

## Urine Exosome RNA Isolation Kit

Norgen's Urine Exosome RNA Isolation Kit provides a rapid procedure for the isolation of exosomal RNA from urine samples. Exosomes are 40 - 100 nm membrane vesicles, which are secreted by most cell types. Exosomes can be found in saliva, blood, urine, amniotic fluid and malignant ascite fluids, among other biological fluids. Evidence has been accumulating recently that these vesicles act as cellular messengers, conveying information to distant cells and tissues within the body. The exosomes contain cell-specific proteins, lipids and RNAs, which are transported to other cells, where they can alter function and/or physiology. These exosomes may play a functional role in mediating adaptive immune responses to infectious agents and tumours, tissue repair, neural communication and transfer of pathogenic proteins. Recent work has demonstrated the presence of distinct subsets of microRNAs within exosomes which depend upon the tumour cell type from which they are secreted.

For this reason exosomal RNAs may serve as biomarkers for various diseases including cancer. As the RNA molecules encapsulated within exosomes are protected from degradation by RNases they can be efficiently recovered from biological fluids, such as urine. Norgen's Urine Exosome RNA Isolation Kit then makes exosomal RNA discoveries simple, rapid and reliable. Users can simultaneously concentrate and isolate high quality exosomal RNA, including microRNA, for use in sensitive downstream assays.

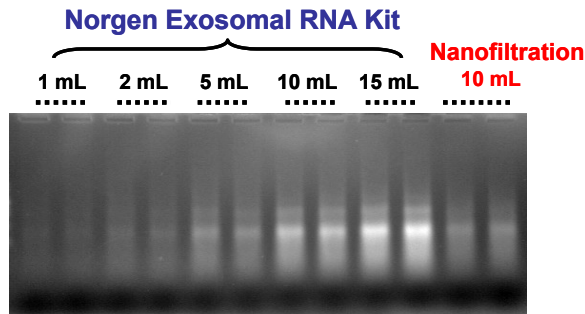


Kit Specifications			
Minimum Urine Input	1 mL	Time to Complete Purification	~ 50 minutes
Maximum Urine Input	10 mL	Size of RNA Purified	Small exosomal RNA species

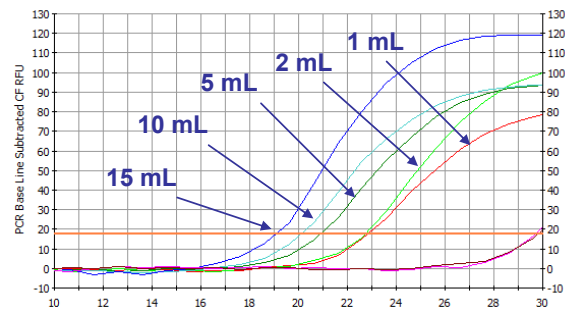
### Urine Exosome RNA Isolation Kit Benefits

Fast and easy processing	Rapid spin-column format allows for the processing of multiple samples in under 30 minutes.
Versatile urine input volumes	Isolate exosomal RNA from 1 mL to 10 mL of urine
No phenol:chloroform extractions	Norgen's Urine Exosomal RNA Isolation Kit isolates RNA without the use of harmful chemicals such as phenol or chloroform.
Recovered RNA is suitable for downstream applications	Purified RNA is fully compatible with various downstream applications including real time PCR, reverse transcription PCR, Northern blotting, RNase protection and primer extension, and expression array assays

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**Figure 1. Isolation of Urine Exosomal RNA from Different Urine Volumes.** Norgen's Urine Exosome RNA Isolation Kit was used to isolate urine exosomal RNA from different urine volumes ranging from 1 – 15 mL, and the yield of RNA obtained was compared to the conventional Nanofiltration method. Norgen's Urine Exosome RNA Isolation Kit procedure showed a linear increase in the RNA yield with an increase in urine volume processed. Furthermore, when isolating exosomal RNA from 10 mL of urine using Norgen's kit and the conventional Nanofiltration method, Norgen's Urine Exosome RNA Isolation Kit showed a higher yield.



**Figure 2. Detection of Urine Exosomal RNA Isolated from Different Urine Volumes.** Norgen's Urine Exosome RNA Isolation Kit was then used to isolate RNA from different urine volumes ranging from 1 – 15mL urine. The purified urine exosomal RNA was then used as the template in an RT-qPCR reaction to detect the human 5S gene. Three microlitres of the isolated RNA was used as the template in the RT step, and 3  $\mu$ L 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 5S gene from RNA isolated from different urine volumes, indicating the high quality of the isolated urine exosomal RNA.

### Urine Exosome RNA Purification Kit Contents

1. Slurry B1
2. Binding Buffer A
3. Lysis Buffer A
4. Wash Solution A
5. Elution Solution A
6. Mini Filter Spin Columns
7. Collection Tubes
8. Elution tubes (1.7 mL)
9. Product Insert

### Shipping Conditions

The Urine Exosome RNA Isolation Kit is shipped at room temperature.

### Customer-Supplied Reagents and Equipment

- Centrifuge with a swinging bucket rotor capable of 2500 RPM.
- Benchtop microcentrifuge
- 15 mL conical tubes
- 95 – 100% ethanol
- 67% isopropanol

### 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
47200	Urine Exosome RNA Isolation Kit	50 preps