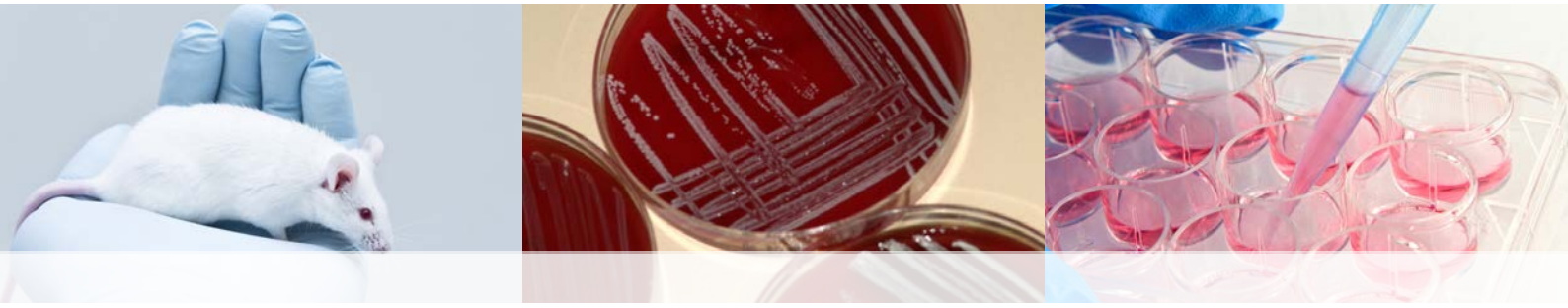
MACHEREY-NAGEL

NucleoMag® Tissue

Automated purification of genomic DNA from tissue or cells on the platform KingFisher® Flex.



Introduction

The efficient isolation of genomic DNA from a wide range of tissue samples or cells is essential for subsequent molecular biological applications in e.g., research laboratories. MACHEREY-NAGEL designed the NucleoMag® Tissue kit for the rapid and automated parallel purification of genomic DNA from tissue samples or cells in a 96-well format. The obtained DNA of pure and high quality can be used directly as template for PCR, NGS, blotting, or any kind of enzymatic reactions. Our optimized protocol on the KingFisher® Flex automation platform allows the processing of 96 samples within 25 minutes.

Products at a glance

NucleoMag® Tissue	
Technology	Magnetic beads
Sample material	< 20 mg tissue; < 10^6 cells; bacterial pellets
Preparation time	Approx. 25 min on KingFisher® Flex for 96 samples (excl. lysis)
Typical yield	10–20 µg (20 mg tissue)
Elution volume	50–200 µL
Binding capacity	0.4 µg / µL beads

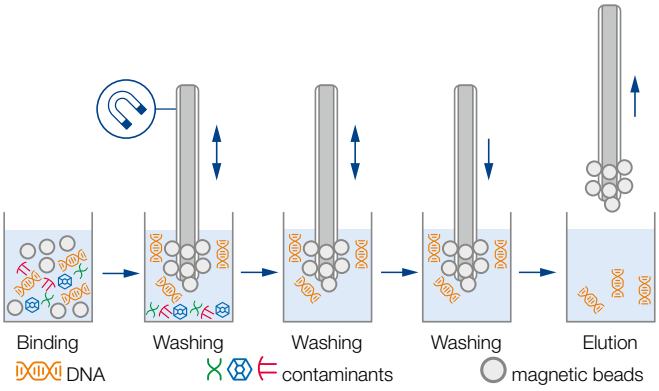
King Fisher® Flex	
Sample volume	20–5000 µL
Elution volume	20–100 µL
Capacity (samples per run)	24 / 96 (8 plates per deck)
Heating / cooling	4–96 °C
Size / weight	60 x 38 x 68 cm / 28 kg
Special features	Included NucleoMag® protocols * Individual and easy programming for your needs

* Instruments exclusively in Germany (D) Austria (A) Switzerland (CH).

Material and methods

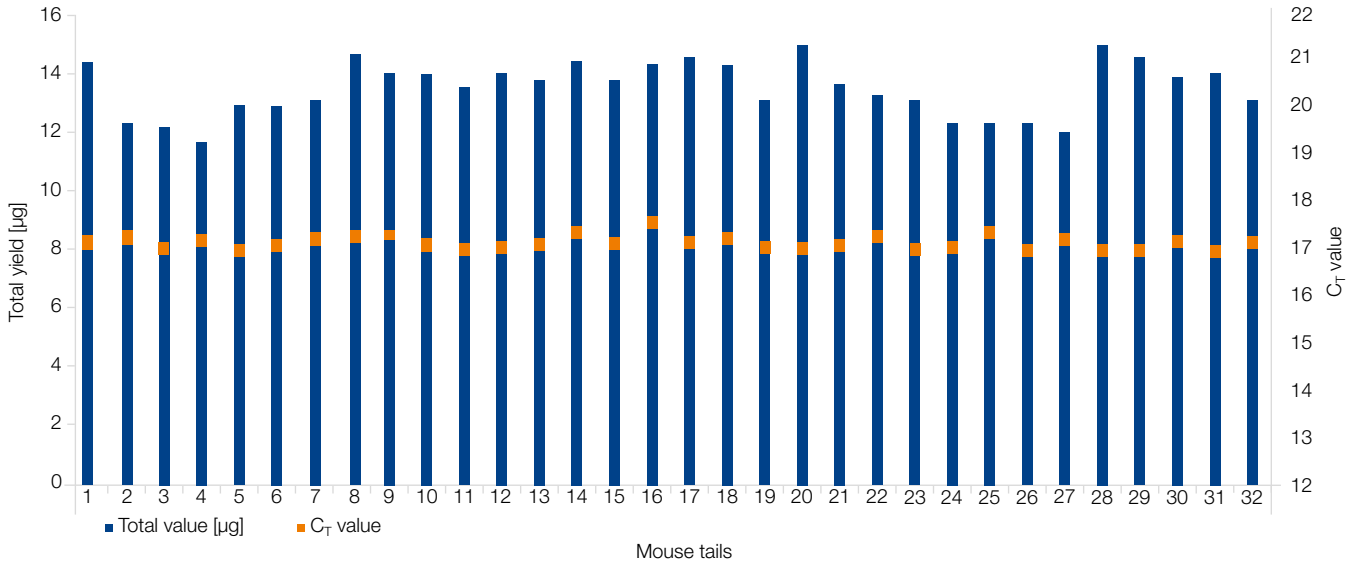
Samples from up to 20 mg tissue, 1 x 10^6 cells or bacterial pellet are lysed with Buffer T1 and Proteinase K for 1–16 h at 56 °C. Lysis incubation time depends on sample type (check the NucleoMag® Tissue kit protocol for more detailed informations). After initial lysis, the following steps are automated on the KingFisher® Flex platform.

Subsequent DNA isolation is performed on the automation platform KingFisher® Flex. The isolation principle is based on reversible adsorption of nucleic acids to paramagnetic beads under appropriate buffer conditions.



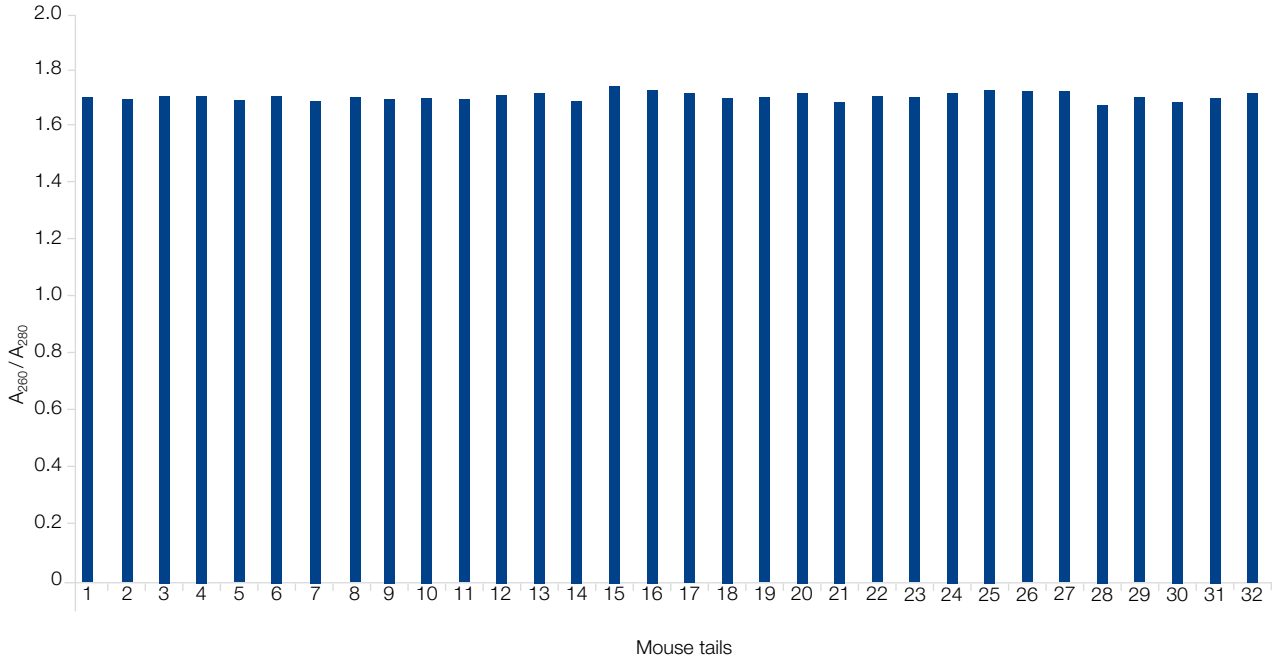
Binding of DNA to the NucleoMag® B-Beads is achieved by the provision of Binding Buffer MB2. After magnetic separation, the NucleoMag® B-Beads are washed to remove contaminants and salts using three different wash buffers (MB3, MB4, and MB5). Highly pure genomic DNA is finally eluted under low ionic strength conditions in a slightly alkaline elution buffer (MB6).

Application Data



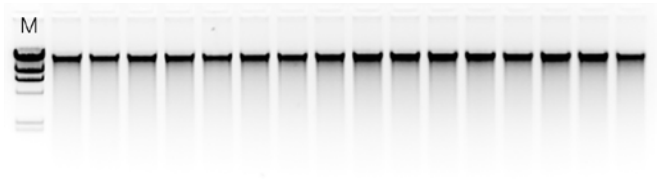
Automated isolation of genomic DNA from mouse tail samples

DNA was isolated from 32 mouse tail samples (20 mg) using the NucleoMag® Tissue kit on a KingFisher® Flex platform. The total yield was determined by UV spectrometry (dark blue bars). A subsequent qPCR analysis (orange squares) was performed with a Taqman® Probe for a GAPDH amplicon using the SensiFast™ Probe Lo-ROX kit from Bioline on an Applied Biosystems® 7500 Real-Time PCR System. The comparable results demonstrate consistent high gDNA yield for all tested mouse tail samples.



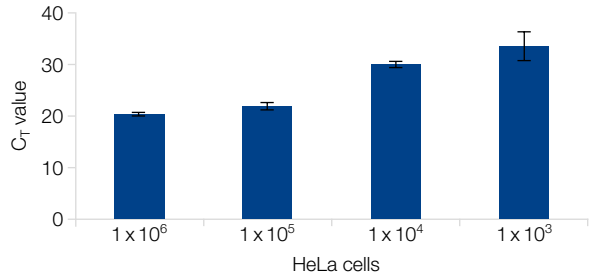
Purity of isolated genomic DNA from mouse tail samples

DNA was isolated from mouse tail samples (20 mg) (n=32) using the NucleoMag® Tissue kit on a KingFisher® Flex platform. The purity was determined by UV spectrometry resulting into an average A_{260}/A_{280} value of 1.69 ± 0.1 (dark blue bars).



Integrity of isolated nucleic acids from mouse tail samples

The integrity of the isolated nucleic acids from exemplary mouse tail samples was analyzed by gel electrophoresis (5 µl per eluate; 0.7 % TAE gel; M: Lambda DNA/Hind III – Thermo Scientific).



Isolation of genomic DNA from HeLa cells

DNA was isolated from different amounts of HeLa cells using the NucleoMag® Tissue kit on a KingFisher® Flex platform. A subsequent qPCR analysis (dark blue bars) was performed with a Taqman® Probe for a 250 bp ß-actin amplicon using the SensiFast™ Probe Lo-ROX kit from Bioline on an Applied Biosystems® 7500 Real-Time PCR System. The qPCR results demonstrate a reliable detection of gDNA, even for low amounts of cells.

Automate your gDNA extraction from tissue samples and cells

MACHEREY-NAGEL delivers a ready-to-go solution for your high throughput DNA extraction. We adapted the NucleoMag® Tissue procedure on instruments of the KingFisher® series to speed up your nucleic acid purification workflow.

- Reliable performance and excellent yields from various different sample material
- Speed up your gDNA extraction by processing of 96 samples in less than 30 minutes (excluding lysis)
- Purchase the ultra fast KingFisher® Flex platform and optimized MACHEREY-NAGEL extraction kits from one single source (one stop shopping**)

Ordering information

Product	Specifications	Preps	REF
NucleoMag® Tissue	Kit based on magnetic bead technology for the isolation of genomic DNA from tissue samples	1 x 96	744300.1
		4 x 96	744300.4
		24 x 96	744300.24
KingFisher® Accessory Kit A	1 set KingFisher® Deep-well Block, Deep-well Tip Combs, Elution Plates, for 4 x 96 preps of NucleoMag® Tissue using KingFisher® Flex platform	4 x 96	744950
KingFisher® Flex	Instrument** for magnetic bead based nucleic acid extraction in 96-well and 24-well plate format pre-programmed with NucleoMag® protocols	8 x 12	744952

*For use on KingFisher® Flex, KingFisher® 96, MagMAX™ Express Magnetic Particle Processors

**Distribution Instrument exclusively in Germany (D), Austria (A) and Switzerland (CH).

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