

Product Profile

GeneAll® Plant DNA Extraction Solutions

Seeding Innovation Today, Harvesting the Future of Crop Genomics with GeneAll® Plant DNA Extraction Solutions

Ordering information

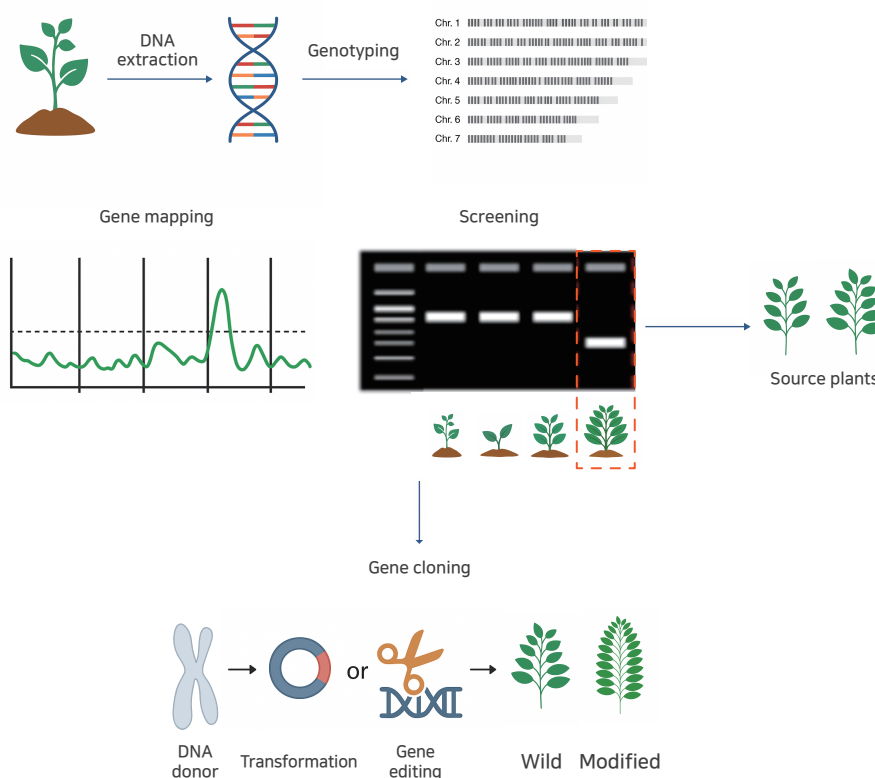
- **Exgene™ Plant SV**
117-101: mini, 100 prep
117-152: mini, 250 prep
117-226: Midi, 26 prep
117-201: Midi, 100 prep
117-310: MAXI, 10 prep
117-326: MAXI, 26 prep
- **AlIEx® Plant DNA**
954-096: Plate Cartridge, 96T
954-048: Single Cartridge, 48T
- **AlIEx® Mini Plant DNA**
979-048: Single Cartridge, 48T

Introduction

As the world faces growing challenges from climate change and the need for more resilient and productive crops, crop translational genomics is emerging as a powerful engine behind modern plant breeding.

Whether it's identifying genes linked to drought tolerance, mapping disease resistance traits, or assembling entire pangenomes, the journey always begins with one essential step: extracting high-quality genomic DNA.

From the lab bench to the field, reliable DNA extraction from diverse plant tissues lays the foundation for advanced studies like genotype-to-phenotype associations, QTL mapping, GWAS, and beyond.



GeneAll® Biotechnology offers three robust extraction solutions optimized for diverse plant materials:

- Exgene™ Plant SV mini (Manual)
- AlIEx® Plant DNA (Automated)
- AlIEx® Mini Plant DNA (Automated)

Each kit is optimized to deliver high-yield, inhibitor-free DNA suitable for downstream applications such as PCR, qPCR, sequencing, and molecular marker analysis.

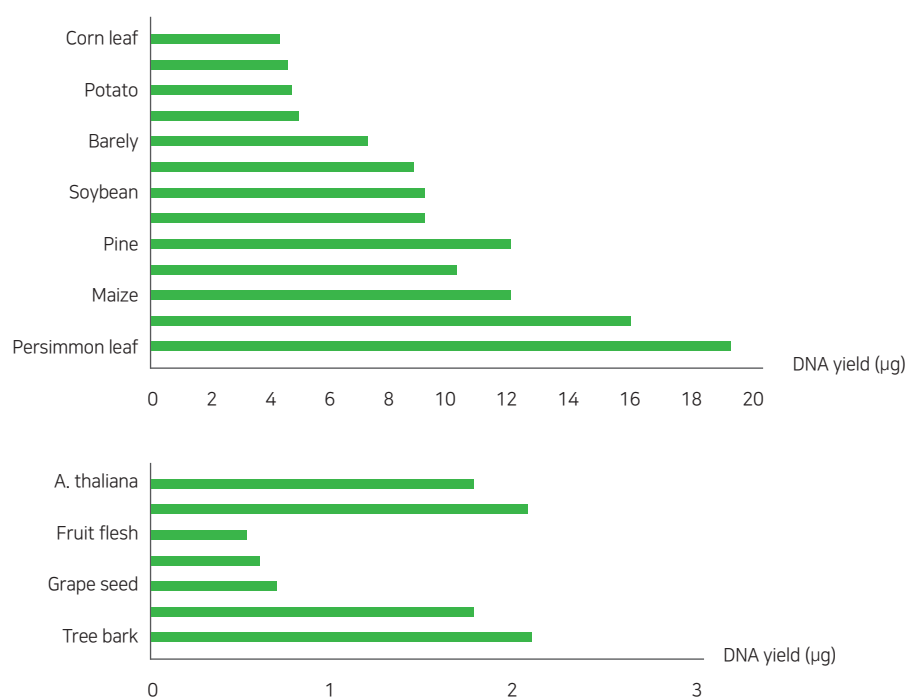
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GeneAll® Plant DNA Extraction Solutions

Exgene™ Plant SV (Manual)

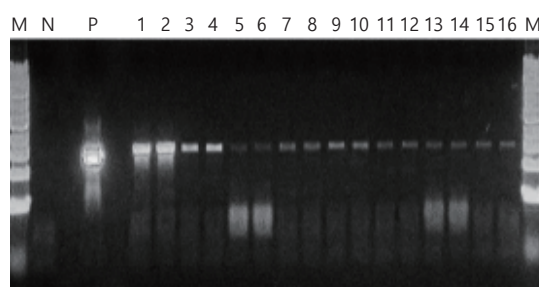
- Spin-column
- Easy clearance of lysate with EzSep™ Filtler
- Recovery of intact DNA
- No organic extraction or ethanol precipitation

From Roots to Leaves



DNA was successfully extracted using Exgene Plant SV mini from tough samples including pine, maize, tobacco, and persimmon leaf — known for their high polyphenol or lignin content.

Beyond Fresh Tissue



Genomic DNA was extracted from roasted tea products—including barley tea, corn tea, corn silk tea, and Cassia seed tea—using the Exgene™ Plant SV mini kit. PCR amplification using *rbcL* primers was successful across all samples, including both mechanically homogenized and non-homogenized forms, as confirmed by clear bands on agarose gel. It demonstrates that even heat-processed, commercially available plant teas can yield DNA of sufficient quality for downstream molecular applications.

M: 1 kb DNA ladder

N: Negative control

P: Positive control (strawberry leaf)

1-2, 9-10: Barley tea

3-4, 11-12: Corn tea

5-6, 13-14: Corn silk tea

7-8, 15-16: Cassia seed tea

* The later-numbered lanes are homogenized samples.

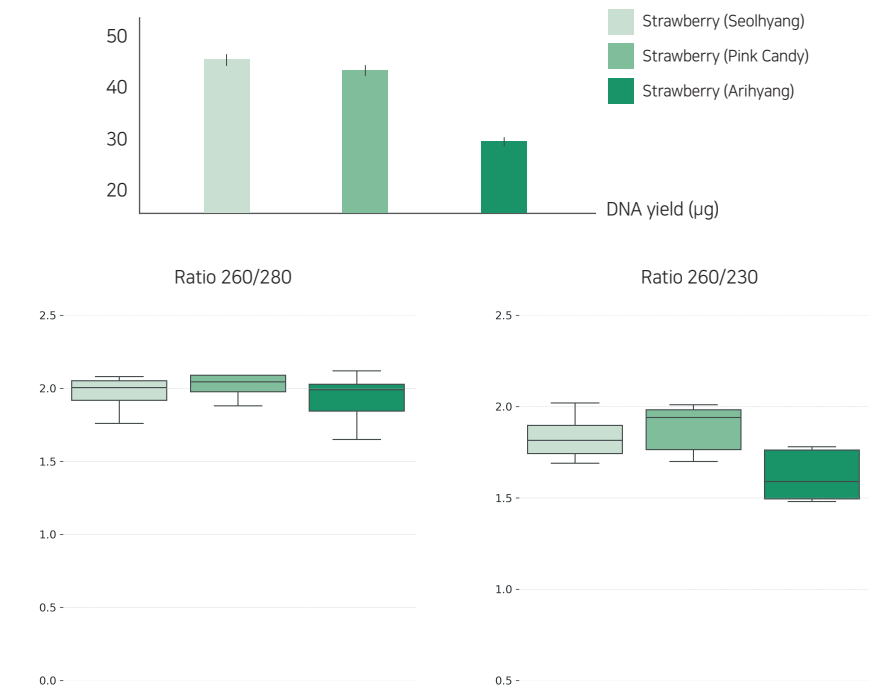
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GeneAll® Plant DNA Extraction Solutions

AlIEx® Plant DNA
(Automated)

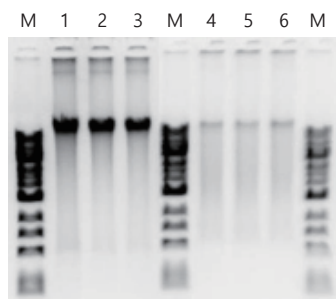
- Magnetic-bead transfer
- High and low-throughput options available with both plate cartridge and tube cartridge
- Extraction of high-quality DNA from the toughest sample types

High Purity, Even from Polyphenol-Rich Strawberry Leaves



Despite the known difficulty of extracting DNA from strawberry leaves due to high levels of polyphenols and polysaccharides, all three cultivars—Seolhyang, Pink Candy, and Arihyang—yielded DNA using the AlIEx® Plant DNA Kit in conjunction with AlIEx® 64 with consistent A_{260}/A_{280} ratios near 1.8 and A_{260}/A_{230} ratios generally above 1.5.

Dried But Not Defeated: Reliable DNA from Hard Leaf Samples



Dried leaves are tough samples for DNA extraction due to tissue hardening, DNA degradation, and interference from polyphenols. However, high-quality DNA was successfully extracted from dried leaves using the AlIEx® Plant DNA Kit in conjunction with AlIEx® 64 and clearly visualized, proving its suitability for downstream applications.

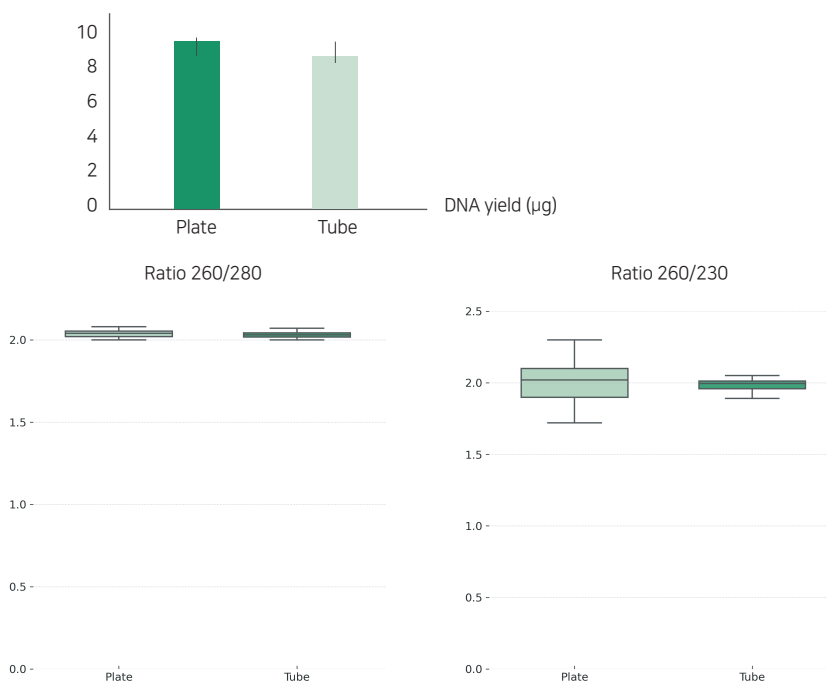
M: 1 kb DNA ladder
1-3: Dried Ricinus communis leaf
4-6: Dried perilla leaf

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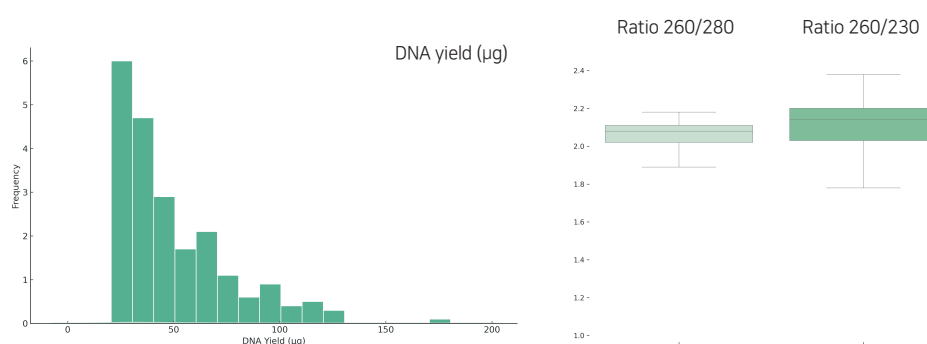
GeneAll® Plant DNA Extraction Solutions

AllEx® Plant DNA
(Automated)

- Magnetic-bead transfer
- High and low-throughput options available with both plate cartridge and tube cartridge
- Extraction of high-quality DNA from the toughest sample types

**Grains for Greatness:
Powerful Extraction, Even from Starch-Rich Sample**

Whether using the Plate Cartridge(16 samples) or Tube Cartridge(1~8 samples), the AllEx® Plant Kit paired with the AllEx® System consistently delivers high-purity DNA with excellent yields—even from challenging grain samples like rice, which are rich in starch and polysaccharides. A_{260}/A_{280} and A_{260}/A_{230} ratios typically exceed 1.9, with DNA yields sufficient for downstream applications such as PCR, qPCR, and sequencing.

Consistency in Every Leaf: Ginseng DNA Extraction at Scale

Over 200 Ginseng leaf samples were extracted using the AllEx® Plant DNA Kit paired with the AllEx® System, yielding consistently high-purity DNA ($A_{260}/A_{280} \approx 2.0$; $A_{260}/A_{230} > 1.8$) despite the fibrous and challenging nature of the tissue. The yield distribution showed strong reproducibility, with many samples exceeding 100 μg, demonstrating the kit's reliability for large-scale plant DNA extraction.

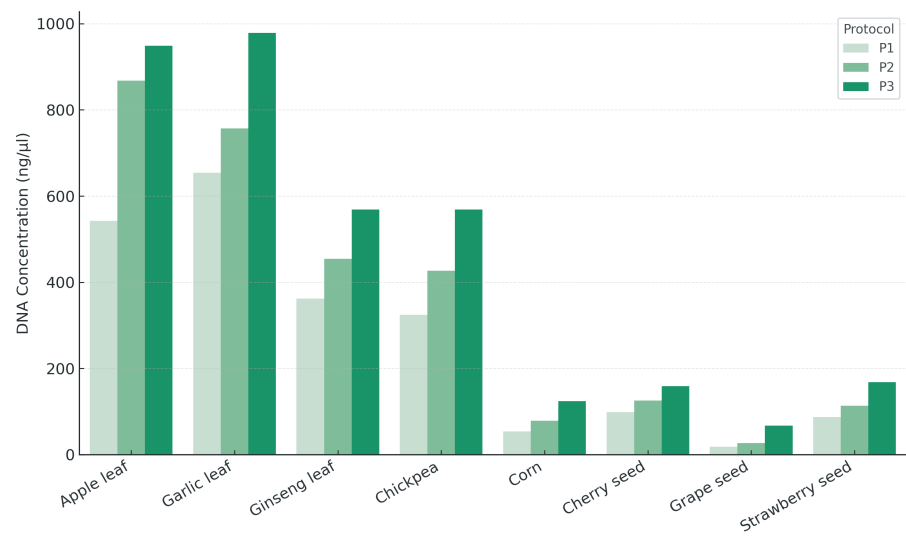
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GeneAll® Plant DNA Extraction Solutions

AlIEx® Mini Plant DNA
(Automated)

- Magnetic-bead transfer
- Convenient individual 8-strip tube
- Easy and fast operation
- Excellent DNA quality from difficult plant types

Flexible Plant DNA Extraction: Fast to High-Yield Solutions



The AlIEx® Plant DNA Kit in conjunction with AlIEx® Mini DNA Kit offers three selectable protocols—P1 (fast), P2 (standard), and P3 (advanced)—allowing users to tailor extraction based on sample difficulty and time constraints. As protocol level increases, so does extraction time, but with it comes higher DNA yield and quality, making the kit ideal for both quick preps and demanding samples.