

New

LabelStar™ Array Kit — efficient cDNA labeling and cleanup for high signal-to-noise ratios on arrays

- ◆ **High signal intensity and low background** — identification of true positives at low expression levels
 - ◆ **Labeling using a wide range of RNA amounts** — from just 0.2 µg to 50 µg RNA
 - ◆ **Flexibility in choice of label** — incorporation of any commonly used modified nucleotide
 - ◆ **Optimized labeling and cleanup procedures** — reproducible, high-quality results
 - ◆ **A fast and easy system** — reliable performance
- ▶▶ **New LabelStar Array Kit, page 8**



Coming soon!

PAXgene™ Blood DNA System — a standardized system for blood collection and genomic DNA isolation

- ◆ **Integrated, standardized system** — blood collection, transport, and storage, with DNA purification in one system
 - ◆ **Convenient storage** — blood can be stored in PAXgene™ Blood DNA Tubes for up to 10 days at room temperature before DNA purification
 - ◆ **Enhanced workflow efficiency**
 - ◆ **Easy handling** — purification in a single tube minimizes the risks of sample mix-up and cross-contamination, and reduces plasticware consumption
 - ◆ **Rapid** — only 1 hour of hands-on time for DNA purification from 12 samples
 - ◆ **High yields of pure, high-molecular-weight DNA** — up to 500 µg of DNA from each sample
- ▶▶ **PAXgene Blood DNA System, page 17**

continued from page 1

PreAnalytiX introduces the PAXgene Blood DNA System, an integrated and standardized system for collection of whole blood specimens and isolation of their genomic DNA. Blood is collected into PAXgene Blood DNA Tubes, which contain a proprietary blend of reagents that both prevents blood coagulation and stabilizes white blood cells. DNA is isolated from the tubes using the PAXgene Blood DNA Kit, which includes all buffers and reagents required for purification of high-quality genomic DNA.

High Quality and High Molecular Weight of Genomic DNA

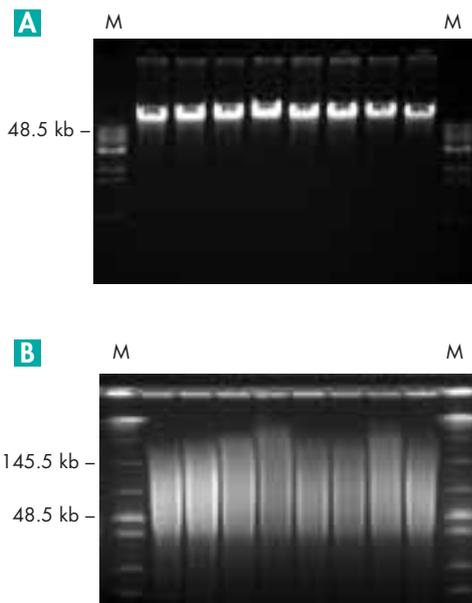


Figure 1 Genomic DNA isolated from 8 blood donors using the PAXgene Blood DNA System. **A**: Agarose gel analysis; **B**: pulsed-field gel electrophoresis for enhanced separation of high-molecular-weight genomic DNA. **M**: markers.

Simple, standardized procedure

Blood samples (8.5 ml) are collected into PAXgene Blood DNA Tubes. Tubes can be processed immediately, transported, or stored for up to 10 days at 18–22°C. For DNA isolation, the blood is transferred to processing tubes (supplied already filled with cell lysis buffer), and the solution is mixed to lyse red and white blood cells. Cell nuclei and mitochondria are pelleted by centrifugation, washed, and resuspended in digestion buffer. Protein contaminants are removed by incubation with a protease. DNA is precipitated in isopropanol, washed in 70% ethanol, dried, and resuspended in resuspension buffer.

High quality and yield of genomic DNA

DNA isolated using the PAXgene Blood DNA System has an A_{260}/A_{280} ratio of 1.7–1.9. It ranges from 20 to 200 kb in size, with an average length of 50–150 kb (Figure 1). Average DNA yields are 150–500 µg, depending on the number of nucleated cells present in the blood sample (Figure 2).

Efficient performance in downstream applications

Use of the PAXgene Blood DNA System provides DNA that can be used directly in sensitive downstream applications. For example, using only 5 ng of DNA template provided successful amplification of a single-copy gene fragment (Figure 3). Use of the QuantiTect™ Probe PCR Kit with the ABI PRISM® 7700 led to successful SNP analysis (Figure 4). Using the QIAGEN® Multiplex PCR Kit (available soon), 3 mitochondrial genes were successfully amplified in one assay (Figure 5).

Efficient Amplification of a Single-Copy Gene

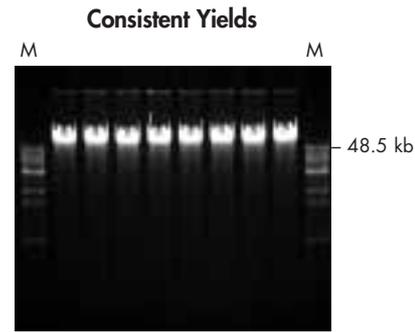


Figure 2 Eight replicates of DNA isolated from one blood donor. 400 ng of DNA was loaded in each lane. Mean yield was 251.4 µg (SD 12.7 µg) DNA. **M**: markers.

SNP Genotyping in the Cytochrome P450 Gene CYP2C19

Donor	Genotype
1	AL 1
2	AL 1
3	AL1 + AL 2
4	AL1 + AL 2
5	AL1
6	AL1
7	AL1 + AL 2
8	AL1

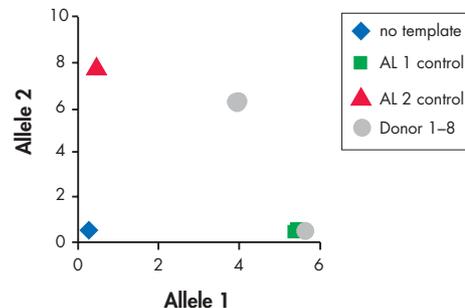


Figure 4 Allelic discrimination assay using the QuantiTect Probe PCR Kit and a TaqMan® assay. Allele 1: CYP2C19*1; allele 2: CYP2C19*2.

Efficient Multiplex PCR of 3 Mitochondrial Genes

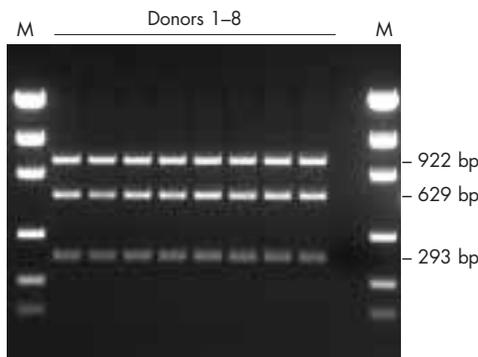


Figure 5 Multiplex PCR of fragments from the mitochondrial genes *rRNAlys/ATPase* (0.92 kb), *rRNAleu(UUR)* (0.63 kb), and *ND4* (0.29 kb), using 250 ng DNA from the donors 1–8 in Figure 1 as starting material.

Discussion

Clinical applications, including pharmacogenomic studies, gene expression studies, and SNP genotyping, yield clinically important data that may directly affect patients' treatment regimes. Consequently, use of standardized methods for sample collection and nucleic acid isolation are of increasing importance. The PAXgene Blood DNA System provides an efficient method for standardized blood collection, transport, storage, and isolation of genomic DNA. High yields of pure DNA are obtained that perform well in sensitive downstream applications. ■

Ordering Information

Product	Contents	Cat. No.
PAXgene Blood DNA Kit (25)*	Processing tubes and buffers for 25 preparations	761133
PAXgene Blood DNA Validation Kit (10)*	Processing tubes and buffers for 10 preparations plus 10 PAXgene Blood DNA Tubes	761132
PAXgene Blood DNA Tubes (100)*	100 PAXgene Blood DNA Tubes	761115,† 761125‡

* For research use only. Not for use in diagnostic procedures.

† USA and Canada

‡ All other countries