

Plant microRNA Purification Kit

Norgen's Plant microRNA Purification Kit provides a rapid method for the isolation and purification of small RNA molecules (< 200 nt) from cultured plant cells or plant tissues. These small RNAs include regulatory RNA molecules such as microRNA (miRNA) and short interfering RNA (siRNA), as well as tRNA and 5S rRNA. Small RNA molecules are often studied due to their ability to regulate gene expression. miRNAs and siRNAs are typically 20-25 nucleotides long, and regulate gene expression by binding to mRNA molecules and affecting their stability or translation. The small RNA molecules isolated using Norgen's Plant microRNA Purification Kit can be used in



various downstream applications relating to gene regulation and functional analysis, including RT-PCR, miRNA sequencing, northern blotting and microarray analysis.

Kit Specifications			
Maximum Amount of Starting Material	50 µg	Size of RNA Purified	< 200 nt
Maximum Column Loading Volume	650 µL	Amount of Starting Material:	100 mg
Minimum Elution Volume	20 µL	Plant Tissues	5 x 10 ⁶ cells
Time to Complete 10 Purifications	25 minutes		

Plant microRNA Purification Kit Benefits

Fast and easy	Fast and easy processing using a rapid spin column format
Inhibitor-free	No phenol or chloroform extractions
Isolate small RNA	Isolate all small RNA molecules (< 200 nt)
Minimal contamination	Minimal contamination from large RNA molecules and genomic DNA
Wide compatibility	High quality small RNA can be used in various downstream applications

Plant microRNA Purification Kit

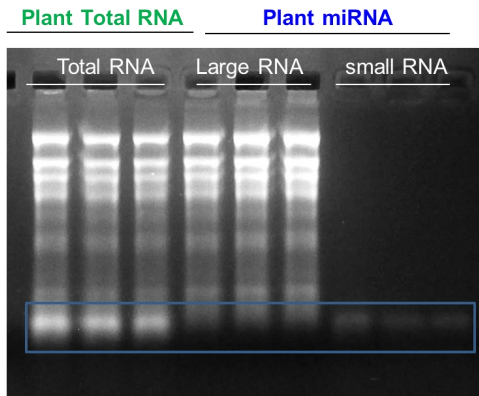


Figure 1. Fractionation of Large and Small RNA. Large RNA and small RNA were sequentially purified using Norgen's Plant miRNA Purification Kit from 50 mg of raspberry leaf tissue and the RNA profile was compared with the RNA isolated using Norgen's Plant/Fungi Total RNA Purification Kit (Cat. #25800). For visualization, 10 μ L of RNA from 50 μ L of RNA elution was loaded on 2% 1x MOPS agarose gel. Norgen's kit was able to isolate both the large and small RNA fractions, and the small RNA fraction does not contain any of the large RNA species.

Plant microRNA Purification Kit Contents

1. Lysis Buffer C
2. Wash Solution A
3. Elution Solution A
4. Large RNA Removal Column
5. microRNA Enrichment Column
6. Collection Tube
7. Elution tubes (1.7 mL)
8. Product Insert

Storage Conditions

All solutions should be kept tightly sealed and stored at room temperature. These reagents should remain stable for at least 1 year in their unopened containers.

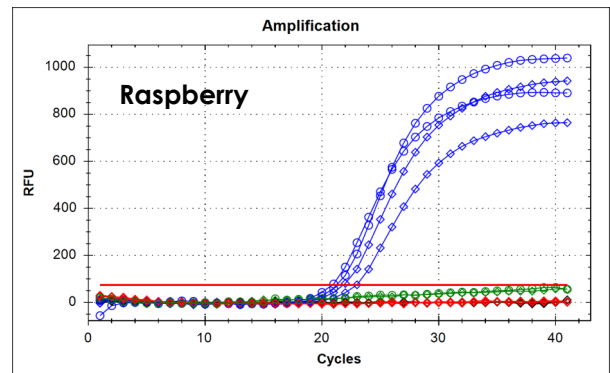


Figure 2. Isolation of Concentrated RNA that can be used in Sensitive Downstream Applications. Three different miRNA purification methods were compared for their ability to isolate and detect plant miRNA. miRNA was purified from grape using three miRNA purification kits according to the manufacturer's manual. Next, 3 μ L of the elution was directly used for cDNA generation and 3 μ L of cDNA was used for the CFX96 Touch™ Real-Time PCR Detection System (Bio-Rad) to detect the miRNA 159a. As it can be seen, only the miRNA purified using Norgen's kit (blue lines) was amplified, while the miRNA isolated using the other 2 kits failed to amplify (red and green lines). Both of the competitor's kits rely on phenol to isolate the miRNA, and therefore residual phenol is likely interfering with the amplification. Norgen's kit isolates high yields of good quality miRNA without the use of phenol. Blue: Norgen Plant miRNA, Red: Qiagen miRNeasy, Trizol: Green.

Customer-Supplied Reagents and Equipment

You must have the following in order to use the Plant microRNA Purification Kit:

- Benchtop microcentrifuge
- 96 - 100% ethanol
- RNase-free microcentrifuge tubes
- Liquid nitrogen
- Mortar and pestle

Shipping Conditions

The Plant microRNA Purification Kit is shipped at room temperature.

Cat #	Description	Quantity
54700	Plant microRNA Purification Kit	25 preps