

Exgene™ Plant SV is specialized for extracting high-quality genomic DNA from various plant leaves

Experimental Conditions

Materials Required

- Exgene™ Plant SV mini (100 preps: 117-101 / 250 preps: 117-152)
- Grinder: TissueLyser II (85300, supplier Q) or another grinding devices with equivalent performance
- Liquid nitrogen (LN₂)
- Absolute ethanol (EtOH, C₂H₆O, CAS No.: 64-17-5, ≥99.0%)
- 1.5 ml or 2.0 ml microcentrifuge tube
- Vortex mixer
- Centrifuge (Max. speed 14,000 rpm or ≥10,000 x g)
- Pipette & sterile pipette tips
- Suitable protector (e.g., lab coat, disposable gloves, goggles, etc.)
- Water bath or heating block (65 °C)
- Ice

Sample Information

- Sample type: plant leaf



Garlic L.



Maize L.



Cucumber L.



Persimmon L.



Forsythia L.



Tomato L.



Pumpkin L.



Red giant mustard L.



Jujube L.



Lettuce L.

- Sampling: after collecting fresh leaves, put them in a bag and seal it.
- How to store: store at -70 °C temperature in a deep freezer
- Grinding: TissueLyser II (85300, supplier Q) or another devices
- Extraction conditions
 - Sample amount: 100 mg
 - Elution volume: 50 µl

Protocol

Before Starting

- Before using for the first time, add absolute ethanol (ACS grade or better) into Buffer BD and Buffer CW as indicated on the bottle.
- Buffer PL may precipitate upon storage at cold ambient temperature. If so, dissolve it in 65 °C water bath.

Sample Preparation

1. Freeze the leaf samples using LN₂.
2. Grind the frozen samples using TissueLyser II (85300, supplier Q) or another equipment.
3. Measure the weight of 100 mg and transfer leaf samples to 1.5 or 2.0 ml microcentrifuge tube.
4. The next step is according to **Exgene™ Plant SV mini protocol**.

Exgene™ Plant SV mini Protocol

* For more details and methods, please refer to [the handbook of Exgene™ Plant SV](#).



Lysis

1. Add 400 µl Buffer PL and 4 µl of RNase A solution into the sample tube and vortex vigorously.
2. Incubate for 10–15 min at 65 °C and mix 2–3 times during incubation.



Filtration

3. Add 140 µl Buffer PD to the lysate. Vortex and incubate for 5 min on ice.
4. Transfer the mixture to EzSep™ Filter and centrifuge at 10,000 x g for 2 min.



Binding

5. Transfer 450 µl of the pass-through to a new 1.5 ml microcentrifuge tube.
6. Add 1.5 volumes of Buffer BD and Mix immediately.
7. Transfer 700 µl of the mixture to Column Type G and centrifuge at 10,000 x g for 30 sec.
8. Transfer the all of remaining mixture to Column Type G and centrifuge at 10,000 x g for 30 sec.



Washing

9. Add 700 µl Buffer CW to Column Type G and centrifuge at 10,000 x g for 30 sec.
10. Add 300 µl Buffer CW to Column Type G and centrifuge at 10,000 x g for 2 min.
11. Transfer Column Type G to a new 1.5 ml microcentrifuge tube.



Elution

12. Add 50 µl Buffer AE to Column Type G. Incubate for 5 min at RT and centrifuge at 10,000 x g for 1 min.

Table 1. Brief Protocol of GeneAll® Exgene™ Plant SV mini kit for gDNA purification from various plant samples

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Result

#	Sample	Conc. (ng/μl)	Yield (μg)	A _{260/280}	A _{260/230}
1	Garlic L.	273.7	13.69	1.85	2.55
2	Maize L.	90.7	4.54	1.79	2.91
3	Cucumber L.	132.8	6.64	1.85	2.63
4	Persimmon L.	388.1	19.40	1.86	2.18
5	Forsythia L.	142.4	7.12	1.82	2.22
6	Tomato L.	175.0	8.75	1.84	2.30
7	Pumpkin L.	202.7	10.14	1.80	2.19
8	Red giant mustard L.	181.5	9.07	1.83	2.55
9	Jujube L.	412.2	20.61	1.87	2.09
10	Lettuce L.	272.7	13.64	1.84	2.28

Table 2. The concentration, yield and purity (mean) of gDNA extracted from 100 mg of various leaf samples.

※ Absorbance measurement instrument: NanoDrop™ 2000/2000c (ND-2000, supplier T)

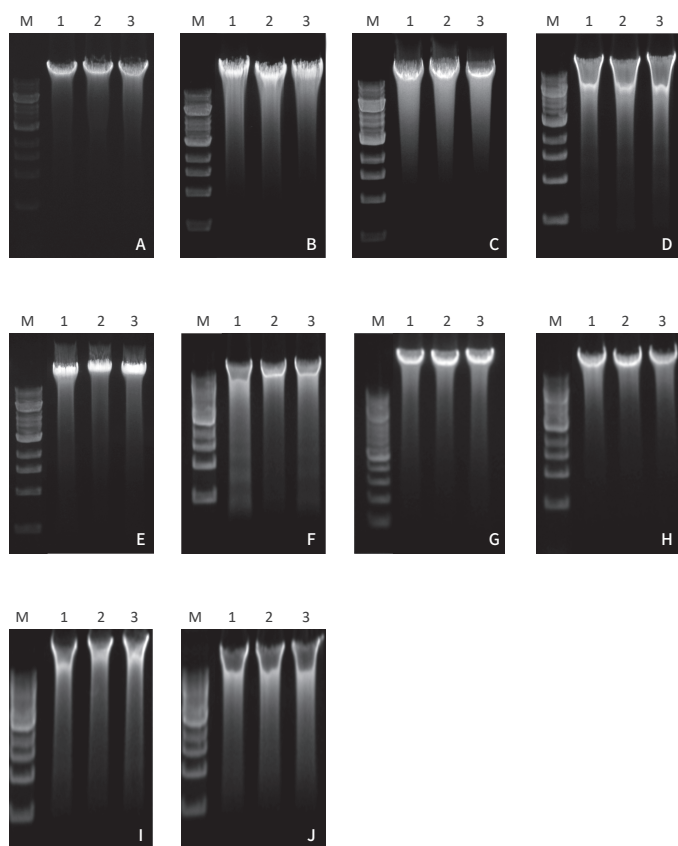


Figure 1. The results of electrophoresis of gDNA from 100 mg of various plant leaf samples.

M: GENESTA™ 1 kb DNA Ladder with 5X loading dye (GA-100, GeneAll®, 1 μl loading)

A: garlic leaf, B: maize leaf, C: cucumber leaf, D: persimmon leaf, E: forsythia leaf, F: tomato leaf, G: pumpkin leaf, H: red giant mustard leaf, I: jujube leaf, J: lettuce leaf

※ Electrophoresis conditions: 1.0% agarose gel, 150 V, 20 min, 5 μl loading