PreAnalytiX

A QIAGEN / BD Company

Technical Note
QIAsymphony® PAXgene® Blood RNA System

Typical total RNA Yields from PAXgene Blood RNA Tubes processed with the QIAsymphony PAXgene Blood RNA 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 2528 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 specimens was extracted following instructions in the QIAsymphony PAXgene Blood RNA Kit Handbook on four QIAsymphony SP instruments. 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 2528 specimens collected in PAXgene Blood RNA Tubes, stored under various conditions, and extracted with the QIAsymphony SP, the yield per specimen for the majority (88%) of samples was 6–20 µg of RNA. Specimens rich in RNA yielded above 20 µg (9%), and only two percent of the samples yielded less than 6 µg. Less than 1 percent (0.12%) of the specimens yielded <3 µg per specimen (Figure 1).

Conclusion

According to the QIAsymphony PAXgene Blood RNA Kit Handbook, guaranteed yields of RNA isolated from 2.5 ml whole blood are ≥3 µg/2.5 ml blood for >95% of specimens (see the QIAsymphony PAXgene Blood RNA Kit Handbook, p. 5). This study demonstrated that in a large study of 2528 specimens, the actual RNA yields from whole blood were ≥3 µg/2.5 ml blood for 99.86% of all specimens. For 88% of the samples the yield was in the range of 6–20 µg total RNA (including miRNA).

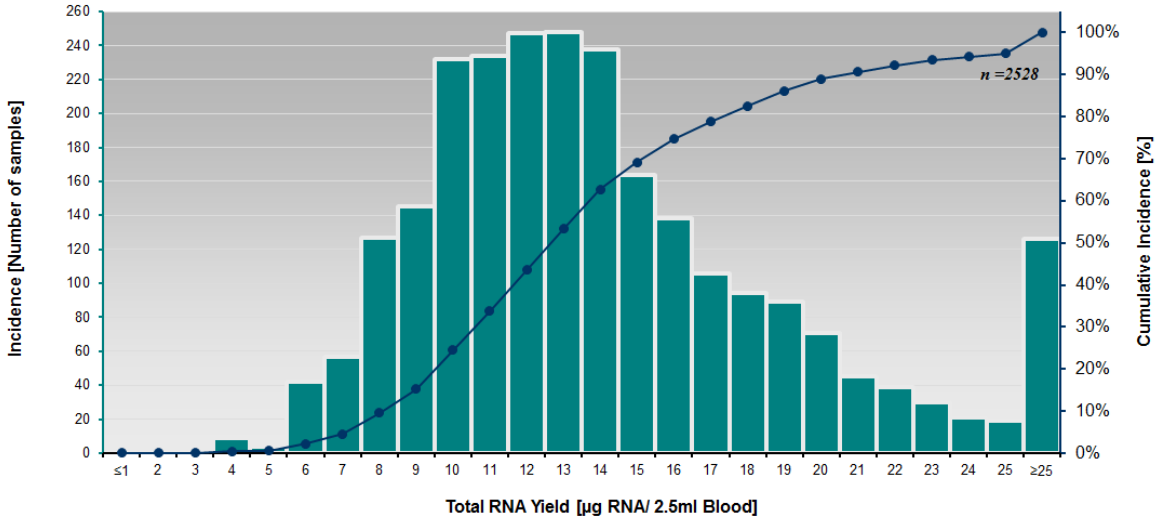

Figure 1. Distribution of total RNA yields from PAXgene Blood RNA Tubes. Total RNA yield was determined from each of 2528 blood specimens collected into PAXgene Blood RNA Tubes. The tubes were stored under different conditions according to manufacturer's recommendations. RNA was extracted on the QIAsymphony SP following the protocol of the QIAsymphony PAXgene Blood RNA Kit Handbook. RNA yield (µg/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
QIAsymphony PAXgene Blood RNA Kit (96)	762635
QIAsymphony SP (QIAGEN)	9001297

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