



Technical Note
PAXgene® Blood miRNA System

**Typical total RNA yields from PAXgene Blood RNA Tubes processed with the
PAXgene Blood miRNA Kit**

Study Design

Human whole blood was collected into multiple PAXgene Blood RNA tubes from each of approximately 200 apparently healthy, consented adult subjects. For this study, RNAs from a total of 1723 specimens were extracted and analyzed. While specimens collected in PAXgene Blood RNA Tubes were used for different studies, all specimens were stored according to manufacturer's recommendations: up to three days at room temperature, up to five days at 2–8°C, or frozen at –20°C or –80°C. Total RNA (including miRNA) from the samples was extracted following instructions in the PAXgene Blood miRNA Kit Handbook. RNA was extracted using the manual protocol for approximately 65 percent of all specimens while the remaining specimens (35%) were processed on the QIAcube®. The concentration of RNA in extraction eluates was determined by measuring the absorbance at 260 nm (A_{260}) in a spectrophotometer and using the relationship: 1 absorbance unit at 260 nm = 44 μg of RNA per ml. RNA yield is expressed as μg RNA per 2.5 ml whole blood.

Results

For 1723 specimens collected in PAXgene Blood RNA Tubes, stored under various conditions and extracted with the PAXgene Blood miRNA Kit, the yield per specimen for the majority (65%) of specimens was 6–18 μg of RNA. Yields for specimens rich in RNA were above 18 $\mu\text{g}/2.5$ ml blood (7%), and 28 percent of the specimens yielded less than 6 $\mu\text{g}/2.5$ ml blood. Less than two percent (1.63%) of the specimens had RNA yields of <3 $\mu\text{g}/\text{specimen}$ (Figure 1).

Conclusion

We have demonstrated that in a large study of 1723 specimens collected in PAXgene Blood RNA Tubes and processed with the PAXgene Blood miRNA Kit, the RNA yields from whole blood were ≥ 3 $\mu\text{g}/2.5$ ml blood for 98.37% of all specimens regardless of tube storage conditions or whether a manual or automated processing method was used. For 65% of the samples the yield was in the range of 6–18 μg total RNA (including miRNA).

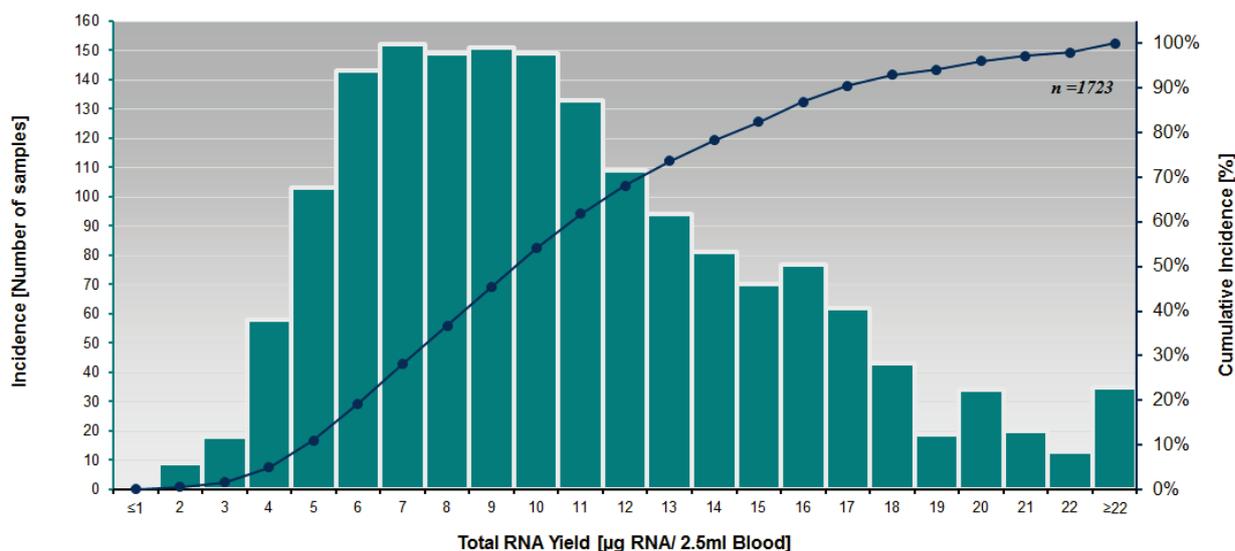


Figure 1. Distribution of total RNA yields from PAXgene Blood RNA Tubes. Total RNA yield was determined from each of 1723 blood samples collected into PAXgene Blood RNA Tubes. The tubes were stored under different conditions according to manufacturer’s recommendations. RNA was extracted either manually or using the QIAcube following the protocol in the PAXgene Blood miRNA Kit Handbook. RNA yield ($\mu\text{g}/2.5$ ml blood) is depicted for individual specimens (Incidence) and as a percentage of the total (Cumulative Incidence).

Products used

Product	Catalog No.
PAXgene Blood RNA Tubes (100)	762165
PAXgene Blood miRNA Kit (50)	763134
QIAcube (QIAGEN)	9001882

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