based kits. Each Homogenization Tube contains a grinding matrix that acts in conjunction with the Plant Homogenization Buffer to liberate DNA and capture contaminants from the sample that could be detrimental to downstream manipulations of DNA. Experimental data shows that the SYNERGY™ 2.0 Plant DNA Extraction Kit yields more DNA of equal or better purity compared to other commercial kits and traditional CTAB protocols.

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. While DNA can be directly used for standard PCR or downstream applications, 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. The entire process, including additional purification steps, takes approximately 45 minutes.

SYNERGY™ 2.0 Plant DNA Extraction Kit contains:
100 Homogenization Tubes with grinding matrix
60 ml Plant Homogenization Buffer
600 µl RNase A Solution
100 Silica Spin Columns
Instructions

Additional Materials Required:
High Velocity Bead Beater
Microcentrifuge
Microfuge Tubes
Vortexer
Incubator
Isopropanol
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™ 96 Well 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
HT 24™	120 V/230 V	BM-D2400/ BM-D2400E

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™ 2.0 Plant DNA Extraction Kit

Materials

- Plant Homogenization Buffer
- Homogenization Tubes
- RNase A Solution
- Silica Spin Columns
- 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 and 500 µl of Plant Homogenization Buffer to the 2 ml Homogenization Tube.

2. Place the Homogenization Tube into a 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 Tube at 15,000 x *g* for 5 minutes to pellet the debris, grinding matrix and contaminants.

4. Transfer the clear supernatant (up to 500 µl) into a clean Microfuge Tube.

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

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

7. Transfer the solution to a Silica Spin Column. Centrifuge the Column at 8,000 x *g* for 1 minute to bind the DNA to the Column.

8. Wash the Column with 250 µl of ice cold 70% ethanol. Centrifuge the Column at 8,000 x *g* for 1 minute to pass through the wash solution.

9. Discard the flow through and repeat the wash.

10. Transfer the Column to a clean Microfuge Tube. Add between 50 and 100 µl of Molecular Biology Grade water or TE buffer (if storing) and centrifuge at 15,000 x *g* for 1 minute.

11. 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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