Plasma/Serum 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 and exosomal RNA using a convenient spin column method. This kit can purify RNA from fresh or frozen serum or plasma samples prepared from blood collected on either EDTA or Citrate, from volumes ranging from 50 µL to 200 µL. Plasma samples prepared from blood collected on heparin should not be used, as heparin can significantly interfere with many downstream applications such as RT-PCR.

The purified plasma/serum RNA is eluted in a flexible final volume of 10 µL to 25 µL and 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 Plasma/Serum Input	50 µL	Maximum Plasma/Serum Input	200 µL
Time to Complete Purification	15-20 minutes	Size of RNA Purified	All sizes, including miRNA and small RNA (< 200 nt)

Plasma/Serum 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 15-20 minutes.
Small input volume	Isolate circulating RNA and exosomal RNA from 50 µL to 200 µL of plasma/serum.
Concentrate circulating RNA and Exosomal RNA	Circulating and exosomal RNA present in input volumes of 50 µL to 200 µL are concentrated into final elution volume of 10 µL to 25 µL.
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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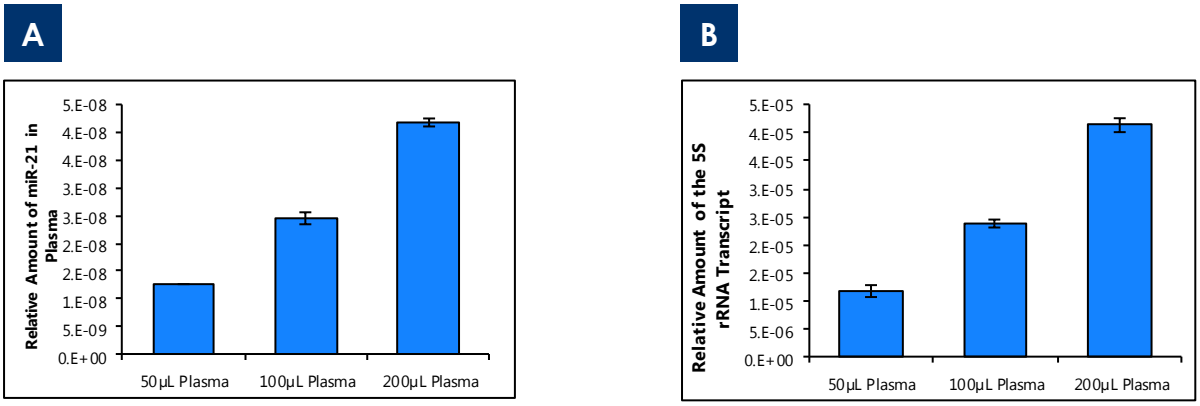

Figure 1. Purification of circulating RNA from different plasma volumes. Norgen's Plasma/Serum RNA Purification Mini Kit was used to purify circulating RNA from 50 µL, 100 µL and 200 µL plasma prepared from blood collected on EDTA. Three microlitres of the purified RNA was then used as the template in RT-qPCR reactions to detect miR-21 (Figure 1A) and the housekeeping 5S rRNA transcript (Figure 1B). The relative amount of both the miR-21 (Figure 1A) and the 5S rRNA transcript (Figure 1B) is linearly increasing with increasing the sample input volume.

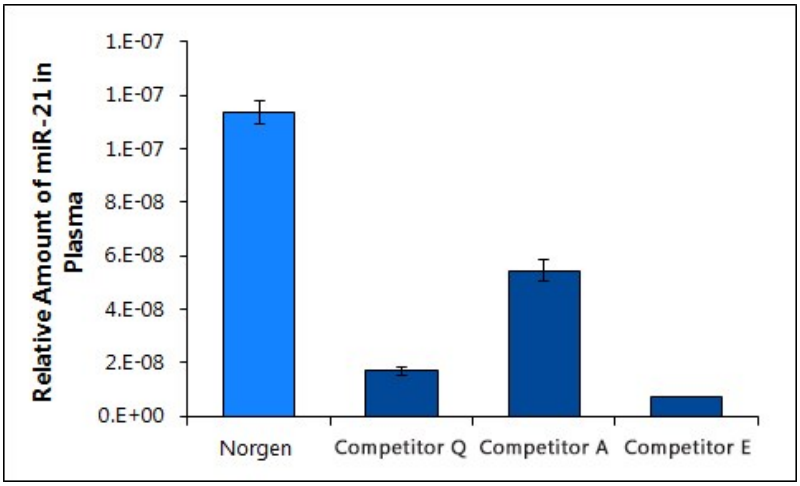

Figure 2. Effective and consistent detection of miRNA from plasma. Norgen's Plasma/Serum RNA Purification Mini Kit can effectively isolate miRNA from plasma. Circulating miRNA was isolated from 200 µL plasma using Norgen's Plasma/Serum RNA Purification Mini Kit, competitor Q's kit, competitor A's kit, and competitor E's kit. Circulating miRNA was isolated from 600 µL using competitor A's kit. Stem loop RT-qPCR using primers specific to miR-21 was performed. In brief, 1 microliter of the 15 µL purified RNA using Norgen's Plasma/Serum RNA Purification Mini Kit, competitor Q's kit and 3.3 microliters of the 50 µL purified RNA using competitor E's kit and competitor A's kit was then subjected to a 20 µL reverse transcription using miR-21 stem-loop reverse primer. Three microliters of the reverse transcription was used in a 20 µL real-time PCR reaction with primers to detect the human miR-21. Norgen's Plasma/Serum RNA Purification Mini Kit is the only product that showed the most consistent and the highest recovery of the miR-21 transcripts as compared to the other isolation methods. The recovery of the miRNA from 200 µL plasma was higher than that recovered from RNA purified from 600 µL using competitor A's kit.

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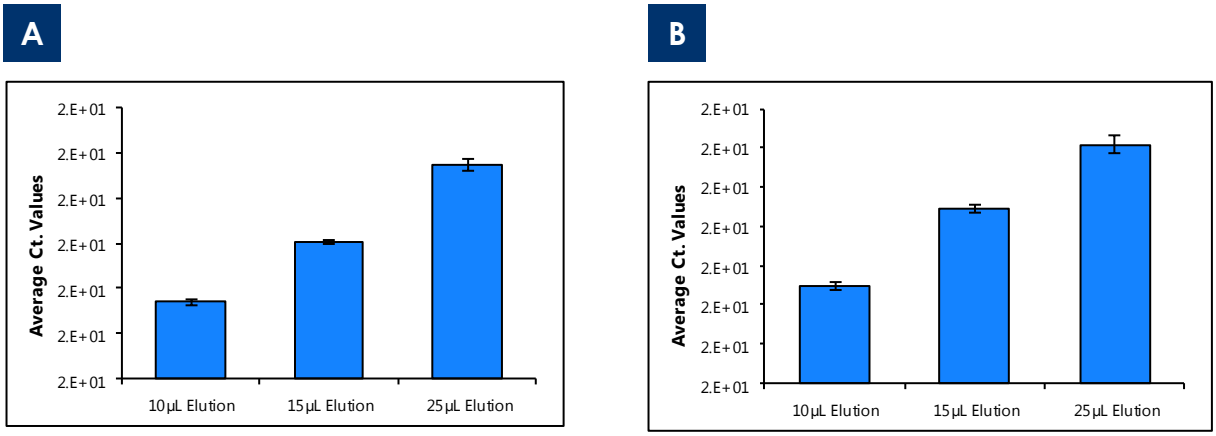

Figure 3. Eluting purified circulating RNA from into different elution volumes. Norgen's Plasma/Serum RNA Purification Mini Kit was used to purify circulating RNA from 200 µL plasma prepared from blood collected on EDTA and eluted in 10 µL, 15 µL, and 25 µL. Three microlitres of the purified RNA was then used as the template in RT-qPCR reactions to detect miR-21 (Figure 2A) and the housekeeping 5S rRNA transcript (Figure 2B). The relative amount of both the miR-21 (Figure 1A) and the 5S rRNA transcript (Figure 1B) is decreasing with increasing the elution volume indicating the efficient concentration of the plasma circulating RNA in a very low elution volume.

Plasma/Serum RNA Purification Mini Kit Contents:

1. Lysis Buffer A
2. Wash Solution A
3. Elution Solution A
4. Micro Spin Columns
5. Collection Tubes
6. Elution tubes (1.7 mL)
7. 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
- Micropipettors
- 96 – 100% ethanol
- β - Mercaptoethanol

Shipping Conditions

The Plasma/Serum RNA Purification Mini Kit is shipped at room temperature.

Cat #	Description	Quantity
55000	Plasma / Serum RNA Purification Mini Kit	50 preps

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