

## Total RNA Purification Plus Kit

Norgen's Total RNA Purification Plus Kit provides a rapid method for the isolation and purification of total RNA from cultured animal cells, small tissue samples, blood, plasma, serum, bacteria, yeast, fungi, plants and viruses. The kit purifies all sizes of RNA, from large mRNA and ribosomal RNA down to microRNA (miRNA) and small interfering RNA (siRNA). Genomic DNA is rapidly removed from the sample using a Genomic DNA Removal Column, without the use of any enzymes or incubation. Purification is based on spin column chromatography, and the total RNA is preferentially purified from other cellular components such as proteins without the use of phenol or chloroform. The purified RNA is of the highest integrity, and 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 assays.



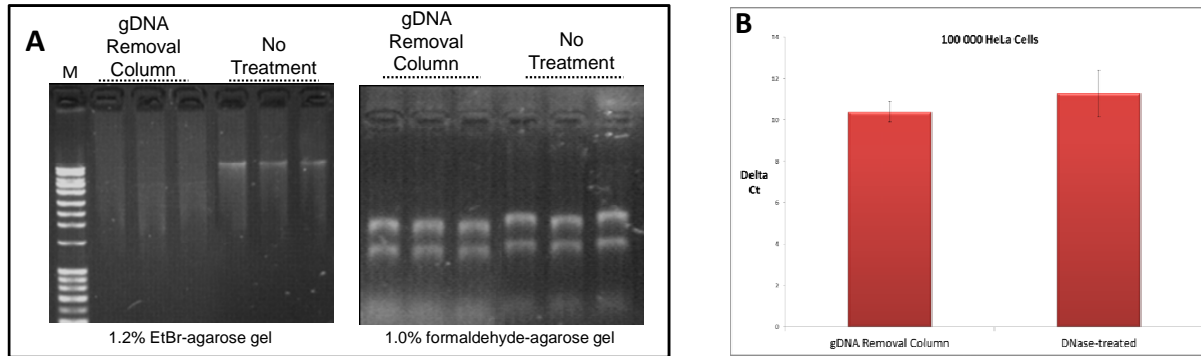
Kit Specifications		
Column Binding Capacity	50 µg	Maximum Amount of Starting Material:
Maximum Column Loading Volume	650 µL	
Size of RNA Purified	All sizes	Animal Cells
Time to Complete 10 Purifications	20 minutes	Animal Tissues*
Average RNA Yield:		Blood
		Bacteria
HeLa Cells (1 x 10 <sup>6</sup> cells)	15 µg	Yeast
<i>E. coli</i> (1 x 10 <sup>9</sup> cells)	50 µg	Fungi
		Plant Tissues
		Plasma/Serum

\* Maximum recommended input of tissue varies depending on the type of tissue being used. For isolating total RNA from larger amounts of tissue, please use Norgen's Animal Tissue RNA Purification Kit (Cat # 25700)

### Total RNA Purification Plus Kit Benefits

Isolate a diversity of RNA species	All RNA species can be isolated, from large mRNA and ribosomal RNA down to microRNA (miRNA) and small interfering RNA (siRNA) (Figure 1).
Rapid removal of genomic DNA	Contaminating gDNA is rapidly removed without the use of enzymes via a Genomic DNA Eliminator Column
Fast and easy processing	Rapid spin-column format allows for the processing of 10 samples in 20 minutes.
No phenol:chloroform extractions	Total RNA is isolated without the use of harmful chemicals such as phenol or chloroform.
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. Genomic DNA Removal from HeLa Cells and Delta Ct Values Observed Between Different gDNA Removal Techniques .** To demonstrate gDNA removal using the RNA Purification Plus Kit, 100, 000 HeLa cells were either passed through the gDNA Removal Column from the kit or received no gDNA removal treatment. The resulting RNA was then run on a 1.2% EtBr-agarose gel (Panel A, left gel). From observing the gel it can be seen that the gDNA Removal Column is removing all traces of the gDNA. The right gel in Panel A is a 1.0% formaldehyde-agarose gel showing the resulting RNA which was purified from the samples using the kit. To further test gDNA removal, 100,00 HeLa cells were either passed through the gDNA Removal Column or subjected to DNase-treatment using Norgen's RNase-Free DNase I (Cat# 25710). RT-qPCR was then performed with and without reverse transcription of the RNA sample in order to calculate the delta Ct and to determine the amount of genomic DNA contamination in RNA samples. From observing the graph in Panel B it can be seen that the gDNA Removal column eliminated gDNA to levels similar to that seen with DNase treatment.

### Total RNA Purification Plus Kit Contents

1. Wash Solution
2. Elution Solution
3. Lysis Solution
4. Genomic DNA Removal Columns
5. RNA Purification Columns
6. Collection Tubes
7. Elution Tubes
8. User Manual

### 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

### Customer-Supplied Reagents and Equipment

- Benchtop microcentrifuge
- 96 - 100% ethanol
- $\beta$ -mercaptoethanol
- Mortar and pestle, liquid nitrogen, 70% ethanol (Tissue, fungi, plant)
- TE Buffer and lysozyme (Bacteria)
- Resuspension buffer with lyticase (Yeast)
- Sterile, single-use cotton swabs (Nasal or throat swabs)
- MS2 RNA (Plasma/Serum)

### Shipping Conditions

The Total RNA Purification Plus Kit is shipped at room temperature.

Cat #	Description	Quantity
48300	Total RNA Purification Plus Kit	50 preps
48400	Total RNA Purification Plus Kit	100 preps