Leukocyte RNA Purification Kit

Norgen's Leukocyte RNA Purification Kit provides a rapid method for the isolation and purification of total leukocyte RNA from mammalian blood samples. Selective isolation of leukocyte RNA results in improved expression profiling and other downstream applications by removing the masking effects of some RNAs which are very abundant in whole blood, such as globin mRNAs. The purified RNA is of the highest quality and can be used in a number of downstream applications.

In this procedure the red blood cells are first removed from the sample through differential red blood cell lysis, and the leukocytes are recovered through centrifugation. The leukocytes are lysed, and purification of the leukocyte RNA is then based on spin column chromatography using Norgen's proprietary resin as the separation matrix. Norgen's resin binds RNA in a manner that depends on ionic concentrations. The RNA is preferentially purified from the other cellular components such as genomic DNA and proteins without the use of phenol or chloroform. The kit is able to isolate total leukocyte RNA, including all small RNA species.

Kit Specifications			
Column Binding Capacity	50 µg	Maximum Column Loading Volume	650 µL
Size of RNA Purified	All sizes	Time to Complete 10 Purifications	40 minutes
Minimum Blood Input	10 µL	Average RNA Yield:	
Maximum Blood Input	2 mL or 3 x 10^6 leukocytes	500 µL Human Blood	1.5 µg

Leukocyte RNA Purification Kit Benefits	
Fast and easy processing	Rapid spin-column format allows for the processing of 10 samples in 40 minutes.
No phenol:chloroform extractions	Norgen's Leukocyte RNA Purification Kit isolates RNA without the use of harmful chemicals such as phenol or chloroform.
Isolate total leukocyte RNA	All leukocyte RNA species are isolated, from large mRNA down to microRNA.
Fractionate leukocytes from whole blood in minutes	Rapid removal of red blood cells from whole blood samples using differential red blood cell lysis.
Recovered RNA is suitable for downstream applications	Purified RNA can be used in a number of downstream applications including real-time PCR, reverse transcription PCR, Northern blotting, RNase protection and primer extension, and expression array analysis requiring the use of intact RNA.

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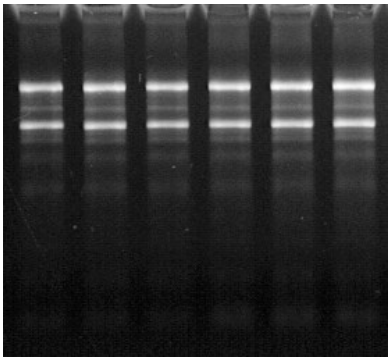

Figure 1. Consistent Isolation of High Quality Leukocyte RNA. Norgen's Leukocyte RNA Purification Kit isolates leukocyte RNA of high quality with great consistency. Total RNA was isolated from 100 µL of hamster blood using Norgen's Leukocyte RNA Purification Kit. A total of 6 replicates were performed. The purified RNA was then resolved on a 1.2% formaldehyde-agarose gel. As it can be seen, Norgen not only isolated high and consistent yields of total RNA, but the RNA was also of high quality as evidenced by intactness of the major 28S and 18S rRNA.

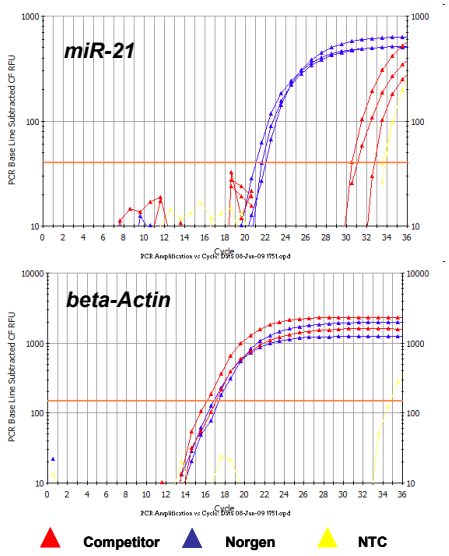

Figure 2. High Yield of a Diversity of RNA Species. Total RNA was isolated from 200 µL of hamster blood sample using Norgen's Leukocyte RNA Purification Kit and a leading competitor's kit. Two hundred nanograms of the purified RNA (both 50 µL elution volumes) was then used as the template in a RT-qPCR for detecting the beta-Actin gene (Lower Panel) and for detecting miR-21 (Upper Panel). In both graphs the blue lines correspond to Norgen isolated-RNA and the red lines correspond to competitor-isolated RNA. As it can be seen, Norgen's kit isolated higher yields of microRNA, as indicated by the lower Ct values of the blue lines (Upper Panel). Also, Norgen's kit successfully isolated a similar amount of the large RNA compared to the competitor's kit (Lower Panel) indicating the full diversity of RNA species isolated.

Leukocyte RNA Purification Kit Contents

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

Shipping Conditions

The Leukocyte RNA Purification Kit is shipped at room temperature.

Storage Conditions

All solutions should be kept tightly sealed and stored at room temperature. These reagents should remain stable for 1 year in their unopened containers.

Customer-Supplied Reagents and Equipment

- Benchtop microcentrifuge
- β-mercaptoethanol
- 95-100% ethanol

Cat #	Description	Quantity
21200	Leukocyte RNA Purification Kit	50 preps
21201	RBC Lysis Solution	90 mL

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