PreAnalytiX
A QIAGEN / BD Company

Technical Notes

Storage of Blood Samples Collected into PAXgene™ Blood DNA Tubes at 30°C

Human whole blood samples from 20 donors (five samples per donor, 100 samples total) were drawn into PAXgene Blood DNA Tubes and stored at 30°C for up to 7 days.

Duplicate samples from each donor were immediately processed (t_0). Remaining samples were stored at 30°C. A single sample from each donor was processed after storage for 1 (t_1), 3 (t_3), and 7 days (t_7). 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, 100 blood samples (40 at day 0, and 20 at days 1, 3, and 7) 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 decreased slightly from 347 µg on day 0 to 254 µg after blood storage for 7 days at 30°C. DNA purity remained high in all samples tested, and the A_{260}/A_{280} ratio of all 100 blood samples was 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 7 days storage at 30ºC 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 7 days at 30ºC using the PAXgene Blood DNA System.

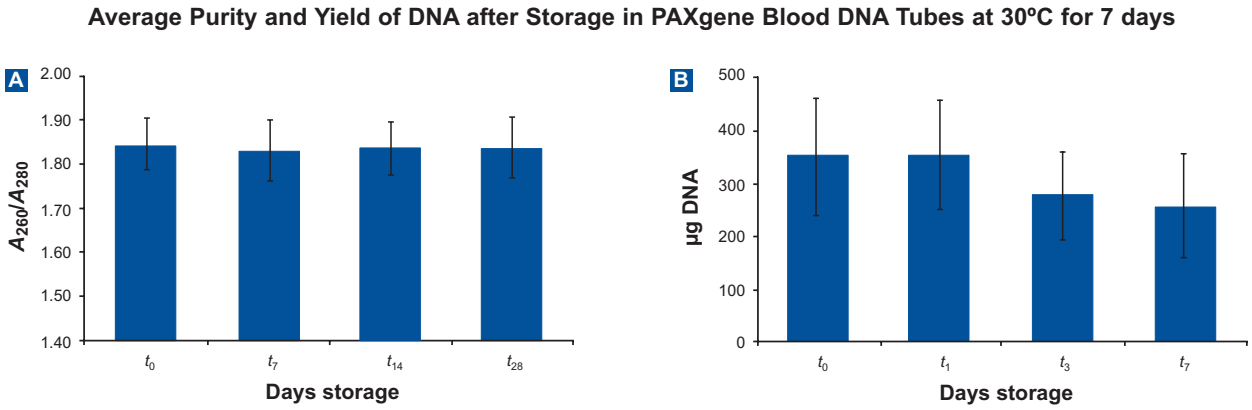

Figure 1. A *Average purity and* B *average yield of DNA purified from whole blood samples from 20 healthy donors.*

High-Molecular-Weight DNA after Storage at 30ºC

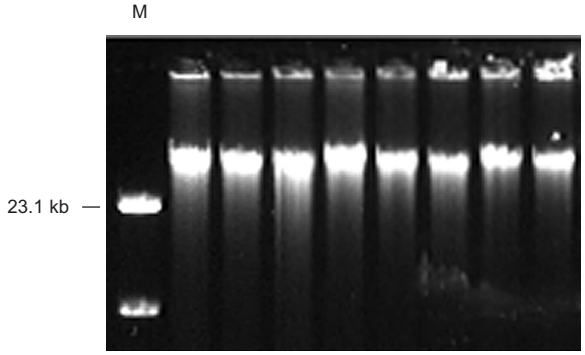

Figure 2. *Agarose gel analysis of 400 ng DNA (0.5% agarose gel, 1 x TAE buffer, 23 V, 16 h; for optimal separation of high-molecular-weight DNA) purified from blood samples from 8 donors after storage in PAXgene Blood DNA Tubes for 7 days at 30ºC.* ***M****: Marker.*

PCR after Storage at 30ºC

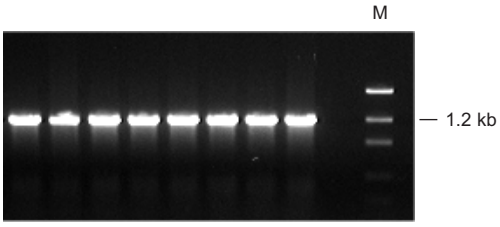

Figure 3. *Amplification of a 1.1 kb fragment of the single-copy gene Hugl. DNA was purified from blood samples from 8 donors after storage in PAXgene Blood DNA Tubes for 7 days at 30ºC.* ***M****: Marker.* ***Note****: The same donors were used to generate samples for both Figures 2 and 3.*