Plasma/Serum Circulating and Exosomal RNA Purification Mini Kit (Slurry Format)

Norgen's Plasma/Serum Circulating and Exosomal RNA Purification Mini Kit provides a fast, reliable and simple procedure for isolating circulating RNA and exosomal RNA from various amounts of plasma/serum ranging from 0.25 mL to 2 mL. Free-circulating RNA and exosomal RNA in plasma and serum has the potential to provide biomarkers for certain cancers and disease states, and includes tumor-specific extracellular RNA in the blood. Norgen's Plasma/Serum Circulating and Exosomal RNA Purification Mini Kit provides an efficient method for the purification of all sizes of these fragmented free-circulating and exosomal RNAs from human plasma or serum. Exosomes are 40 - 100 nm membrane vesicles, which are secreted by most cell types. Exosomes can be found in saliva, blood, urine, amniotic fluid and malignant ascitic fluids, among other biological fluids. Evidence has been accumulating recently that these vesicles act as cellular messengers, conveying information to distant cells and tissues within the body. The exosomes contain cell-specific proteins, lipids and RNAs, which are transported to other cells, where they can alter function and/or physiology. These exosomes may play a functional role in mediating adaptive immune responses to infectious agents and tumours, tissue repair, neural communication and transfer of pathogenic proteins. Recent work has demonstrated the presence of distinct subsets of microRNAs within exosomes which depend upon the tumour cell type from which they are secreted. For this reason exosomal RNAs may serve as biomarkers for various diseases including cancer. As the RNA molecules encapsulated within exosomes are protected from degradation by RNAses they can be efficiently recovered from biological fluids, such as plasma or serum.

Kit Specifications			
Minimum Plasma/Serum Input	0.25 mL	Maximum Plasma/Serum Input	2 mL
Time to Complete Purification	< 40 minutes	Size of RNA Purified	All sizes, including microRNA

Plasma/Serum Circulating and Exosomal RNA Purification Kit Benefits	
Isolate all sizes of circulating RNA	The kit allows for the isolation of all sizes of fragmented circulating RNA and exosomal RNA, including microRNA.
Fast and easy processing	Rapid format allows for the processing of multiple samples in 30 minutes.
Concentrate circulating and exosomal RNA	Circulating and exosomal RNA present in input volumes of 0.25 - 2 mL are concentrated into a final elution volume of 100 µL.
Isolate inhibitor-free RNA	Purified RNA can be used in a number of sensitive downstream applications including real time PCR, reverse transcription PCR, Northern blotting, RNase protection and primer extension, and expression array assays.

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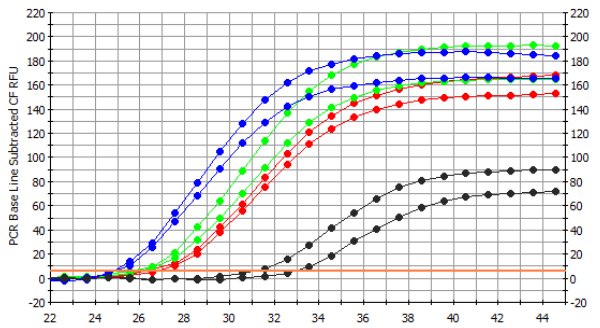

Figure 1. Isolation and Detection of Circulating RNA from Different Plasma Volumes. The kit was used to isolate circulating RNA from 0.5mL, 1mL and 2mL plasma. Three microlitres of the purified RNA was then used as the template in RT-qPCR reactions to detect the human 5S gene. The 5S housekeeping gene was detected from all plasma sample volumes used. RNA isolated from 0.5mL plasma is represented by the red line, RNA isolated from 1mL plasma is represented by the green line whereas RNA isolated from 2mL plasma is represented by the blue line. The black line corresponds to the no template control.

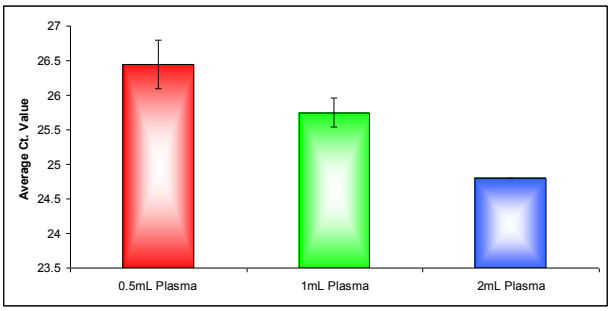

Figure 2. Effective Isolation of Plasma Circulating RNA from Different Volumes. Norgen's kit was used to isolate circulating RNA from 0.5mL, 1mL and 2mL plasma. Three microlitres of the purified RNA was then used as the template in RT-qPCR reactions to detect the human 5S gene. The 5S housekeeping gene was detected from all plasma sample volumes used. The amplification of the 5S rRNA showed an increasing amount of RNA with increasing the sample input volume. This is represented by the decrease of the Ct value with increasing the sample input volume.

Plasma/Serum Circulating and Exosomal RNA Purification Mini Kit (Slurry Format) Contents:

1. Slurry C2
2. Lysis Buffer A
3. Wash Solution A
4. Elution Solution A
5. Mini Filter Spin Columns
6. Collection Tubes
7. Elution tubes (1.7 mL)
8. Product Insert

Customer-Supplied Reagents and Equipment

- Centrifuge with a swinging bucket rotor capable of 2000 RPM
- Benchtop microcentrifuge
- Micropipettors
- 96 – 100% ethanol
- β - Mercaptoethanol
- 50 mL tubes
- 15 mL tubes

Storage Conditions

All buffers should be kept tightly sealed and stored at room temperature (15-25oC) for up to 1 year without showing any reduction in performance. It is recommended to warm PS Solution A, PS Solution B and PS Solution C for 20 minutes at 60oC if any salt precipitation is observed.

Shipping Conditions

The Plasma/Serum Circulating RNA Purification Mini Kit (Slurry Format) is shipped at room temperature.

Cat #	Description	Quantity
51000	Plasma / Serum Circulating and Exosomal RNA Purification Mini Kit (Slurry Format)	50 preps

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