

## Urine microRNA Purification Kit

Norgen's Urine microRNA Purification Kit provides a rapid method for the isolation and purification of small RNA molecules (< 200 nt) from urine samples. 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. Typically miRNAs are 20-25 nucleotides long, and regulate gene expression by binding to mRNA molecules and affecting their stability or translation. Several recent studies have shown that miRNA regulates cell growth and apoptosis. Furthermore, clinical and experimental analyses suggested that miRNAs may function as a novel class of oncogenes or tumor suppressor genes.



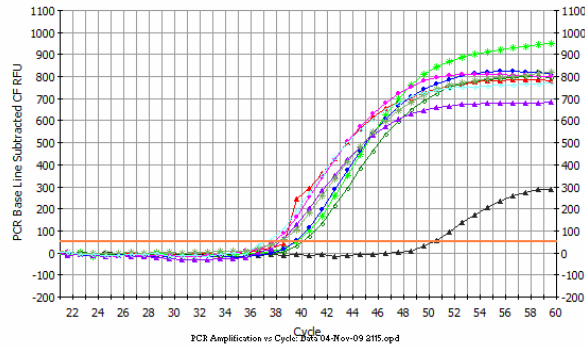
Purification is based on spin column chromatography using Norgen's proprietary resin as the separation matrix. Norgen's resin binds RNA in a manner that depends on ionic concentration. The small RNA molecules are preferentially purified from other cellular components such as ribosomal RNA without the use of phenol or chloroform. Preparation time for a single sample is less than 30 minutes. The small RNA molecules isolated using Norgen's Urine microRNA Purification Kit can be used in various downstream applications relating to gene regulation and functional analysis, including RT-PCR, northern blotting and microarray analysis.

Kit Specifications			
Minimum Urine Input	0.5 mL	Time to Complete Purification	< 30 minutes
Maximum Urine Input	3 mL	Size of RNA Purified	< 200 nt

### Urine microRNA Purification Kit Benefits

Fast and easy processing	Rapid spin-column format allows for the processing of multiple samples in under 30 minutes.
Versatile urine input volumes	Isolate microRNA from 0.5 mL to 3 mL of urine
No phenol:chloroform extractions	Norgen's Urine microRNA Purification Kit isolates RNA without the use of harmful chemicals such as phenol or chloroform.
Isolate all small RNA molecules	All small RNA species can be isolated including miRNA, siRNA, tRNA, and 5S rRNA.
Recovered RNA is suitable for downstream applications	Purified RNA is fully compatible with various downstream applications relating to gene regulation and functional analysis, including RT-PCR, northern blotting and microarray analysis.

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**Figure 1. Isolation and Detection of microRNA from Urine Samples.** Norgen’s Urine microRNA Purification Kit was used to isolate microRNA from 8 different 1.5 mL urine samples. The purified microRNA was then used as the template in an RT-qPCR reaction to detect the human miR-21 gene. Five microlitres of the isolated RNA was used as the template in the RT step, and 5 µL from the RT step was used in the qPCR reaction. As it can be seen, the qPCR was able to successfully detect and amplify the miR-21 gene in all cases, indicating the high quality of the isolated urine microRNA. The black line in the graph above corresponds to the No Template Control.

### Urine microRNA Purification Kit Contents

1. Stabilizer
2. Lysis Solution
3. Wash Solution
4. Elution Solution
5. Mini Spin Columns
6. Collection Tubes
7. Elution Tubes
8. Product Insert

### Customer-Supplied Reagents and Equipment

- Benchtop microcentrifuge
- 15 mL conical tubes
- 95 – 100% ethanol
- β-mercaptoethanol (optional)

### Shipping Conditions

The Urine microRNA Purification Kit is shipped at room temperature.

### Storage Conditions

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

Cat #	Description	Quantity
29000	Urine microRNA Purification Kit	25 preps