Rooted in Purity, Shaping the Future of Plant with GeneAll® Plant RNA Extraction Solutions

Ordering information

· Ribospin™ Plant SV
307-150: mini, 50 prep

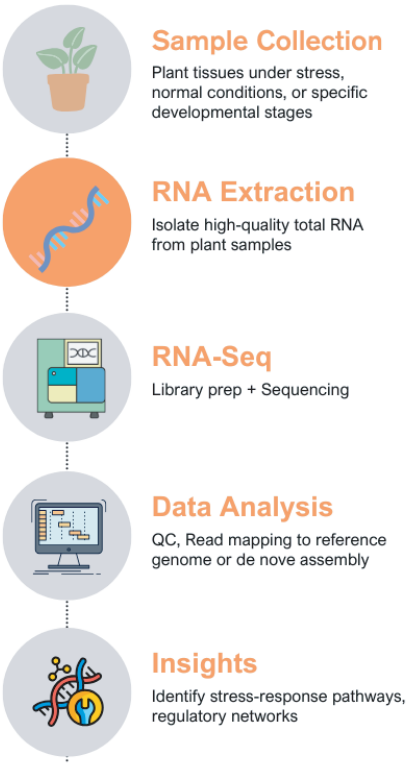
· AllEx® Plant Total RNA
952-096: Plate Cartridge, 96T
952-048: Single Cartridge, 48T

· AllEx® Mini Plant Total RNA
978-048: Single Cartridge, 48T

Introduction

Understanding how plants respond to environmental stress, regulate growth, or express specific traits requires analyzing their gene expression patterns.
In particular, transcriptomic analyses using RNA-Seq have become essential for understanding complex gene networks, identifying stress-response pathways, and uncovering key regulators of traits such as drought tolerance, disease resistance, and developmental timing.

To enable such advanced molecular studies, GeneAll provides reliable, high-quality RNA extraction solutions optimized for diverse plant tissues.
· Ribospin™ Plant SV mini (Manual)
· AllEx® Plant Total RNA (Automated)
· AllEx® Mini Plant Total RNA (Automated)



<Plant Transcriptomic Analysis Workflow>

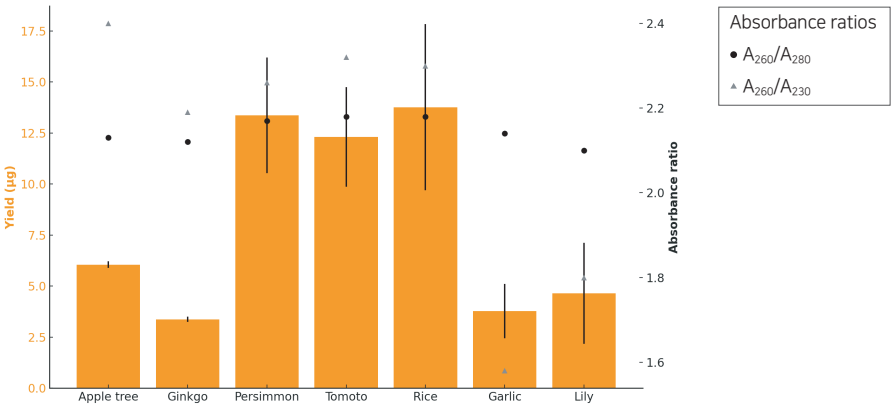
By ensuring RNA purity and integrity even from challenging samples, our technology lays a solid foundation for accurate gene expression analysis and successful downstream applications in plant research and biotechnology.

GeneAll® Plant RNA Extraction Solutions

Ribospin™ Plant SV (Manual)

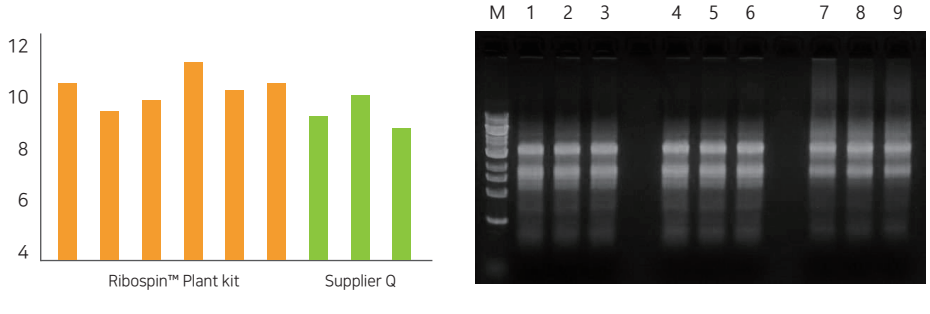
- Spin-column
- Easy clearance of lysate with EzPure™ Fitler
- DNase I included
- No organic extraction or ethanol precipitation

Reliable RNA Extraction from Diverse Plant Leaves



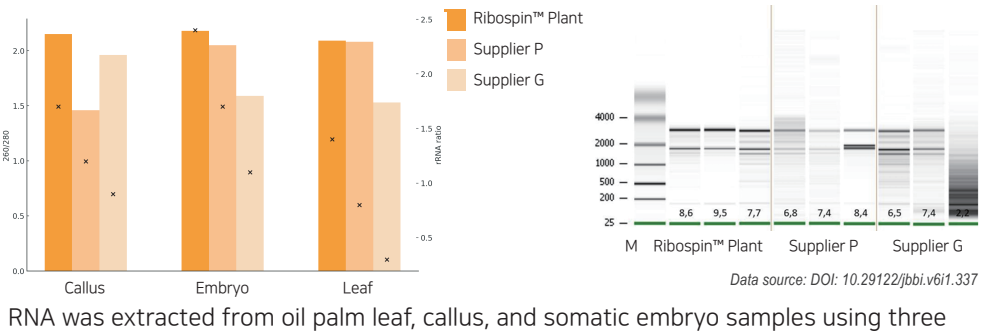
RNA was extracted from a wide range of leaf types using the Ribospin™ Plant kit, including difficult samples like garlic and lily known for high polysaccharide and phenolic content. Despite these challenges, the kit consistently delivered high-purity RNA with good across all tested samples.

Superior RNA Yield and Integrity



RNA was extracted from Pimpinella brachycarpa using Ribospin™ Plant kit and Supplier Q. Ribospin™ Plant showed the highest yield and stable purity (260/280 ≈ 2.20, 260/230 ≈ 2.40), outperforming Supplier Q. Agarose gel also confirmed intact RNA in Ribospin™ Plant kit with more clear rRNA bands. (Lane 1-6: Ribospin™ Plant kit, Lane 7-9: Supplier Q)

Comparison of RNA Quality from Oil Palm Tissues Using Three Commercial Kits



Data source: DOI: 10.29122/jbbi.v6i1.337

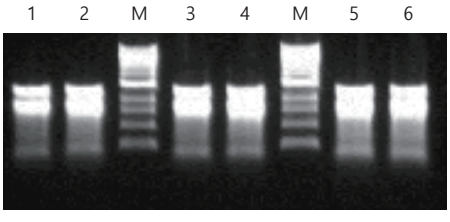
RNA was extracted from oil palm leaf, callus, and somatic embryo samples using three commercial kits: Ribospin™ Plant, Supplier P, and Supplier G. RNA quality was evaluated using the Agilent Bioanalyzer, with a focus on RIN (RNA Integrity Number) and rRNA ratio. Among the tested kits, Ribospin™ Plant yielded the highest RNA integrity, with RIN values of 9.5 (embryo), 8.6 (callus), and 7.7 (leaf). It also produced consistently high rRNA ratios (2.4, 1.7, and 1.4, respectively), indicating well-preserved and minimally degraded RNA.

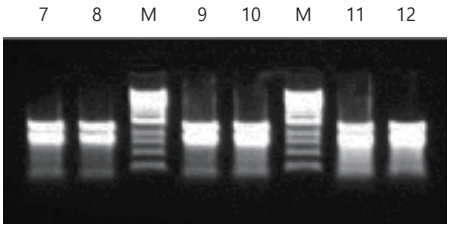
GeneAll® Plant RNA Extraction Solutions

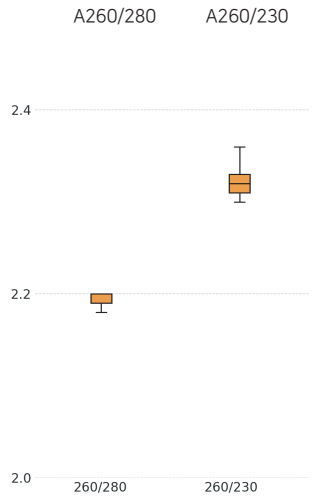
AllEx® Plant Total RNA (Automated)

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

Challenging Sweet Potato RNA Extraction: Overcoming Polysaccharide and Polyphenol Interference

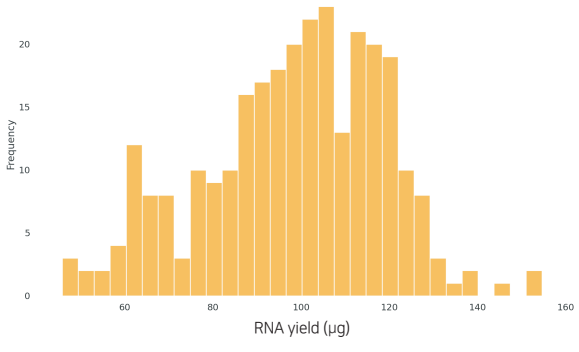


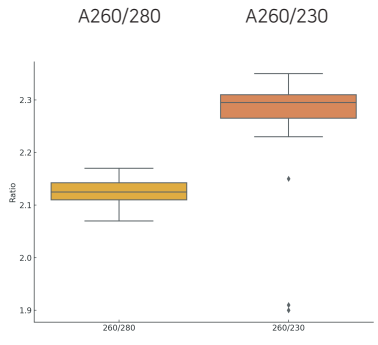




Total RNA was extracted using the AllEx® Plant Total RNA kit on AllEx®64 System from sweet potato leaves, a sample known for high levels of polysaccharides and polyphenols that complicate RNA isolation.
Despite these challenges, spectrophotometric analysis showed high purity, and gel electrophoresis confirmed good RNA integrity with clear rRNA bands. (M: 1 kb DNA Ladder, Lane 1-12: Sweet Potato tissue)

Extract with Confidence: ~ 600 Garlic Leaves, One Reliable Kit





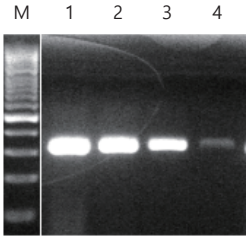
RNA was extracted from nearly 600 garlic leaf samples using the AllEx® Plant Total RNA kit paired with the AllEx®64 System to assess performance in high-throughput settings. The results showed consistently high purity, with 260/280 ratios between 2.10–2.18 and 260/230 ratios averaging above 2.3.
RNA yields were also uniform, centering around 100 µg.
These findings confirm the kit's reliability for large-scale RNA extraction with excellent purity and consistency.

GeneAll® Plant RNA Extraction Solutions

AllEx® Total Plant RNA (Automated)

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

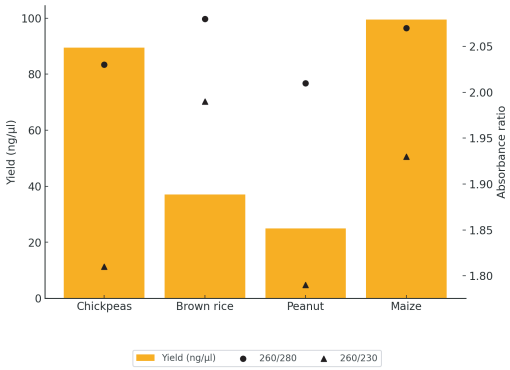
Total RNA Extraction for Sensitive Plant Virus Detection

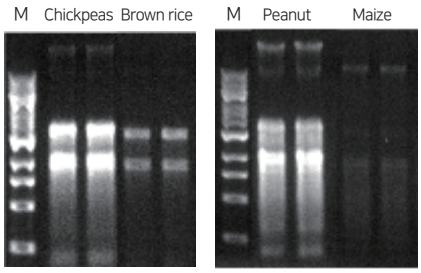


M: 100 bp DNA Ladder
Lane 1: RT-PCR using undiluted RNA (10^0) extracted from ASGV-infected apple leaf
Lane 2: RT-PCR using 10^{-1} diluted RNA
Lane 3: RT-PCR using 10^{-2} diluted RNA
Lane 4: RT-PCR using 10^{-3} diluted RNA

Total RNA extracted using the AllEx® Plant Total RNA kit on AllEx®64 System from ASGV-infected apple leaves enabled RT-PCR detection down to 10^{-3} dilution, co-purifying both host and viral RNA and demonstrating suitability for sensitive viral detection.

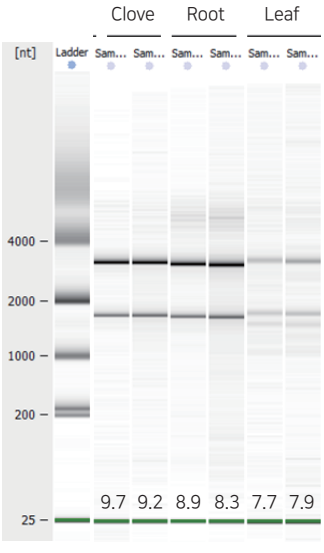
Essential Crops, Exceptional RNA Extraction





Total RNA was extracted from chickpeas, brown rice, peanut, and maize using the AllEx® Plant Total RNA kit paired with the AllEx®64 System — crops known for high levels of protein, starch, or phenolic compounds that can hinder RNA purity.
RNA yields ranged from 25–100 ng/µl, with 260/280 and 260/230 ratios near 2.0, indicating low contamination.
Electrophoresis showed clear rRNA bands in chickpeas and maize.

NGS-Grade RNA from Every Part of Garlic Tissue



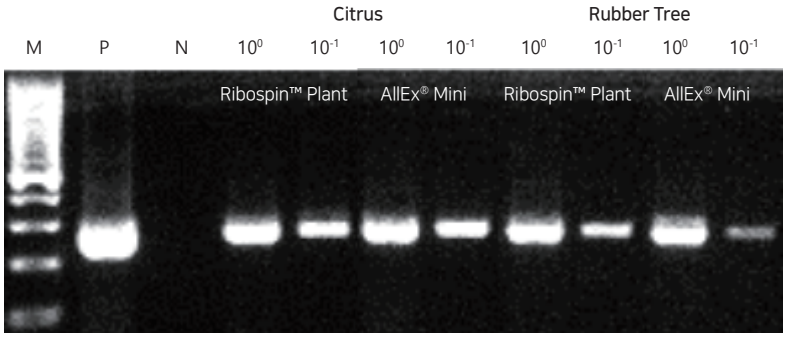
High-quality total RNA was successfully extracted from three different garlic tissues — root, clove, and leaf — using the AllEx® Plant Total RNA kit on AllEx® 64 System. All samples showed RIN values above 7.0, with multiple samples reaching 9.0 or higher, confirming NGS-grade RNA integrity across diverse plant parts.
This demonstrates the kit's suitability for transcriptome and sequencing workflows even in tissue types with varying levels of lignin, starch, or enzymatic content.

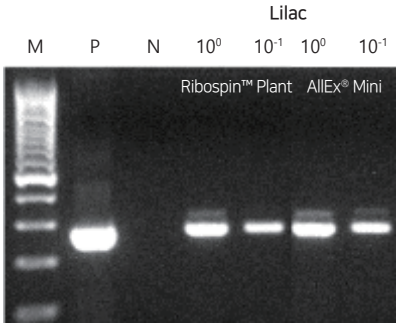
GeneAll® Plant RNA Extraction Solutions

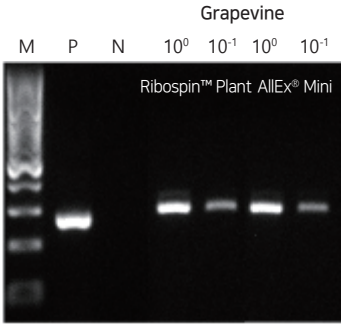
AllEx® Mini Plant Total RNA (Automated)

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

Comparable RNA Extraction from Manual and Automated RNA Extraction in Woody Tissues

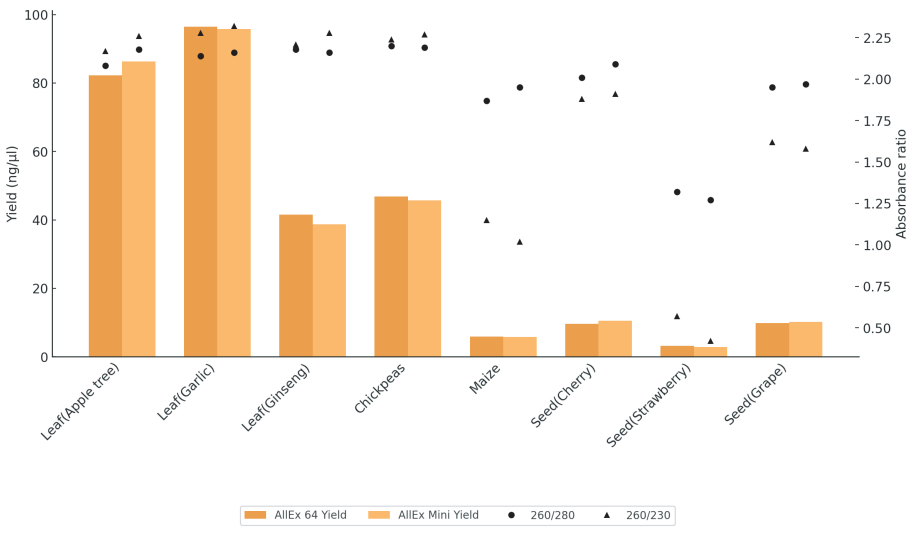






Total RNA was extracted from bark tissues of ASGV-infected citrus, rubber tree, lilac, and grapevine using Ribospin Plant kit(manual) and AllEx® Mini Plant Total RNA kit (automated) on AllEx® Mini System. RT-PCR showed comparable ASGV detection down to 10^{-1}, confirming equal sensitivity from both extraction methods.

Comparable RNA Extraction Performance across AllEx®64 and AllEx® Mini Systems



Both the high-throughput AllEx®64 and the low-throughput AllEx® Mini, using the AllEx® Plant Total RNA kit and AllEx® Mini Plant Total RNA kit respectively, yielded comparable RNA quality and quantity from diverse plant samples, including leaf and seed tissues.