

## Transportation Study with Blood Samples Collected into PAXgene™ Blood DNA Tubes

**Experimental design:** Human whole blood samples from 8 different donors were drawn into PAXgene Blood DNA Tubes (4 samples per donor, 32 samples in total) and transported on a truck with a parcel service crosswise through Germany at ambient temperatures. Temperature during transportation was monitored with a data logger (Testostor 175, Testo AG) placed in direct contact with the blood samples.

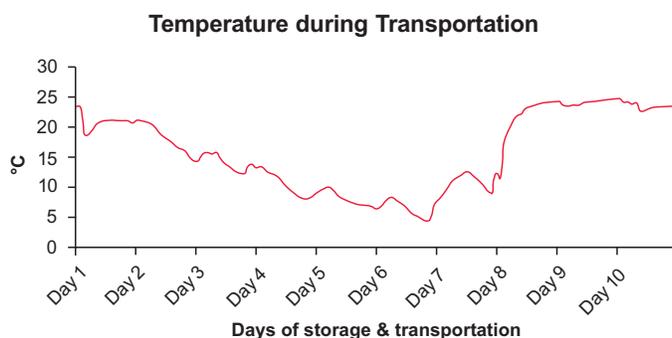
Four replicates from each donor were processed after 10 days of transportation. Samples were processed using the PAXgene Blood DNA Kit according to the standard protocol. The DNA was dissolved in 1 ml Buffer BG4 (resuspension buffer).

**Analytical methods:** In total, 32 blood samples from 8 different donors were analyzed. Yield and purity of DNA samples were analyzed by measuring the absorbance at 260 and 280 nm. In addition the 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 homologue of giant larvae).

**Results:** Temperatures during transport ranged from 23.4°C at day 1 to 4.4°C at day 7 and up to 24.7°C at day 9 (Figure 1). The average DNA yield from the 32 samples (8 donors, 4 replicates per donor) was 230 µg. DNA yields were between 155 and 342 µg (Figure 2A). DNA purity remained high in all samples tested, as indicated by an  $A_{260}/A_{280}$  ratio between 1.8 and 2.0 (Figure 2B).

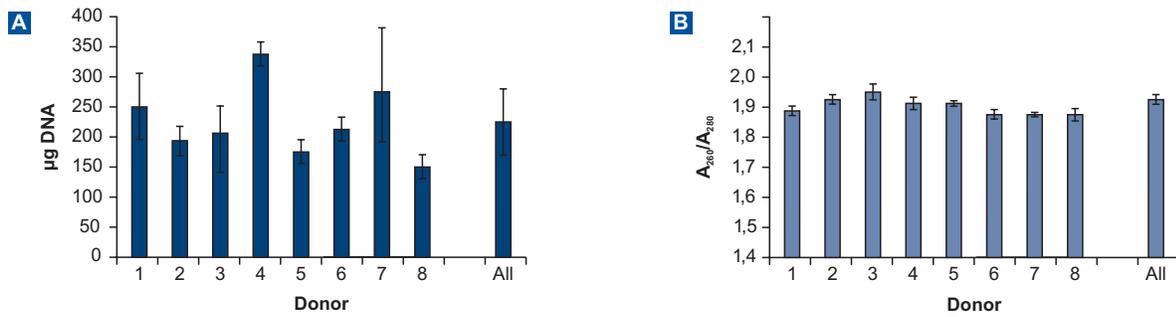
Agarose gel analysis showed that the purified DNA is of high molecular weight, even after 10 days transport at ambient temperatures (Figure 3). In addition, a 1.1 kb fragment of the human single-copy gene *Hugl* was successfully amplified from all DNA samples (Figure 4).

**Conclusion:** High-quality, highly concentrated genomic DNA can be isolated from blood samples after transportation for up to 10 days at ambient temperatures using the PAXgene Blood DNA System.



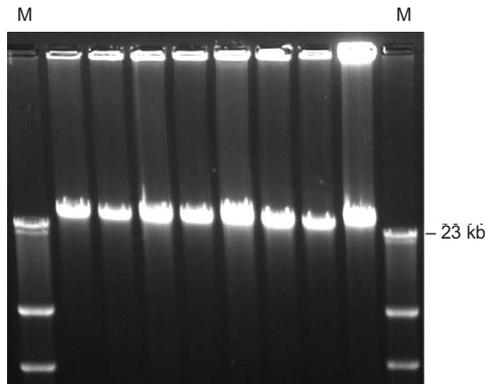
**Figure 1.** Temperature measured by data logger during days 1–10 of transportation.

### Average Yield and Purity of DNA after Transportation in PAXgene Blood DNA Tubes



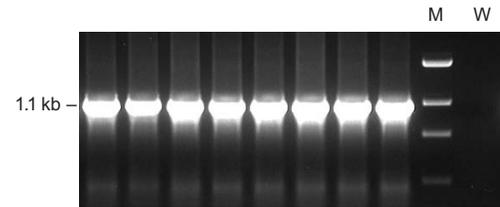
**Figure 2.** **A** Average yield and **B** average purity of DNA purified from blood samples from 8 donors, 4 replicates per donor after transportation for 10 days at ambient temperatures.

### High-Molecular-Weight DNA after Transportation



**Figure 3.** Agarose gel analysis (0.7% agarose gel, 1x TAE buffer, 40 V, 13 hours, for optimal separation of high-molecular-weight DNA) of approx. 400 ng DNA purified from blood samples from 8 different donors after transportation in PAXgene Blood DNA Tubes for 10 days at ambient temperatures. **M**: markers.

### Successful PCR after Transportation



**Figure 4.** Amplification of a 1.1 kb fragment of the single-copy gene *Hugl*. DNA was purified from blood samples from 8 different donors after transportation in PAXgene Blood DNA Tubes for 10 days at ambient temperatures. **M**: markers; **W**: water control.

### Trademarks and disclaimers

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

The PCR process is covered by U.S. Patents 4,683,195 and 4,683,202 and foreign equivalents owned by Hoffmann-La Roche AG.

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