

## Urine (Exfoliated Cell) RNA Purification Kit

Norgen's Urine (Exfoliated Cell) RNA Purification Kit is designed for the rapid isolation and purification of total RNA from exfoliated cells that have been shed into the urine from the urinary tract. RNA from exfoliated cells can be used as non-invasive tools for a number of research applications including biomarker studies for the diagnosis and monitoring of bladder, kidney, or other urinary tract cancers. Purification is based on spin column chromatography using Norgen's proprietary resin as the separation matrix. The kit preferentially purifies RNA from other cellular proteinaceous components, as well as from the contaminating species found in urine such as glucose and salts.



The Urine (Exfoliated Cell) RNA Purification Kit allows for the isolation of total RNA from exfoliated cells present in 1 to 50 mL of urine. The kit purifies all sizes of RNA, from large mRNA and ribosomal RNA down to microRNA (miRNA) and small interfering RNA (siRNA). Typical yields of DNA will vary depending on the cell density of the urine sample, which is affected by a number of factors including health, diet and sex of the individual donating the urine. The purified urine RNA is of the highest integrity, and can be used in a number of downstream applications.

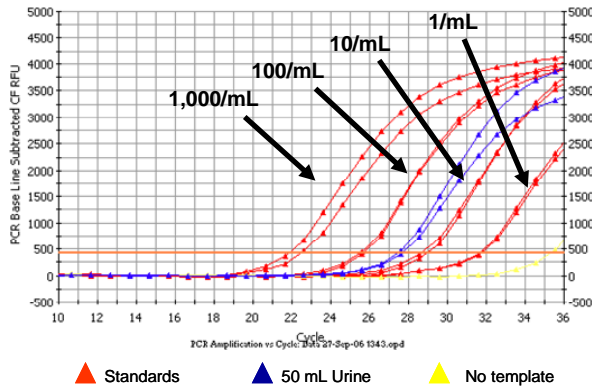
Kit Specifications			
Maximum Urine Input	50 mL	Maximum Input of Exfoliated Cells	1 x 10 <sup>6</sup>
Minimum Urine Input	1 mL	Time to Complete 10 Purifications	20 minutes
Size of RNA Purified	All sizes, including small RNA (<200 nt)	Average Yield*	~ 1 µg RNA per 1 x 10 <sup>5</sup> cells

\* Yield varies due to the cell density of the sample

### Urine (Exfoliated Cell) RNA Purification Kit Benefits

Fast processing	Rapid spin-column format allows for the processing of multiple samples in 20 minutes.
Isolate diversity of RNA species	All RNA species can be isolated, from large mRNA and ribosomal RNA down to microRNA and small interfering RNA.
Isolate RNA from small samples	RNA can be isolated and detected from as little as 100 exfoliated cells.
No phenol:chloroform extractions	Total exfoliated cell RNA is isolated without the use of harmful chemicals such as phenol or chloroform.
Recovered RNA is suitable for downstream applications	Purified RNA is fully compatible with real time PCR, reverse transcription PCR, Northern blotting, RNase protection and primer extension, and expression array assays.

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**Figure 1. Isolation and Detection of RNA from the Exfoliated Cells in 50 mL of Urine**

RNA was isolated from the exfoliated cells in a 50 mL urine sample obtained from a healthy male using Norgen's Urine (Exfoliated Cell) RNA Purification Kit. The isolated RNA was then subjected to reverse transcription and real-time PCR using primers to detect the ribosomal S14 gene. The red lines in the PCR baseline graph above correspond to RNA standards, while the blue lines correspond to the successful PCR results when RNA isolated from the exfoliated cells in 50 mL of urine was used as the template.

### Shipping Conditions

The Urine (Exfoliated Cell) RNA Purification Kit is shipped at room temperature.

### Urine (Exfoliated Cell) RNA Purification Kit Contents

1. Lysis Solution
2. Wash Solution
3. Elution Buffer
4. Micro Spin Columns
5. Collection Tubes
6. Elution Tubes
7. Product Insert

### Customer-Supplied Reagents and Equipment

- Benchtop microcentrifuge
- 1.5 mL microcentrifuge tubes
- 96 - 100% ethanol
- $\beta$ -mercaptoethanol

### Storage Conditions

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

Cat #	Description	Quantity
22500	Urine (Exfoliated Cell) RNA Purification Kit	20 preps