

Quickpure Blood gDNA extraction kits

Application Note



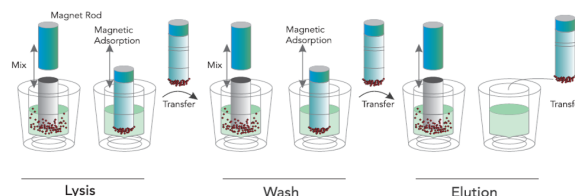
Isolation of genomic DNA from 200ul blood samples on Automated Extraction Platforms

The isolation of genomic DNA from whole blood samples is an initial and crucial step for various diagnostic workflows. Clinical applications such as testing for genetic markers, HLA typing, biomarker discovery, newborn screening, and sequencing are widely performed in laboratories worldwide.

Sensitivity and performance of biomolecular detection methods like qPCR, next-generation sequencing, and microarrays, are constantly improving. But these platforms require extraction of nucleic acids from the sample prior to processing.

The Quickpure® Blood gDNA Extraction Kit from Cambrian Bioworks is designed for rapid, high-throughput isolation of high-quality genomic DNA. The kit uses CamBeads® magnetic bead technology, ensuring reproducible recovery of PCR-ready DNA suitable for a broad range of applications.

With starting material of 200 µL of whole blood (fresh or frozen, EDTA or citrate treated), the extraction protocol allows for use in a 16 reaction and in 96 reaction formats employed by established table-top extraction platforms like Kingfisher Flex, Kingfisher Duo and Zybion EXM 3000.



Quickpure Blood gDNA Kit

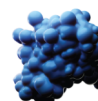
Technology	Magnetic Bead Based
Sample Type	≤ 200 µL whole blood (fresh or frozen, EDTA or citrate treated)
Typical Yield	4 - 8 µg (200 µL blood; depending on sample quality)
Elution Volume	50 - 100 µL

Materials and Methods:

Whole blood (fresh, frozen, treated with EDTA or citrate) is lysed with a Pretreatment Lysis Buffer and Proteinase K. Following lysis incubation, binding of DNA to Cambrian's CamBeads is achieved in the presence of a Binding Buffer on the automation.



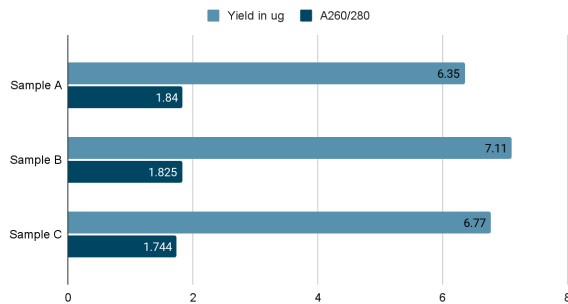
Subsequent DNA isolation is performed on the automation platform Kingfisher® Duo or Flex, or the Zybion EXM 3000. The isolation principle is based on reversible adsorption of nucleic acids to paramagnetic Cambeads under appropriate buffer conditions.



Zybio Extractions

Three blood samples from different sources were collected in an EDTA Vacutainer and processed using Cambrian quickoure DNA isolation kit on a kingfisher flex system. Fig 2.0

Cambrian Quickpure's Performance on automated extractors



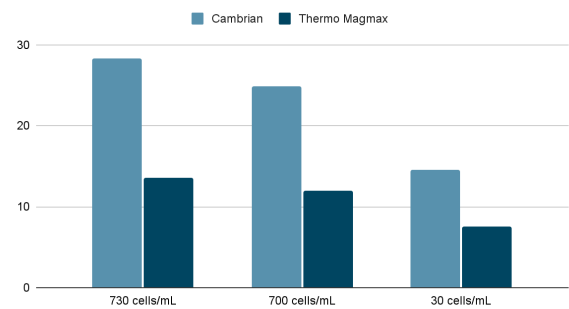
A260/280 and concentration values are measured using a Qubit instrument.

	Conc. (ng/uL)	A260/280	Yield (ug)
Sample A	63.5	1.84	6.35
Sample B	71.1	1.825	7.11
Sample C	67.7	1.744	6.77

Low WBC sample studies on a Kingfisher Platform:

The Cambrian Blood gDNA Kit was validated on the Kingfisher Duo platform at a validation partners site where samples were being tested for beta-thalassemia mutations. This lab routinely receives samples from patients who have a WBC count of less than 800. The Cambrian kit was evaluated in a head to head comparison with a Thermo MagMax Kingfisher Duo kit.

Concentration of DNA isolated in ng/ul - Fig 1.0



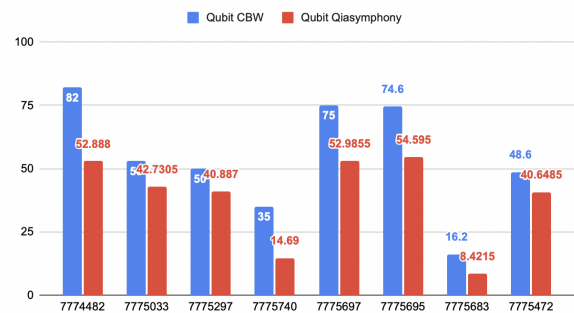
Cambrian Quickpure's performance compared with ThermoFisher Magmax in DNA isolation protocols using blood

Below results compare the concentration of the DNA isolated in ng/ul measured using a Nanodrop One instrument. (Fig 1.0)

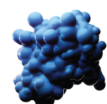
Three different samples with varied cell count were analysed using a Sysmex XN-350 to determine the cell count per ml.

Performance Comparison against Qiagen Qiasymphony:

Magbead Manual vs QiaSymphony Qbit concentrations (ng/uL)



The above data represents the concentration of the DNA eluted by Cambrians Blood gDNA kit applied on a magnetic stand system and compares it against the DNA eluted from Qiagen's Qiasymphony system. All the measurements were performed on a Qubit spectrophotometer manufactured by Invitrogen.



Ordering Information

Quickpure Blood gDNA ZB-32	For Zybion Exm3000 series machines
Quickpure Blood gDNA KF-96	For Kingfisher Flex 96-well format
Quickpure Blood gDNA Mini	For mini spin columns based extractions
Quickpure Blood gDNA Midi	For midi spin columns based extractions



Cambrians Quickpure Blood gDNA extraction kit for Kingfisher flex and Zybion platforms are supplied along with compatible 8-Tip and 96-Tip combs and pre-filled buffers accordingly.

Performance using a manual Magnetic stand based extraction protocol:

Cambrians Blood gDNA kit powered by CamBeads can be used on an automated extraction platform or a magnetic stand based system for manual extraction protocols

Magstation-2



CamBeads Si

For more information about the protocols visit the following page:

<https://cambrianbioworks.com/product/dna-isolation-kit-for-kingfisher-flex/>

For free samples and demo requests:

<https://cambrianbioworks.com/free-product-samples/>

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