

Urine Exosome Purification and RNA Isolation Kit

CAT. 58400, 58700, 58800

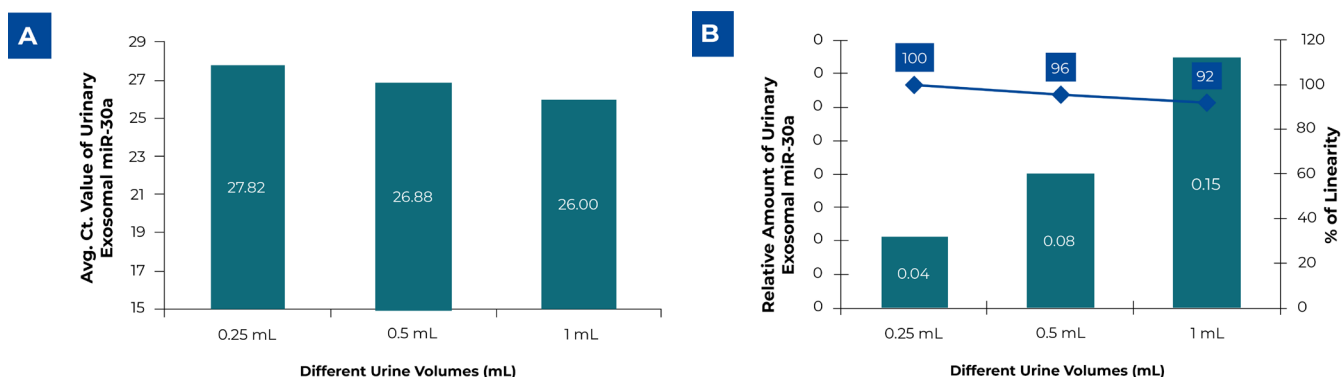
ALL-IN-ONE SYSTEM FOR THE PURIFICATION OF EXOSOMES AND THE SUBSEQUENT ISOLATION OF RNA FROM URINE SAMPLES



- ✓ Purification and enrichment of intact urinary exosomes for functional studies
- ✓ Isolate all sizes of RNA, including microRNA, irrespective of size or GC content, without bias.
- ✓ Versatile urine input volumes
- ✓ No phenol extractions, Proteinase K treatment, nor carrier RNA required
- ✓ No time-consuming ultracentrifugation, filtration nor special syringes are required
- ✓ No precipitation reagents nor overnight incubation required
- ✓ Compatible with urine from most species
- ✓ Pure exosomes are purified and are free from any other RNA-binding proteins

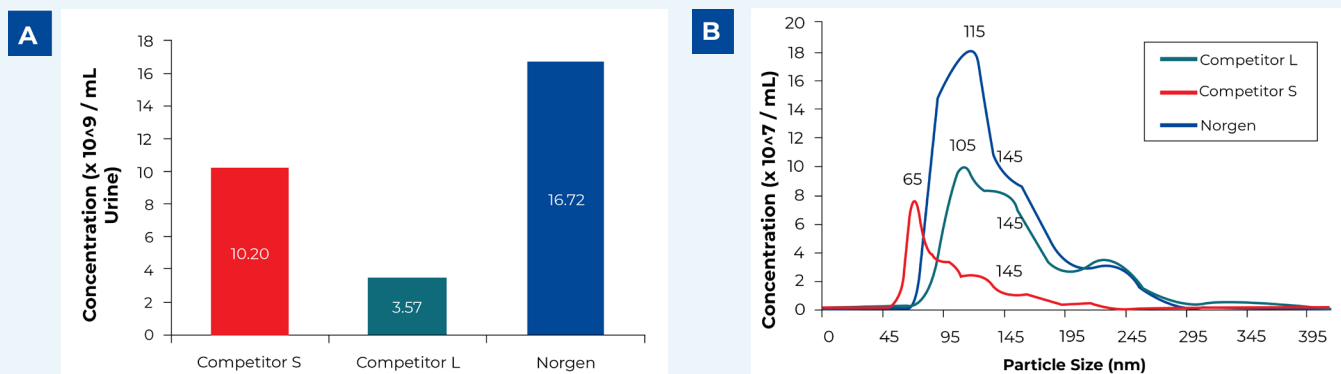


Advantages You Will Bring to Your Lab



EXCELLENT LINEARITY WITH A PERCENTAGE OF RECOVERY OF MORE THAN 90% USING MINI KIT

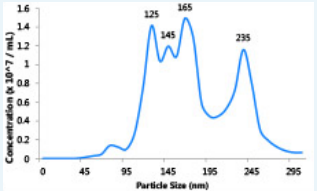
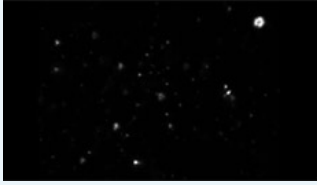
Figure 1. Isolation of RNA from exosomes purified from different urine volumes. Norgen's Urine Exosome Purification and RNA Isolation Mini Kit (Cat# 58400) was used to isolate RNA from exosomes purified from different urine volumes using the same kit. 2 μ L of the isolated RNA was then used as the template in RT-qPCR reactions to assess the amplification of the isolated urinary exosomal miR-30a. (A) The avg. Ct value for urinary exosomal miR-30a is linearly decreasing with increasing the sample input volume. (B) The relative amount of the urinary exosomal miR-30a shows excellent linearity with a percentage of recovery of more than 90%.



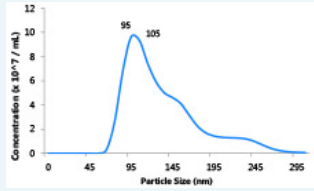
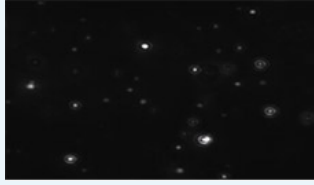
HIGH EXOSOMES YIELD COMPARED TO COMPETITORS

Figure 2. Comparing exosome yields from different commercial purification methods. Intact exosomes were purified from 5 mL urine using Norgen's Urine Exosome Purification and RNA Isolation Midi Kit (Cat# 58700), Competitor S's kit, and Competitor L's kit. Exosomes purified using Norgen's kit were resuspended in 400 μ L Norgen's ExoR buffer, diluted 1:1,000 and visualized on the NanoSight LM10 instrument. The analysis shows that Norgens kit isolated 115 nm exosomes with a recovery of 8.36 $\times 10^9$ particles/mL urine samples. No impurities were found to be contaminating the exosomes purified using Norgen's Urine Exosome Purification and RNA Isolation Midi kit. Additionally, exosomes with a broader size range covering from 75nm to 250nm were purified from 5 mL urine with a higher concentration as compared to the other two methods.

Ultracentrifugation

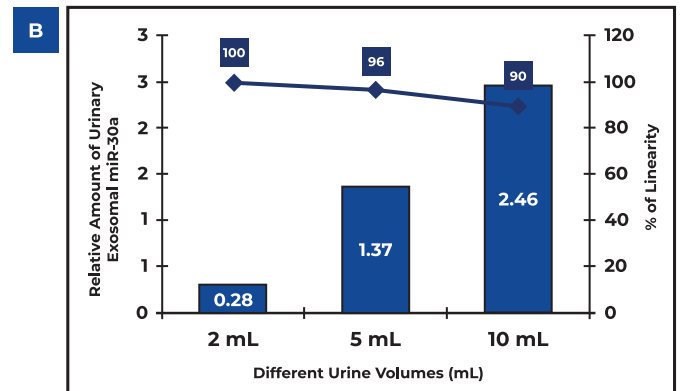
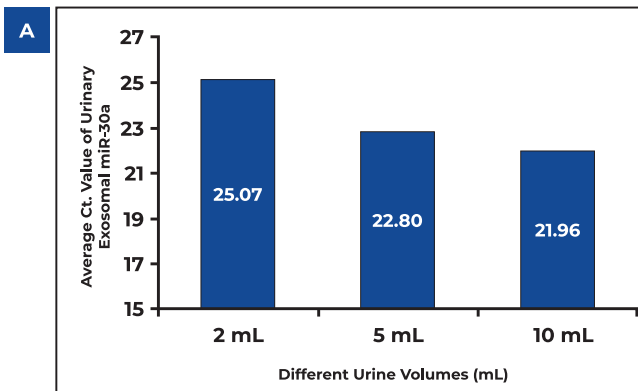


Norgen



NORGEN'S KIT PURIFIED EXOSOMES IN THE CORRECT SIZE RANGE COMPARED TO ULTRACENTRIFUGATION

Figure 3. Comparing exosome profiles from Norgen's method and ultracentrifugation. Exosomes purified using Norgen's kit and ultracentrifugation were resuspended in 400 μ L of Norgen's ExoR buffer, diluted 1:1,000 and visualized on the NanoSight LM10 instrument. The analysis shows that Norgens kit purified exosomes with sizes ranging from 65 nm - 195 nm, with a total recovery of 7.63×10^8 particles/mL. No impurities were found to be contaminating the exosomes purified using Norgen's Urine Exosome Purification and RNA Isolation Midi Kit as opposed to the exosomes purified using ultracentrifugation, which purified exosomes with larger particle sizes ranging from 125 nm to 235 nm with a total recovery of 1.56×10^8 particles/mL.



URINARY EXOSOMAL MIR-30A SHOWS EXCELLENT LINEARITY WITH A PERCENTAGE OF RECOVERY OF MORE THAN 90% USING MIDI KIT

Figure 4. Isolation of RNA from exosomes purified from different urine volumes. Norgen's Urine Exosome Purification and RNA Isolation Midi Kit (Cat# 58700) was used to isolate RNA from exosomes purified from different urine volumes using the same kit. 2 μ L of the isolated RNA was then used as the template in RT-qPCR reactions to assess the amplification of the isolated urinary exosomal miR-30a. (A) The avg. Ct value for urinary exosomal miR-30a is linearly decreasing with increasing the sample input volume. (B) The relative amount of the urinary exosomal miR-30a shows excellent linearity with a percentage of recovery of more than 90%.

TECHNICAL SPECIFICATIONS

Description	Specifications
Minimum Urine Input	2 mL
Maximum Urine Input	10 mL
Size of Exosomes Purified	40 nm - 150 nm
Size of RNA Purified	All sizes, including miRNA and small RNA (< 200 nt)
Elution Volume	50-100 μ L
Time to Complete 10 Purifications	35 - 40 minutes
Average Yields*	Variable depending on specimen

SELECT PUBLICATIONS

Publication Title	Authors	Journal	Year
Global analysis of urinary extracellular vesicle small RNAs in autosomal dominant polycystic kidney disease.	Hamad Ali, Md. Zubair Malik, Mohamed Abu-Farha, Jehad Abubaker, Preethi Cherian, Rasheeba Nizam, Sindhu Jacob, Yousif Bahbahani, Medhat Naim, Sajjad Ahmad, Mohammad Al-Sayegh, Thangavel Alphonse Thanaraj, Albert C. M. Ong, Peter C. Harris, Fahd Al-Mulla	The journal of gene medicine	2024
The bone mesenchymal stem cell-derived exosomal miR-146a-5p promotes diabetic wound healing in mice via macrophage M1/M2 polarization	Zhou X, Ye C, Jiang L, Zhu X, Zhou F, Xia M, Chen Y.	Molecular and cellular endocrinology	2023

Ordering Information

Description	Preps	Cat. #
Urine Exosome Purification and RNA Isolation Kit Mini	50 Prep	58400
Urine Exosome Purification and RNA Isolation Kit Midi	25 Preps	58700
Urine Exosome Purification and RNA Isolation Kit Maxi	15 Preps	58800

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APPLICATION

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Exosomal RNA Isolation Kit	Variable	58000
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