

Leukocyte RNA Purification 96-Well Kit

Norgen's Leukocyte RNA Purification 96-Well Kit provides a rapid method for the isolation and purification of total leukocyte (white blood cell) RNA from mammalian blood samples. RNA isolated from blood can be used in various expression studies including those focusing on diseases. However, a major problem with blood RNA isolation is that a large portion of the RNA present is globin mRNA, which is found primarily in red blood cells. In fact, up to 70% of the mass of mRNA in whole blood total RNA is globin trans-



cripts. Therefore, it is desirable to be able to remove the red blood cells from the sample and isolate only the RNA associated with the leukocytes, which will result in improved expression profiling and other applications by removing the masking effects of this abundant globin mRNA. Norgen's Leukocyte RNA Purification Kit can be used to isolate and purify total leukocyte RNA, including all small RNAs, from mammalian blood samples. Purification is based on 96-well column chromatography using Norgen's proprietary resin as the separation matrix. The RNA is preferentially purified from the other cellular components such as proteins, without the use of phenol or chloroform.

Kit Specifications			
Binding Capacity Per Well	50 µg	Maximum Loading Volume per Well	500 µL
Size of RNA Purified	All sizes, including small RNA (< 200 nt)	Time to Complete 10 Purifications	40 minutes
Standard Blood Input	150 µL	Average RNA Yield:	
Maximum Blood Input*	1 mL or 1.5 x 10 ⁶ leukocytes	500 µL Human Blood	1.5 µg

*Additional RBC Lysis Solution is required for input Volumes >150 mL

Leukocyte RNA Purification 96-Well Kit Benefits

Fast and easy processing	96-Well Plates can be rapidly processed using either a vacuum manifold or centrifugation.
No phenol:chloroform extractions	Norgen's Leukocyte RNA Purification 96-Well 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.

Leukocyte RNA Purification 96-Well Kit

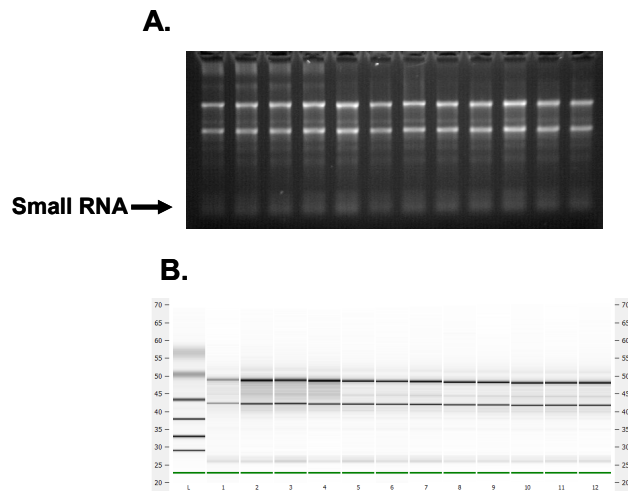


Figure 1. Consistent Yield of High Quality Leukocyte RNA with Complete Size Range without the Use of Phenol. Total RNA was isolated from 200 μ L aliquots of hamster blood using Norgen's Leukocyte RNA Purification 96-Well Kit in 12 replicates. Five microliters of the 75 μ L isolated RNA was resolved on a 1.2% formaldehyde agarose gel (Panel A) and 1 μ L of the 75 μ L isolated RNA was resolved on an Agilent RNA Nano 6000 Chip in a 2100 Bioanalyzer (Panel B). All 12 replicates showed both high yield and high quality. In addition, all replicates showed effective recovery of all sizes of RNA including the small RNA (arrow).

Leukocyte RNA Purification 96-Well Kit Contents

1. RBC Lysis Buffer
2. Buffer RL
3. Wash Solution A
4. Elution Solution A
5. RBC Lysis 96-Well Plate
6. 96-Well Plate
7. Adhesive Tape
8. 96-Well Collection Plate
9. 96-Well Elution Plate
10. Product Insert

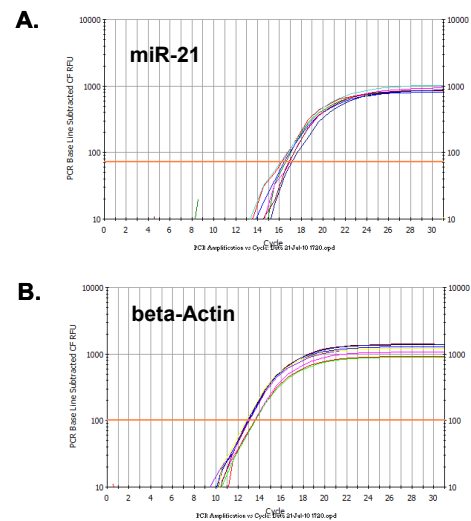


Figure 2. Isolation of Both Large and Small RNA. Leukocyte RNA was isolated from 200 μ L of hamster blood using Norgen's Leukocyte RNA Purification 96-Well Kit. Aliquots of each total RNA sample were then used in 2 different RT-qPCR reaction. Ten microliters of the 75 μ L isolated RNA was subjected to a 20 μ L reverse transcription using miR-21 stem-loop reverse primer or oligo dT. Three microliters of the reverse transcription was used in a 20 μ L real-time PCR reaction with primers to detect the miR-21 (Panel A) and the beta-actin transcripts (Panel B), respectively. Both the mRNA and microRNA were amplified in a consistent manner from all the samples, with low variability of the Ct values. Thus both types of RNA are being consistently isolated using this kit.

Shipping Conditions

The Leukocyte RNA Purification 96-Well 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.

Cat #	Description	Quantity
37800	Leukocyte RNA Purification 96-Well Kit	192 preps
21201	RBC Lysis Solution	90 mL