

Urine Cell-Free Circulating RNA Purification Mini Kit

This kit provides a fast, reliable and convenient method to purify and concentrate high quality, high purity and inhibitor-free cell-free circulating RNA, including exosomal RNA as well as viral RNA from fresh, preserved or frozen urine samples from volumes ranging from 250 μ L to 2 mL. All components for the purification are provided in one convenient and fast kit for the easy processing of small input volumes of bodily fluids. The purified urine RNA is fully compatible with all downstream applications including PCR, qPCR, methylation-sensitive reverse transcription qPCR, reverse transcription PCR, Northern blotting, RNase protection and primer extension, expression array assays, and NGS.



Kit Specifications			
Minimum Urine Input	250 μ L	Maximum Urine Input	2 mL
Time to Complete Purification	25-30 minutes	Size of RNA Purified	All sizes, including miRNA and small RNA (< 200 nt)

Urine Cell-Free Circulating RNA Purification Mini Kit Benefits

No phenol:chloroform extractions	Circulating RNA and Exosomal RNA are isolated without the use of harmful chemicals such as phenol or chloroform.
Isolate all sizes of circulating RNA and exosomal RNA	The kit allows for the isolation of all sizes of fragmented circulating RNA and exosomal RNA, including microRNA.
Fast and easy processing	Rapid spin column format allows for the processing of multiple samples in under 25-30 minutes.
Versatile input volume	Isolate circulating RNA and exosomal RNA from 250 μ L to 2 mL of plasma/serum.
Concentrate circulating RNA and Exosomal RNA	Circulating and exosomal RNA present in input volumes of 250 μ L to 2 mL are concentrated into final elution volume of 50 μ L to 100 μ L.
Isolate inhibitor-free RNA	Purified RNA can be used in a number of sensitive downstream applications including reverse transcription qPCR, reverse transcription PCR, Northern blotting, RNase protection and primer extension, and expression array assays.

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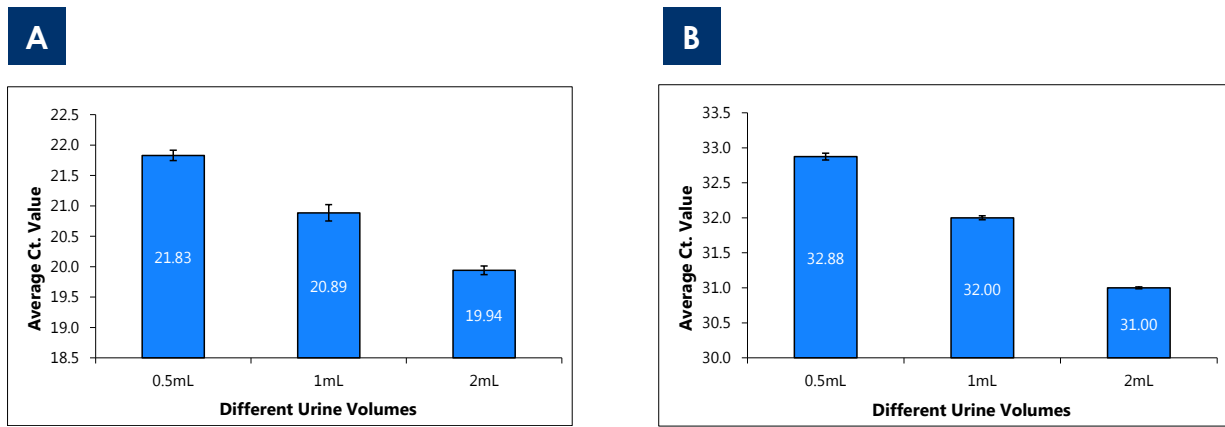


Figure 1. Purification of cell-free circulating RNA and exosomal RNA from different urine volumes. Norgen's Urine Cell-Free Circulating RNA Purification Mini Kit (Cat# 56900) was used to purify cell-free circulating and exosomal RNA from 0.5 mL, 1 mL and 2 mL urine sample. Two microlitres of the purified RNA was then used as the template in RT-qPCR reactions to assess the amplification of the purified the (A) housekeeping 5S rRNA transcript and (B) miR-21. The average Ct. Value for both (A) 5S rRNA transcript and (B) miR-21 is linearly decreasing with increasing the sample input volume

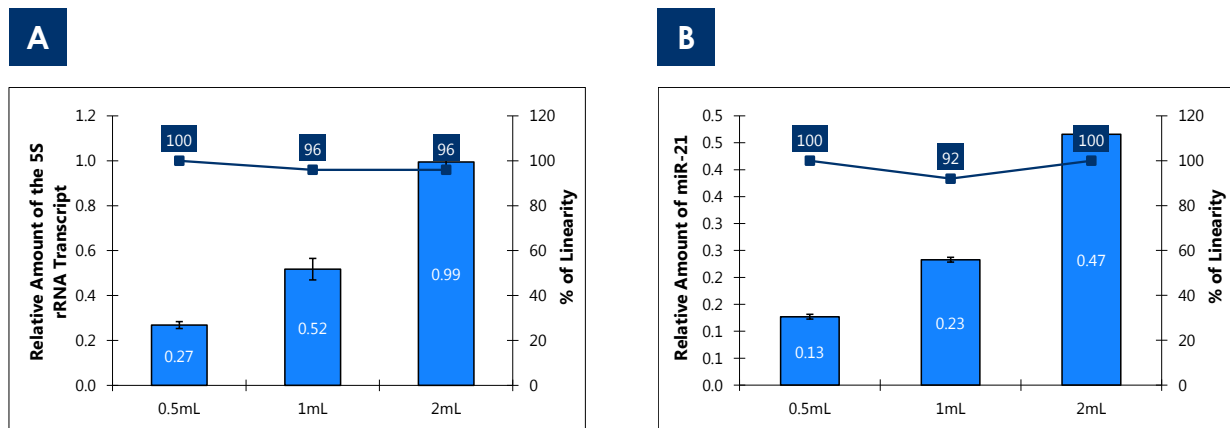


Figure 2. Linearity of RNA purified from increasing urine volumes. Norgen's Urine Cell-Free Circulating RNA Purification Mini Kit (Cat# 56900) was used to purify RNA from 0.5 mL, 1 mL and 2 mL urine samples. Two microlitres of the purified RNA was then used as the template in RT-qPCR reactions to assess the linearity of the purified the housekeeping (A) 5S rRNA transcript and (B) miR-21 from the different urine volumes. Norgen's Urine Cell-Free Circulating RNA Purification Mini Kit was able to recover 96% of the 5S rRNA transcript from 1 mL urine relative to the amount that is present in 0.5 mL plasma. Moreover, 96% of the 5S rRNA transcript was recovered from 2 mL urine relative to the amount that is present in 1 mL urine. As for miR-21, Norgen's Urine Cell-Free Circulating RNA Purification Mini Kit was able to recover 92% of miR-21 from 1 mL urine relative to the amount that is present in 0.5 mL urine. Furthermore, 100% of miR-21 was recovered from 2 mL urine relative to the amount that is present in 1 mL urine.

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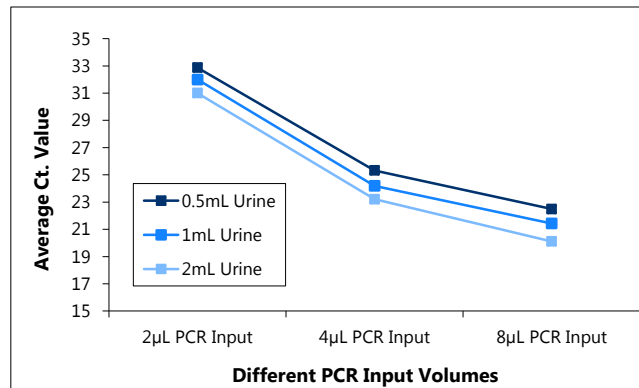


Figure 3. Determination of the amount of inhibition present in urine cell-free circulating RNA samples when detecting the human miR-21. RNA was isolated from 0.5 mL, 1 mL and 2 mL urine using Norgen's Urine Cell-Free Circulating RNA Purification Mini Kit (Cat# 56900). Increasing volumes of the elution (2, 4 and 8 L) were used in a 20 L qPCR reaction to observe any decrease in Ct value. An increase in Ct values with increasing amount of template would be a clear indication of PCR inhibitors present in the sample. An increase in elution volume used as a template in the qPCR did not affect the Ct value generated from qPCR and in fact the Ct values tend to decrease with increasing the PCR input volume indicating that RNA purified from urine using Norgen's kit is free of the common inhibitors usually present in urine.

Urine Cell-Free Circulating RNA Purification Mini Kit Contents:

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

Storage Conditions

All buffers should be kept tightly sealed and stored at room temperature (15-25°C) for up to 2 years without showing any reduction in performance. It is recommended to warm Lysis Buffer A for 20 minutes at 60°C if any salt precipitation is observed.

Customer-Supplied Reagents and Equipment

- Benchtop microcentrifuge
- Swinging bucket centrifuges
- Vortexer
- Micropipettors
- 96 – 100% ethanol
- 100% Isopropanol
- β - Mercaptoethanol

Shipping Conditions

The Urine Cell-Free Circulating RNA Purification Mini Kit is shipped at room temperature.

Cat #	Description	Quantity
56900	Urine Cell-Free Circulating RNA Purification Mini Kit	50 preps