

Storage at -20°C of Blood Samples Collected into PAXgene™ Blood DNA Tubes

Human whole blood samples from 30 donors were drawn into PAXgene™ Blood DNA Tubes (3 samples per donor, 90 samples in total). Two samples from each donor were immediately subjected to DNA purification (t_0). The remaining sample from each donor was frozen and stored horizontally in a plastic bag at -20°C for 10 weeks, thawed at 37°C for 15 minutes, inverted 10 times, and subjected to DNA purification ($t_{10\text{ weeks}}$). The PAXgene Blood DNA Kit was used to purify DNA from all samples. Each purified DNA sample was dissolved in 1 ml Buffer BG4 (resuspension buffer).

In total, 90 blood samples (60 at day 0, and 30 at 10 weeks) were processed. Yield and purity of DNA samples were analyzed by measuring absorbance at 260 and 280 nm (Figure 1). The average DNA yield remained unchanged within statistical limits, with 350 μg on day 0, and 329 μg after 10 weeks at -20°C . DNA purity remained high in 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* (human homolog of giant larvae). Agarose gel analysis showed that after 10 weeks of storage at -20°C , DNA samples ran quantitatively above a 23 kb marker (Figure 2). In addition, a 1.1 kb fragment of the human single-copy gene *Hugl* was amplified from all DNA samples (Figure 3).

Average Purity and Yield of DNA after Storage of PAXgene Blood DNA Tubes at -20°C for 10 Weeks

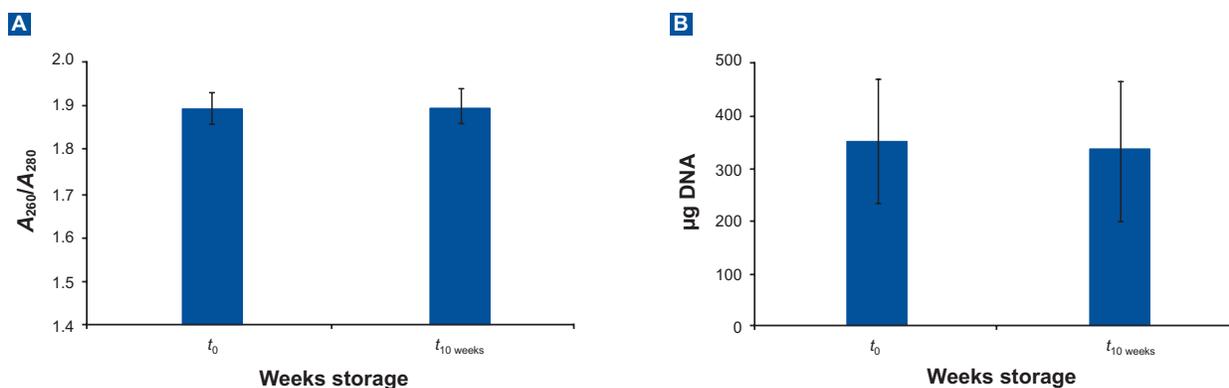


Figure 1. **A** Average purity and **B** average yield of DNA purified from whole blood samples from 30 healthy donors. **Note:** The large standard deviations of DNA yield are due to the normal donor-to-donor variability of nucleated cell counts.

Conclusion: High-quality, highly concentrated genomic DNA can be isolated after storage of PAXgene Blood DNA Tubes for up to 10 weeks at -20°C using the PAXgene Blood DNA Kit.

High-Molecular-Weight DNA after Blood Storage at -20°C for 10 Weeks

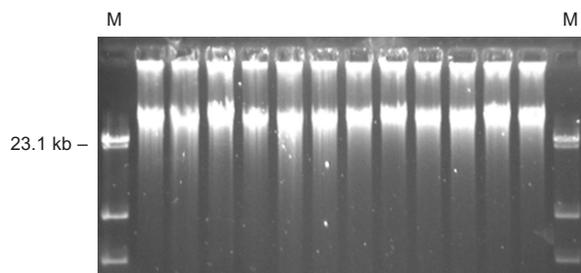


Figure 2. Agarose gel analysis of 400 ng DNA (0.5% agarose gel, 1x TAE buffer, 23 V, 16 h; for optimal separation of high-molecular-weight DNA) purified from blood samples from 12 donors after storage in PAXgene Blood DNA Tubes for 10 weeks at -20°C . **M:** marker.

Successful PCR after Blood Storage at -20°C for 10 Weeks

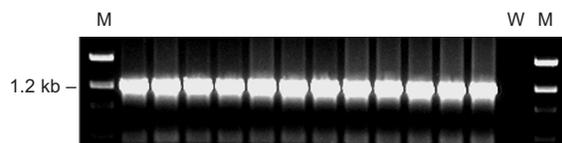


Figure 3. Amplification of a 1.1 kb fragment of the single-copy gene *Hugl*. DNA was purified from blood samples from 12 donors after storage in PAXgene Blood DNA Tubes for 10 weeks at -20°C . **M:** marker; **W:** water control. **Note:** The same donors were used to generate samples for both Figures 2 and 3.

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The PAXgene Blood DNA System is for research use only and not for use in diagnostic procedures.