

## Urine DNA Isolation Mini Kit (Slurry Format)

Norgen's Urine DNA Isolation Mini Kit (Slurry Format) provides a fast, reliable and simple procedure for isolating DNA from various amounts of urine ranging from 5 mL to 25 mL. DNA found in urine can be divided into 2 basic categories. The larger species (genomic-DNA) is generally greater than 1 kb in size, and appears to be derived mainly from cells shed into the urine. The second species is smaller, generally between 150 and 250 bp (apoptotic-DNA), and derives, at least in part, from the circulation. The second species is also considered as an RNA/DNA hybrid. Both types of DNA can be isolated reliably using this kit.



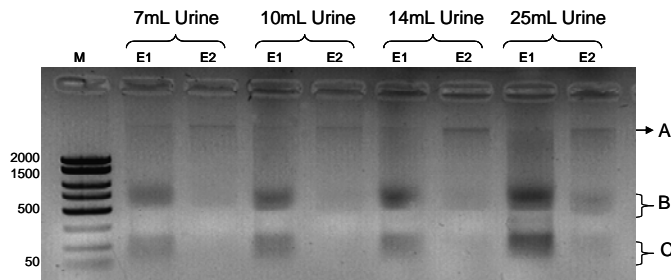
With Norgen's Urine DNA Isolation Mini Kit (Slurry Format), purification is based on using Norgen's proprietary resin as the separation matrix. Briefly, urine samples are mixed with Binding Buffer containing our separation matrix and are lysed using Proteinase K and Pronase. A Binding Buffer is then added to the lysate, and the slurry is then loaded onto a provided Mini Filter Spin Column. Under these conditions only the DNA will bind while the contaminating salts, metabolic wastes and proteins are removed to allow for the isolation of high quality, concentrated DNA. Typical yields of DNA isolated will vary depending on the input sample, with more concentrated samples tending to yield more DNA. Preparation time for a single sample is less than 30 minutes. The purified urine DNA is compatible with PCR, qPCR and Southern Blot analysis.

Kit Specifications			
Minimum Urine Input	5 mL	Time to Complete Purification	< 30 minutes
Maximum Urine Input	25 mL	Size of Urine DNA Purified	Large (>1kb) and small (150-250 bp)

### Urine DNA Isolation Mini Kit (Slurry Format) Benefits

Fast processing	Rapid spin-column format allows for the processing of multiple samples in under 30 minutes.
Isolation of both types of urine DNA	Isolate both high molecular weight DNA (greater than 1 kb in size; mostly cell associated) and the smaller DNA (150 - 250 bp; derived from the circulation) (Figure 1).
High quality DNA	Removal of highly concentrated salts, metabolic wastes and proteins provides high quality, concentrated DNA to be used in various downstream applications.
Recovered DNA is suitable for downstream applications	Purified DNA is fully compatible with PCR analysis, qPCR, DNA fingerprinting and Southern Blot analysis.

## Urine DNA Isolation Mini Kit (Slurry Format)



**Figure 1. Typical Agarose Gel Showing Total Urinary DNA Isolated from Different Urine Volumes**

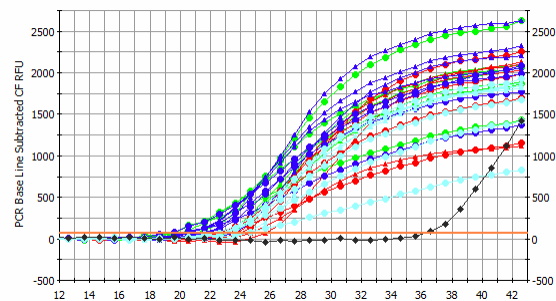
Total urinary DNA was isolated from 7 mL, 10 mL, 14 mL and 25 mL of urine using Norgen's Urine DNA Isolation Mini Kit (Slurry Format). The isolated DNA was eluted into two separate elutions of 150  $\mu$ L (E1) and 100  $\mu$ L (E2). The purified urine DNA was then loaded onto a 1.2% agarose gel. Each lane shows one tenth from each elution. It can be seen that the first elution contains mostly the free circulating DNA (B) and the DNA/RNA hybrid (C) whereas the second elution contains mainly the cellular DNA isolated from the exfoliated cells that may be present in any urine sample (A). Lane M is 10  $\mu$ L of Norgen's FastRunner DNA Ladder.

### Urine DNA Isolation Mini Kit (Slurry Format) Contents

1. Stabilizer
2. Binding Solution I
3. Proteinase K
4. Pronase
5. Binding Solution II
6. Wash Solution I
7. Wash Solution II
8. Elution Buffer
9. Mini Filter Spin Columns
10. Collection Tubes
11. Elution Tubes
12. Product Insert

### Shipping Conditions

The Urine DNA Isolation Mini Kit (Slurry Format) is shipped at room temperature.



**Figure 2. Isolation and Detection of DNA from Different Volumes of Urine.**

Total genomic DNA was isolated from 7, 10, 14 and 25 mL urine samples using Norgen's Urine DNA Isolation Mini Kit (Slurry Format). The isolated DNA was then subjected to quantitative PCR using human 5S gene primers to detect the genomic DNA. To test the absence of PCR inhibitors usually accompanying DNA isolated from urine, an increasing amount from each elution (1, 3, 6 and 9  $\mu$ L) was used as a template in the PCR reaction. The red lines in the PCR baseline graph above correspond to the DNA isolated from 7 mL urine sample, the green lines correspond to the DNA isolated from the 10 mL of urine, the blue lines correspond to the DNA isolated from the 14 mL of urine, and the orange lines correspond to the DNA isolated from the 25 mL of urine. The genomic DNA could be detected in all cases.

### Customer-Supplied Reagents and Equipment

- Centrifuge with a swinging bucket rotor
- Benchtop microcentrifuge
- Micropipettors
- 96 – 100% ethanol
- 15 mL tubes
- 60°C incubator

Cat #	Description	Quantity
27000	Urine DNA Isolation Mini Kit (Slurry Format)	48 Columns