

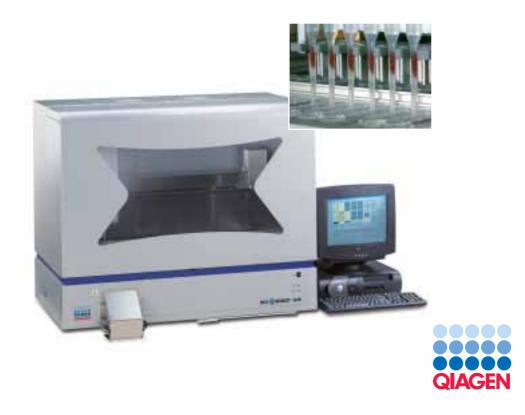
APPLICATION NOTE

Functional yields of DNA from blood with varying white cell counts using the BioRobot® M48 workstation and MagAttract® technology

The white cell count of whole blood samples can vary greatly between different individuals according to age, sex, immune status, and many other factors, and can influence DNA yield. This inherent variation creates a need for reproducible purification technologies that are sufficiently robust to give usable yields of high-quality DNA from blood with a range of white cell counts. This study records the yield of MagAttract[®] * purified DNA from whole blood samples taken from different donors, purified using the BioRobot[®] M48 workstation.

Materials and methods

Automated DNA isolations were performed on EDTA-preserved whole blood samples from 6 and 8 different donors using the MagAttract DNA Blood Mini M48 Kit and MagAttract DNA Blood Midi M48 Kit, respectively. Donors with variable, though typical, cell counts were used. Purification was fully automated using the BioRobot M48 workstation. Each sample was purified in triplicate. Samples were eluted in 200 µl RNase-free water, and DNA was quantified by absorbance (A₂₆₀) measurement adjusted for background.



Results

Average yields for each sample donor are shown (Figures 1 and 2). The figures show the relationship between yield and white blood cell count. In general, increased white blood cell count gives increased DNA yields. The 200 μ l Blood protocol yielded 3.87–6.17 μ g DNA, while the 350 μ l Blood protocol yielded 4.88–11.23 μ g DNA.

DNA Yield from Different Donors (200 µl Sample)

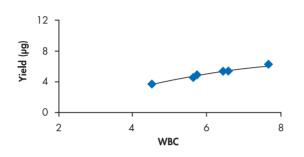


Figure 1. 200 µl blood samples. Each data-point shows the average yield from each sample donor.

DNA Yield from Different Donors (350 µl Sample)

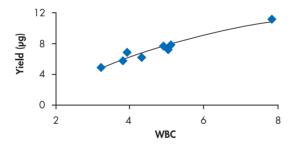


Figure 2. 350 µl blood samples. Each data-point shows the average yield from each sample donor.

Conclusions

The results clearly show that MagAttract technology in combination with the BioRobot M48 workstation gives DNA yields appropriate for a wide range of downstream applications — even using blood samples with a range of white cell counts.

Ordering Information

		JTOMATIO
Ordering Information Product	Description	Order No.
BioRobot M48 workstation	Robotic workstation for automation of magnetic-particle purification technology	9000708
NagAttract DNA Blood Mini M48 Kit (192)*	MagAttract Suspension and reagents for purification of genomic DNA from 200 µl whole blood samples using the BioRobot M48 workstation	951336
MagAttract DNA Blood Midi M48 Kit (192)*	MagAttract Suspension and reagents for purification of genomic DNA from 350 µl whole blood samples using the BioRobot M48 workstation	951356

The BioRobot M48 is intended as a microtiter diluting and dispensing device. No claim or representation is intended for its use in identifying any specific organism or for a specific clinical use (diagnostic, prognostic, therapeutic, or blood banking). It is the user's responsibility to validate the performance of the BioRobot M48 for any particular use, since its performance characteristics have not been validated for any specific organism. The BioRobot M48 may be used in clinical diagnostic laboratory systems after the laboratory has validated their complete system as required by CLIA '88 regulations in the U.S. or equivalents in other countries.

* MagAttract Kits are intended as general-purpose devices. No claim or representation is intended for their use to identify any specific organism or for specific clinical use (diagnostic, prognostic, therapeutic, or blood banking). It is the user's responsibility to validate the performance of MagAttract Kits for any particular use, since the performance characteristics of these kits have not been validated for any specific organism.



Contact QIAGEN today to discover more about reliable yields of DNA from blood

QIAGEN Robotic Systems are not available in all countries; please inquire.

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. Trademarks: BioRobot®, MagAttract®, QIAGEN®, (QIAGEN Group).

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