

## Urine Exfoliated Cell and Bacteria RNA Purification Kit

Norgen's Urine Exfoliated Cell and Bacteria RNA Purification Kit provides a rapid method for the isolation and purification of total RNA from exfoliated cells that have been shed into the urine from the urinary tract. The kit is also designed for the rapid preparation of bacterial RNA from urine samples. RNA biomarkers from exfoliated cells can be used as a non-invasive tool for a number of diagnostic and research applications including the diagnosis and monitoring of bladder, kidney, or other urinary-tract cancers. Bacterial RNA can be isolated from both human urine samples and urine samples from animals in order to study the levels and types of bacteria that are present, as well as to study the stage of



bacterial pathogenesis through the use of RNA biomarkers. The kit allows for the isolation of RNA from both Gram negative and Gram positive bacteria, including *E. coli*, *Proteus* spp., *Klebsiella* spp., *Enterobacter* spp., *Serratia* spp., *Pseudomonas* spp, *Clostridial* spp. and *Leptospirosis* spp., as well as *Chlamydia trachomatis* and *Neisseria gonorrhoeae*.

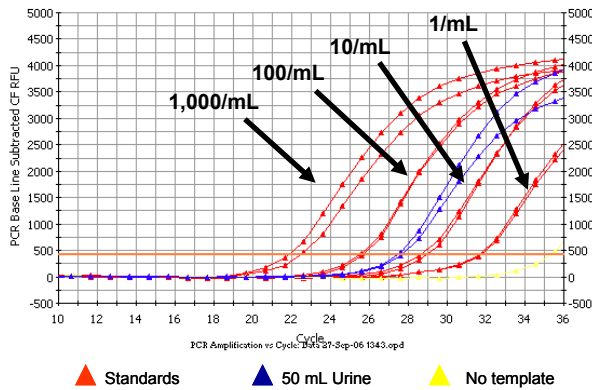
Kit Specifications			
Maximum Urine Input	50 mL	Maximum Input of Exfoliated Cells	1 x 10 <sup>6</sup>
Minimum Urine Input	1 mL	Time to Complete 10 Purifications	20-30 minutes
Size of RNA Purified	All sizes, including small RNA (<200 nt)	Average Yield*	~ 1 µg RNA per 1 x 10 <sup>5</sup> cells

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

### Urine Exfoliated Cell and Bacteria 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 and Bacteria RNA Purification Kit is shipped at room temperature.

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

1. Buffer SK
2. Wash Solution A
3. Elution Buffer E
4. Micro Spin Columns
5. Collection Tubes
6. Elution tubes (1.7 mL)
7. Product Insert

### Customer-Supplied Reagents and Equipment

- Benchtop microcentrifuge
- Swinging bucket centrifuge
- 96 – 100% ethanol
- b-mercaptoethanol
- 50 mL conical tubes
- Microcentrifuge tubes
- Lysozyme-containing TE Buffer:  
 ⇒ 3 mg/mL lysozyme in TE Buffer

### 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.

Cat #	Description	Quantity
22500	Urine Exfoliated Cell and Bacteria RNA Purification Kit	25 preps