PreAnalytiX
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Technical Notes

Storage of Blood Samples Collected into PAXgene™ Blood DNA Tubes at 2–8°C

Human whole blood samples from 30 donors were drawn into PAXgene Blood DNA Tubes (five samples each from donors 1–20 and four samples each from donors 21–30, a total of 140 samples) and stored at 2–8°C for up to 28 days.

Duplicate samples from donors 1–20 and one sample from donors 21–30 were processed immediately (t_0). Remaining samples were stored at 2–8°C. A single sample from each donor was processed after storage for 7 days (t_7), 14 days (t_{14}), and 28 days (t_{28}). Samples were processed using the PAXgene Blood DNA Kit according to the standard protocol. The DNA was dissolved in 1 ml Buffer BG4 (resuspension buffer).

In total, 140 blood samples (50 at day 0, and 30 at days 7, 14, and 28) were analyzed. Yield and purity of DNA samples were analyzed by measuring the absorbance at 260 and 280 nm (Figure 1). The average DNA yield remained high with 296 µg on day 0, 309 µg on day 7, 291 µg on day 14 and 276 µg on day 28. DNA purity was high for all samples tested, with the A_{260}/A_{280} ratio consistently between 1.7 and 1.9.

Purified DNA was analyzed by agarose gel electrophoresis and by PCR amplification of a 1.1 kb fragment of the human single-copy gene Hugl. Agarose gel analysis showed that after 28 days storage at 2–8ºC, DNA samples run quantitatively above a 23 kb marker band (Figure 2). In addition, a 1.1 kb fragment of the human single-copy gene Hugl was amplified from all DNA samples (Figure 3).

Conclusion: High-quality, highly concentrated genomic DNA can be isolated after storage of PAXgene Blood DNA Tubes for up to 28 days at 2–8ºC using the PAXgene Blood DNA System.

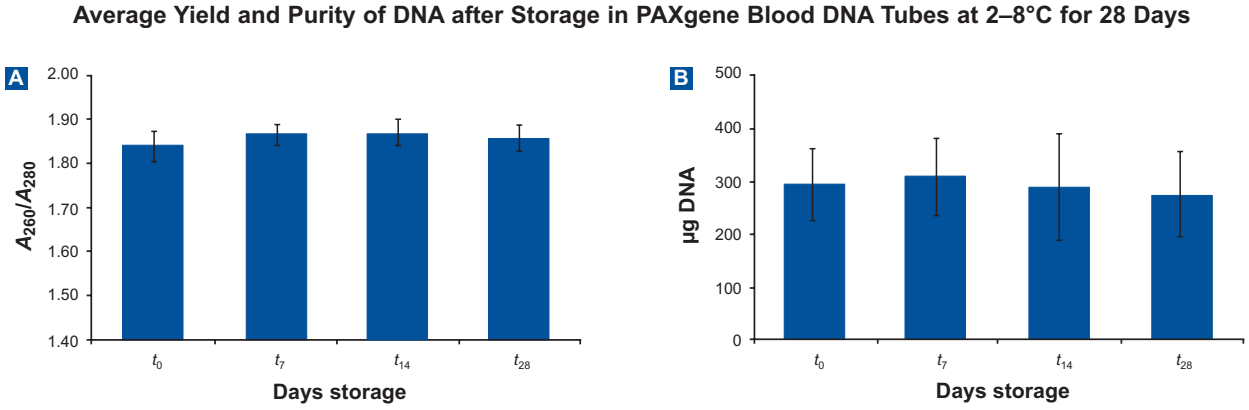

Figure 1. **A** *Average purity and* **B** *average yield of DNA purified from whole blood samples from 30 healthy donors.*

High-Molecular-Weight DNA after Storage at 2–8ºC

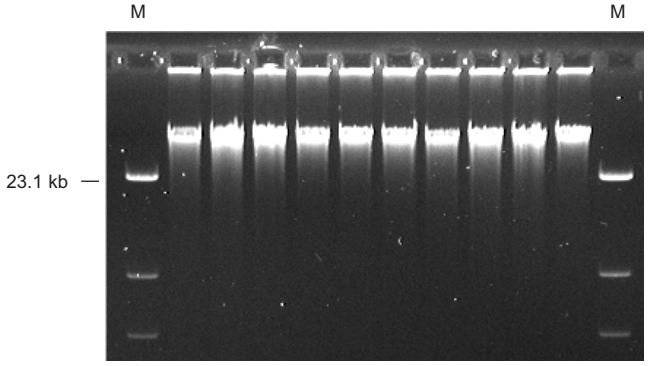

Figure 2. *Agarose gel analysis of 400 ng DNA (0.5% agarose gel, 1 x TAE buffer, 23 V, 16 h; for optimal separation of high-molecular-weight DNA) purified from blood samples from 10 donors after storage in PAXgene Blood DNA Tubes for 28 days at 2–8°C.* ***M****: Marker.*

PCR after Storage at 2–8ºC

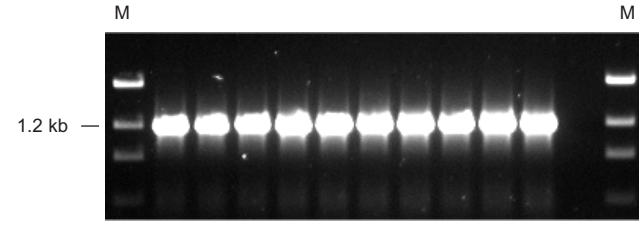

Figure 3. *Amplification of a 1.1 kb fragment of the single-copy gene Hugl. DNA was purified from blood samples from 10 donors after storage in PAXgene Blood DNA Tubes for 28 days at 2–8°C.* ***M****: Marker.* ***Note****: The same donors were used to generate samples for both Figures 2 and 3.*