Bioanalysis

MACHEREY-NAGEL

High Throughput Processing Guide

Tailored solutions for parallel processing of multiple samples

High throughput (HTP) processing with MACHEREY-NAGEL

- Products for DNA, RNA, and protein purification
- Flexible formats
- Direct support from technical experts

MN Since 1911

MACHEREY-NAGEL HTP Kit Finder

Plasmid Purification	NucleoSpin® 8 / 96 Plasmid	NucleoSpin® 96 Plasmid Transfection-grade	NucleoBond® 96 Xtra EF	NucleoSpin® 96 Flash
Transfection of sensitive cells			■	
Transfection of common cells		■	■	
Cloning and sequencing	■	■	■	
Large constructs				■
Page	8	8	9	9

Plasmid Purification

Plasmid DNA is used in applications like transfection, cloning, or sequencing. MACHEREY-NAGEL has developed high-quality products for plasmid purification to match individual customer requirements.

- Unique purification technologies combined with application-driven buffer chemistries
- Direct suitability for downstream applications like transfection, cloning, or sequencing
- Patented endotoxin-removal technology

Clean-up and Size Selection	NucleoSpin® 8 / 96 PCR Clean-up	NucleoFast® 96 PCR	NucleoMag® NGS Clean-up and Size Select
Gel and PCR clean-up	■	■	
Challenging enzymatic reactions	■		■
High speed purification		■	
Small fragments < 150 bp	■		
NGS compatibility			■
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Clean-up and Size Selection

PCR enzyme-specific buffer solutions can be harmful in downstream applications. Clean-up products from MACHEREY-NAGEL are designed to remove all disruptive factors.

- Efficient removal of residues like unincorporated dNTPs, primers, enzymes, salts, and short-failed PCR products
- Special products for fast processing or recovery of small fragments
- Clean-up and size selection for Next Generation Sequencing (NGS) with all common NGS platforms

MACHEREY-NAGEL HTP Kit Finder

Body Fluids

DNA and RNA are frequently purified from body fluids to perform prenatal diagnostics, cancer classification, or pathogen screening. These nucleic acids need to be purified directly from the patient or from genetically foreign material within a sample taken from the patient (e.g., pathogens, tumors). Unique liquid sample materials generate special requirements for HTP nucleic acid purification.

- Large volume processing for maximal sensitivity
- Inhibitor removal for direct input into downstream applications
- Compatibility with all common sample materials
- Quick procedures support fast diagnoses

Body Fluids	NucleoSpin® 8 / 96 Blood	NucleoSpin® 8 / 96 Blood QuickPure	NucleoSpin® Blood L Vacuum	NucleoSpin® 8 / 96 RNA Blood	NucleoMag® Blood 200 µL	NucleoSpin® 8 / 96 Virus	NucleoMag® Virus	NucleoSpin® 96 DNA Plasma	NucleoSpin® DNA Plasma Midi
RNA				■		■	■		
DNA	■	■	■		■	■	■	■	■
cfDNA								■	■
Blood	■	■	■	■	■				
Plasma	■	■		■		■	■	■	■
Serum	■	■		■		■	■		
Urine				■	■	■	■		
Saliva	■		■		■	■	■		
Buffy coat		■		■					
Large volume			■				■		■
Fast procedure		■							
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MACHEREY-NAGEL HTP Kit Finder

Tissue and Cells

Nucleic acid purification from solid biopsies or cells is frequently used in routine diagnostics and academic laboratories to perform genotyping or to detect pathogens within an organism. It can be challenging to disrupt the plasma membranes of cells within a tissue in order to release DNA and RNA. MACHEREY-NAGEL has developed several tools to facilitate these applications.

- Special lysis buffer chemistry
- Compatibility with all common starting materials
- Supplementary protocols for challenging samples

Tissue and Cells	NucleoSpin® 8 / 96 Tissue	NucleoSpin® 8 / 96 RNA	NucleoMag® Tissue	NucleoMag® RNA	NucleoSpin® 96 DNA FFPE	NucleoMag® DNA FFPE	NucleoSpin® 96 Soil
DNA	■		■		■	■	■
RNA		■		■			
Common tissue and cells	■	■	■	■			
Tumor biopsies	■	■	■	■	■	■	
Stool							■
FFPE					■	■	
Swabs	■		■				
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MACHEREY-NAGEL HTP Kit Finder

 Veterinary Testing	NucleoMag® VET	NucleoSpin® 8 / 96 Virus	NucleoSpin® 8 / 96 Tissue
DNA	■	■	■
RNA	■	■	
Liquid biopsies	■	■	
Solid tissue	■		■
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Veterinary Testing

Nucleic acid purification for veterinary testing requires maximal flexibility since various sample materials from diverse species need to be processed to detect bacterial and / or viral nucleic acids with maximal sensitivity. These unique requirements were taken into account during the development of MACHEREY-NAGEL products for veterinary testing.

- Detection of trace amounts of viral or bacterial DNA/RNA
- Compatibility with a broad range of starting materials
- Compatibility with liquid and solid samples

 Environmental Testing	NucleoSpin® 8 / 96 Food	NucleoSpin® 96 Soil	NucleoSpin® 8 / 96 Plant II	NucleoMag® Plant
Soil		■		
Plant			■	■
Fungi			■	
Food and feed	■			
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Environmental Testing

Environmental testing means to process a broad range of sample types like plants, soil, or food. These include living organisms like plants or microbes in soil samples, but also samples like food that may exhibit an artificial protein structure after denaturation processes have been applied. Extracted DNA should be suitable for downstream applications such as screening for genetically modified organisms (GMOs), microbiome analyses, or sample purity analyses.

MACHEREY-NAGEL products for environmental testing are designed to overcome these challenges and to address the requirements of common downstream applications.

- Complete removal of inhibitors
- Adaptable lysis buffer chemistry
- Compatibility with processed samples

 Protein purification	Protino® 96 Ni-NTA	Protino® 96 Ni-IDA
High binding capacity	■	
Maximal purity		■
Native or denaturing purification	■	■
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Protein Purification

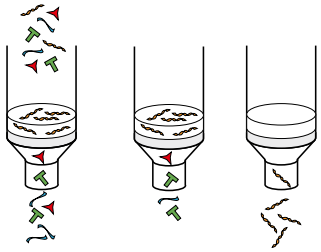
Expression and purification of proteins is a time-consuming undertaking. Products for protein purification should be error-safe and application orientated. Therefore they should be carefully chosen according to customer demands.

- High amount and purity
- High specificity
- Purification under native or denaturing conditions

Technologies

NucleoSpin® technology	
Technology	Silica-membrane
Principle	**Bind:** Interaction between DNA / RNA and silica membrane after reversible removal of the hydrate shell in presence of chaotropic salt **Wash:** Removal of contaminants with high salt and ethanol-containing wash buffer **Elute:** DNA / RNA is released from the membrane after recovery of the hydrate shell in the presence of low-salt buffer
Processing	• Vacuum • Centrifuge
Shape	• Maximum volume capacity is 1.4 mL/well • Optimized column outlets eliminate spray formation
Format	• 8-well strips for flexible medium throughput • 96-well plates for high throughput
Features	• High purity DNA / RNA • From medium to high throughput • No alcohol precipitation necessary • Easy-to-use
Requirements	Centrifugation • Microtiterplate centrifuge (bucket height: 85 mm*) • Centrifugal forces: 5,600–6,000 x g • For processing of 8-well strips, Starter Set C is required Vacuum processing • Pressure: > 100 mbar; Airflow: 1,800 L/h • Examples for compatible vacuum manifolds: NucleoVac 96 Vacuum Manifold (MN), QIAvac 96 (QIAGEN), Vac-Man® 96 (Promega) • For processing of 8-well strips, Starter Set A is required
Economy	NucleoSpin® Core Kits • Optimized for automation platforms • Contain consumables: binding plates, buffers, and enzymes • Additional consumables can be ordered separately
Safe processing	MN Wash Plate • Shields the bottom of the NucleoSpin® Binding Strips / Plates against contaminants

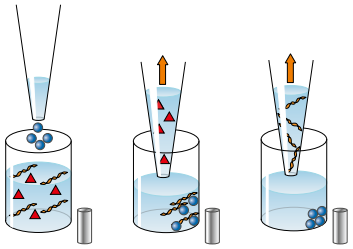
* Height depends on application. Please inquire with Technical Service.



NucleoBond® technology	
Technology	Anion-exchange chromatography
Principle	**Bind:** Negatively charged DNA binds to positively charged anion-exchanger material at low pH **Wash:** Wash at low pH **Elute:** Resolve DNA from anion-exchanger material at high pH
Processing	• Vacuum • Centrifuge
Format	96-well plates
Features	Ultra-pure, endoxin-free plasmid DNA
Requirements	As described for NucleoSpin® technology

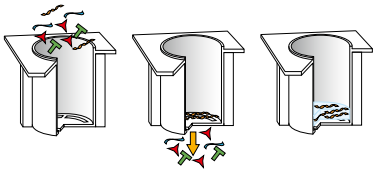
Technologies

NucleoMag® technology	
Technology	Superparamagnetic beads (non-silica) *
Format	Flexible
Principle	**Bind:** Interaction between DNA / RNA and beads after reversible removal of hydrate shell in presence of chaotropic salt **Wash:** Removal of contaminants with high salt and ethanol-containing wash buffer **Elute:** DNA / RNA is released from the beads after recovery of the hydrate shell in presence of low-salt buffer
Features	Magnetic Beads • Flexible throughput • Flexible sample volume Superparamagnetism • No clumping leading to efficient bead separation • Easy resuspension and mixing • No bead carry-over Small-sized magnetic beads • Slow sedimentation
Requirements	• Magnetic separator (e.g., NucleoMag® SEP) • Consumables must be ordered separately



* For more information on MN magnetic bead technology, refer also to information box on page 15

NucleoFast® technology	
Technology	Ultrafiltration membrane
Format	96-well plates
Processing	• Vacuum • Centrifuge
Principle	**Filtrate:** Ultrafiltration leading to retention of DNA fragments > 150 bp **Wash:** Optional washing step with water
Features	• Fast and easy-to-use procedure • Pure, ready-to-use DNA • Detergent-free membrane • Membrane resistant against tip-touching • Cost-efficient
Requirements	• Suitable waste collection plate, e.g., MN Square-well Block • Microtiterplate centrifuge (centrifugal forces: 4,500 x g)



NucleoSpin® 8 / 96 Plasmid

Plasmid purification for sequencing and cloning

- NucleoSpin® Plasmid Filter Plate and Strips for convenient filtration of bacterial lysates in HTP format

Product at a glance

Technology	Silica-membrane technology
Format	8-well strips / 96-well plates
Sample material	< 5 mL bacterial cell culture
Vector size	< 25 kbp
Typical yield	4–6 µg/mL bacterial culture
Endotoxin level	>> 50 EU/µg*
Elution volume	75–150 µL
Binding capacity	20 µg
Preparation time	45 min/6 strips; 45 min/plate

*EU = Endotoxin Units, please refer to the information box below

Reference

Chu et al., 2015 "Increasing the efficiency of homology-directed repair for CRISPR-Cas9-induced precise gene editing in mammalian cells"
Nature Biotechnology

NucleoSpin® 96 Plasmid Transfection-grade

Plasmid purification for transfection of common cells

- Novel technology to diminish endotoxin content
- NucleoSpin® Plasmid Filter Plate for filtration of bacterial lysates in HTP format

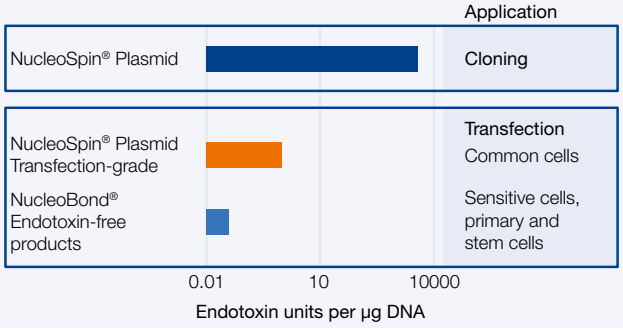
Product at a glance

Technology	Silica-membrane technology
Format	96-well plates
Sample material	< 5 mL bacterial culture
Vector size	< 25 kbp
Typical yield	4–6 µg/mL bacterial culture
Endotoxin level	< 50 EU/µg*
Elution volume	100–200 µL
Binding capacity	20 µg
Preparation time	45 min/plate

Patent pending

*EU = Endotoxin Units, please refer to the information box below

Good to know



Endotoxin removal

Endotoxins are co-purified during plasmid preparation from bacteria. Since they interfere with eukaryotic cell survival, endotoxin reduction is essential prior for applications like cell transfection.

A quantitative chromogenic LAL-test was used to assess endotoxin content. As indicated, the content of endotoxin is strongly dependent on the plasmid purification technology. Low endotoxin levels were detected following purification with NucleoSpin® Plasmid Transfection-grade, resulting in a plasmid solution suitable for transfection of common cells. For transfection of sensitive cells, plasmids should be purified with NucleoBond® technology. Applications like cloning or sequencing are insensitive to endotoxins and plasmids can be purified with NucleoSpin® 8 / 96 Plasmid.

NucleoBond® 96 Xtra EF

Plasmid purification for transfection of sensitive cells

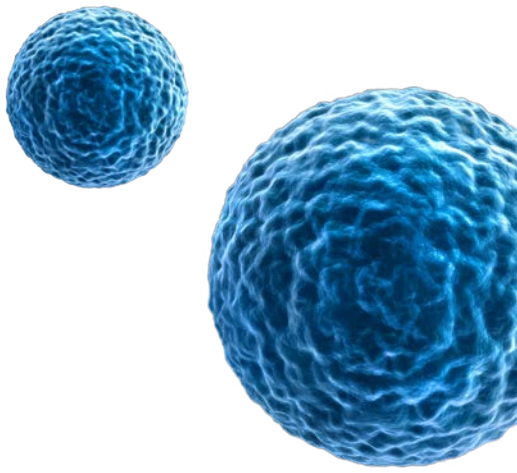
- Patented endotoxin removal technology – no incubation on ice required
- NucleoBond® Filter Plate for filtration of bacterial lysates in HTP-format
- NucleoBond® Finalizer Plate to avoid inconvenient DNA precipitation

Product at a glance

Patented technology

Technology	Anion-exchange chromatography
Format	96-well plate
Sample material	< 5 mL bacterial cell culture
Vector size	< 25 kbp < 300 kbp (with support protocol)
Typical yield	< 10 µg/mL bacterial culture
Endotoxin level	< 0.1 EU/µg*
Elution volume	100–200 µL
Binding capacity	50 µg
Preparation time	120 min/plate

*EU = Endotoxin Units, please refer to the information box on page 8



NucleoSpin® 96 Flash

Purification of large constructs

- Convenient purification of large constructs like cosmids or BACs in HTP format

Product at a glance

Technology	Alkaline lysis and filtration
Format	96-well plates
Sample material	< 1.3 mL *E. coli* culture (high copy) < 3.9 mL *E. coli* culture (BAC)
Vector size	< 250 kbp
Typical yield	8 µg (1.3 mL *E. coli* culture, high-copy) 1 µg (1.3 mL *E. coli* culture, BAC)
Preparation time	90 min/2 plates

Reference

Crucello et al., 2015 “Analysis of Genomic Regions of Trichodermaharzianum IOC-3844 Related to Biomass Degradation”
PLoS One

Ordering information

Product	Preps	REF
NucleoSpin® Plasmid		
NucleoSpin® 8 Plasmid	12 x 8 / 60 x 8	740621 / .5
NucleoSpin® 8 Plasmid Core Kit	48 x 8	740461.4
NucleoSpin® 96 Plasmid	1 x 96 / 4 x 96 / 24 x 96	740625.1 / .4 / .24
NucleoSpin® 96 Plasmid Core Kit	4 x 96	740616.4
NucleoSpin® Transfection-grade		
NucleoSpin® 96 Plasmid Transfection-grade	1 x 96 / 4 x 96 / 24 x 96	740491.1 / .4 / .24
NucleoSpin® 96 Plasmid Transfection-grade Core kit	4 x 96 / 24 x 96	740492.4 / .24
NucleoBond® Endotoxin-free		
NucleoBond® 96 Xtra EF	1 x 96 / 4 x 96	740430.1 / .4
NucleoSpin® Flash		
NucleoSpin® 96 Flash	2 x 96 / 4 x 96 / 24 x 96	740618.2 / .4 / .24

NucleoSpin® 8 / 96 PCR Clean-up

Clean-up for sensitive enzymatic reactions

- Complete removal of primers and primer-dimers
- Purification of both small and large fragments

Product at a glance

Technology	Silica-membrane technology
Format	8-well strips / 96-well plates
Sample material	< 100 µL PCR reaction mixture
Fragment size	50 bp–10 kbp
Recovery	< 95 %
Elution volume	75–150 µL
Binding capacity	15 µg
Preparation time	30 min/6 strips; 45 min/plate

Reference

Guimaraes et al., 2016 "A cost-effective high-throughput metabarcoding approach powerful enough to genotype ~44,000 year-old rodent remains from Northern Africa"
Molecular Ecology

NucleoFast® 96 PCR

Time saving clean-up for insensitive enzymatic reactions

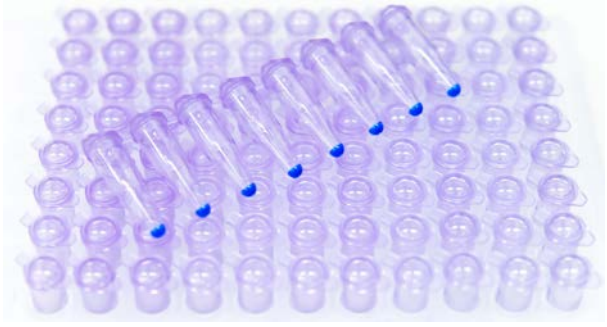
- Detergent-free membrane optimized for ultrafiltration
- Fast and convenient procedure

Product at a glance

Technology	Ultrafiltration technology
Format	96-well plates
Sample material	20–300 µL PCR reaction mixture
Fragment size	> 150 bp
Recovery	< 95 %
Elution volume	25–100 µL
Binding capacity	15 µg
Preparation time	20 min/plate

Reference

Herold et al., 2014 "Isolated trisomy 13 defines a homogeneous AML subgroup with high frequency of mutations in spliceosome genes and poor prognosis"
Blood



NucleoMag® NGS Clean-up and Size Select

Magnetic-bead-based clean-up and size selection

- Elution in minimal volume to meet concentration specifications for NGS
- Tunable size selection 150–800 bp

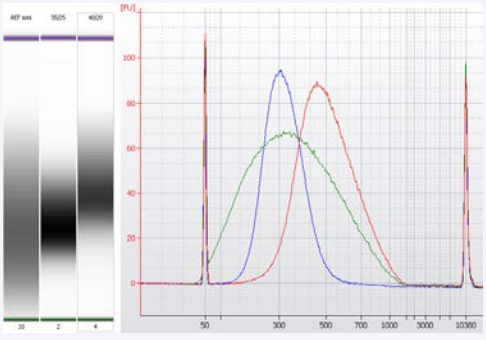
Product at a glance

Technology	Magnetic-bead technology
Format	Flexible
Sample material	Reaction mixtures from common NGS library kits
Input amount	17.5 pg–5 µg
Input volume	50–150 µL
Fragment size	> 150 bp
Recovery	> 80 %
Elution volume	10–100 µL

Reference

Bell et al., 2016 “A Diverse Soil Microbiome Degrades More Crude Oil than Specialized Bacterial Assemblages Obtained in Culture”
Applied and Environmental Microbiology

Good to know



Size selection: NucleoMag® NGS Clean-up and Size Select

NucleoMag® NGS Clean-up and Size Select enables clean-up reactions and a single or double sided size selection to recover the fragment lengths which are needed in your specific application. The magnetic beads in the kit are already suspendend in binding buffer and just have to be diluted to tune the required fragment size. This is illustrated by the following experiment:

Sheared DNA from mouse tissue has been double sided size selected by using NucleoMag® NGS Clean-up and Size Select.

green: DNA fragment size distribution from mouse tissue after fragmentation without size selection

red: DNA fragment size distribution after double sided size selection with dilution ratios of 0.4 (right) and 0.6 (left); mean fragment size: 460 bp

blue: DNA fragment size distribution after double sided size selection with dilution ratios of 0.55 (right) and 0.8 (left); mean fragment size: 340 bp

Ordering information

Product	Preps / Pack of	REF
NucleoSpin® PCR Clean-up		
NucleoSpin® 8 PCR Clean-up	12 x 8 / 60 x 8	740668 / .5
NucleoSpin® 8 PCR Clean-up Core Kit	48 x 8	740463.4
NucleoSpin® 96 PCR Clean-up	1 x 96 / 2 x 96 / 4 x 96 / 24 x 96	740658.1 / .2 / .4 / .24
NucleoSpin® 96 PCR Clean-up Core Kit	4 x 96	740464.4
NucleoFast® PCR		
NucleoFast® 96 PCR Clean-up Kit	4 x 96	743500.4
NucleoFast® 96 PCR Plates	10 x 96 / 50 x 96	743100.10/.50
NucleoMag® NGS clean-up and Size Select		
NucleoMag® NGS Clean-up and Size Select	5 mL / 50 mL / 500 mL	744970.5 / .50 / .500

NucleoSpin® 8 / 96 Blood

Silica-membrane-based isolation of DNA from blood

- Complete processing at room temperature
- Improved flow rates minimize risk of clogging

Product at a glance

Technology	Silica-membrane technology
Format	8-well strips / 96-well plates
Sample material	< 200 µL human/animal whole blood, plasma, serum, saliva; 2 x 10^6 cells
Compatibility	Samples treated with EDTA, citrate, heparin, CPDA
Fragment size	300 bp–50 kbp
Typical yield	< 30 µg/mL blood
Elution volume	100 µL
Binding capacity	20 µg
Preparation time	35 min/6 strips; 70 min/plate

Reference

Kaenel et al. 2014 "Leukocyte telomere length and hemostatic factors in a South African cohort: the SABPA Study
Journal of Thrombosis and Haemostasis

NucleoSpin® 8 / 96 Blood QuickPure

Silica-membrane-based fast isolation of DNA from blood

- Minimized hands-on-time
- Perfect solution for low quality blood samples
- Compatible with a broad range of body fluids

Product at a glance

Technology	Silica-membrane technology
Format	8-well strips / 96-well plates
Sample material	200–300* µL human/animal whole blood, serum, plasma, buffycoats, body fluids; 5 x 10^6 cells
Compatibility	Samples treated with EDTA, citrate, heparin, CPDA
Fragment size	300 bp–50 kbp
Typical yield	< 30 µg/mL blood
Elution volume	75–100 µL
Binding capacity	60 µg
Preparation time	60 min/12 strips; 60 min/2 plates

*For preparation of 300 µL samples, increased volumes of Lysis Buffer BQ1 are required.

NucleoSpin® Blood L Vacuum

Large-scale DNA isolation from whole blood

- Large volume processing for maximal sensitivity in HTP format
- No carryover of PCR inhibitors while handling large blood volumes

Product at a glance

Technology	Silica-membrane technology
Format	Midi spin columns
Sample material	1–2 mL human/animal whole blood, saliva
Compatibility	Samples treated with EDTA or citrate
Fragment size	200 bp–50 kbp
Typical yield	< 40 µg/mL blood
Elution volume	2 x 300 µL
Binding capacity	250 µg
Preparation time	75 min/24 preps

NucleoSpin® 8 / 96 RNA Blood

Silica-membrane-based isolation of RNA from blood

- Patented lysis buffer chemistry for convenient lysis and working at room temperature
- Compatible with common blood collection tubes

Patented technology

Product at a glance

Technology	Silica-membrane technology
Format	8-well strips / 96-well plates
Sample material	< 400 µL human / animal whole blood, plasma, serum, urine; buffy coat
Compatibility	Fresh or frozen samples, stabilized with EDTA, citrate or heparin
Fragment size	> 200 nt
Typical yield	< 20 µg/mL blood
Elution volume	50–130 µL
Binding capacity	100 µg
Preparation time	60 min/6 strips; 100 min/plate

Reference

Jégou et al., 2016 “Whole Blood Transcriptomics Is Relevant to Identify Molecular Changes in Response to Genetic Selection for Feed Efficiency and Nutritional Status in the Pig”
PLoS One

NucleoMag® Blood 200 µL

Magnetic-bead-based isolation of DNA from whole blood

- Complete processing at room temperature facilitates automation
- Small elution volumes for highly concentrated quality DNA

Product at a glance

Technology	Magnetic-bead technology
Format	Flexible
Sample material	200 µL human/animal whole blood, urine, saliva
Compatibility	Fresh or frozen samples, treated with EDTA or citrate
Fragment size	300 bp–50 kbp
Typical yield	< 40 µg/mL blood
Elution volume	50–100 µL
Binding capacity	0.4 µg/µL beads
Preparation time	45 min/96 preps*

* Established on KingFisher® Flex

Reference

Wiers et al. 2015 "Effects of depressive symptoms and peripheral DAT methylation on neural reactivity to alcohol cues in alcoholism"
Translational Psychiatry

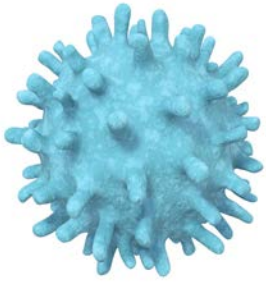
NucleoSpin® 8 / 96 Virus

Silica-membrane-based isolation of viral RNA/DNA from biological fluids

- Complete processing at room temperature
- Maximal recovery of RNA and DNA for sensitive virus detection

Product at a glance

Technology	Silica-membrane technology
Format	8-well strips / 96-well plates
Sample material	< 150 µL biological fluids (e.g., serum, plasma, saliva, urine)
Fragment size	100 bp-50 kbp
Recovery	> 90 %
Elution volume	70–100 µL
Binding capacity	40 µg
Preparation time	60 min/6 strips



Reference

Gallian et al., 2016 "Zika virus in asymptomatic blood donors, Martinique: 2016 "
Blood

Good to know

10 minutes incubation: MN Magnetic Beads are still mixed in solution, while the competitor product is already sedimented.

MN Magnetic Beads - Superparamagnetism

The term "Superparamagnetism" stands for the feature that beads can be attracted by a magnetic field, but will not become magnetic themselves. This feature ensures that the magnetic beads will not clump together and can easily and completely be resuspended in buffer.

MN Magnetic Beads – Particle Size

Magnetic Beads from MACHEREY-NAGEL have a diameter from 1–3 µm. This small size guarantees a long sedimentation time, which is required for convenient HTP processing.

In addition, the small bead size results in a large collective surface area. This is required for a maximal binding capacity.

NucleoMag® Virus

Magnetic-bead-based isolation of viral RNA/DNA from biological fluids

- Elution in minimal volume to achieve highest sensitivities for virus detection
- Complete processing at room temperature facilitates automation

Product at a glance

Technology	Magnetic-bead technology
Format	Flexible
Sample material	< 200 µL biological fluids (e.g., serum, plasma)
Fragment size	100 bp–50 kbp
Elution volume	50–100 µL
Preparation time	120 min/96 preps

Reference

Milazzo et al., 2016 “Direct-acting antivirals in hepatitis C virus (HCV)-infected and HCV/HIV-coinfected patients: real-life safety and efficacy”
HIV Medicine

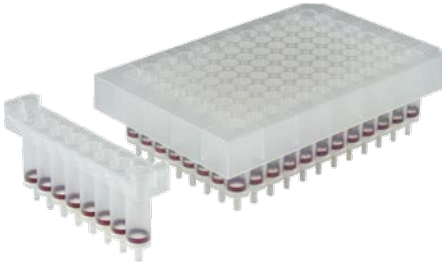
NucleoSpin® 96 DNA Plasma

Silica-membrane-based isolation of DNA from plasma samples

- Processing of up to 2 mL plasma samples for high sensitivity in HTP format
- Purification of cfDNA down to 50 bp

Product at a glance

Technology	Silica-membrane technology
Format	96-well plates
Sample material	0.5–2 mL plasma
Compatibility	EDTA, Cell-Free DNA BCT® (Streck)
Fragment size	> 50 bp
Elution volume	100 µL
Preparation time	90 min/96 preps (EDTA plasma)



NucleoSpin® DNA Plasma Midi

Large-scale isolation of DNA from plasma samples

- Large volume processing up to 5 mL for maximal sensitivity in HTP format
- Purification of cfDNA down to 50 bp

Product at a glance

Technology	Silica-membrane technology
Format	Midi spin columns
Sample material	1–5 mL plasma
Compatibility	EDTA, Cell-Free DNA BCT® (Streck)
Fragment size	> 50 bp
Elution volume	200 µL
Preparation time	90 min/24 preps (EDTA plasma)

Body Fluids

Ordering information

Product	Preps	REF
NucleoSpin® Blood		
NucleoSpin® 8 Blood	12 x 8 / 60 x 8	740664 / .5
NucleoSpin® 8 Blood Core Kit	48 x 8	740455.4
NucleoSpin® 96 Blood	1 x 96 / 4 x 96 / 24 x 96	740665.1 / .4 / .24
NucleoSpin® 96 Blood Core Kit	4 x 96	740456.4
NucleoSpin® 8 Blood QuickPure	12 x 8 / 60 x 8	740666 / .5
NucleoSpin® 96 Blood QuickPure	2 x 96 / 4 x 96 / 24 x 96	740667.2 / .4 / .24
NucleoSpin® Blood L Vacuum	24	740954.24
NucleoSpin® 8 RNA Blood	12 x 8 / 60 x 8	740220 / .5
NucleoSpin® 96 RNA Blood	2 x 96 / 4 x 96	740225.2 / .4
NucleoMag® Blood		
NucleoMag® Blood 200 µL	1 x 96 / 4 x 96	744501.1 / .4
NucleoSpin® Virus		
NucleoSpin® 8 Virus	12 x 8 / 60 x 8	740643 / .5
NucleoSpin® 8 Virus Core Kit	48 x 8	740451.4
NucleoSpin® 96 Virus	2 x 96 / 4 x 96	740691.2 / .4
NucleoSpin® 96 Virus Core Kit	4 x 96	740452.4
NucleoMag® Virus		
NucleoMag® Virus	1 x 96 / 4 x 96	744800.1 / .4
NucleoSpin® Plasma		
NucleoSpin® 96 DNA Plasma	1 x 96 / 4 x 96	740873.1 / .4
NucleoSpin® 96 DNA Plasma Core Kit	1 x 96 / 4 x 96	740874.1 / .4
NucleoSpin® DNA Plasma Midi	48	740303.48
NucleoSpin® DNA Plasma Midi Core Kit	48	740302.48

NucleoSpin® 8 / 96 Tissue

Silica-membrane-based DNA isolation from tissue and cells

- Efficient lysis allows for processing of a broad range of starting materials
- Numerous support protocols facilitate processing for challenging sample materials

Product at a glance

Technology	Silica-membrane technology
Format	8-well strips / 96-well plates
Sample material	< 20 mg human/animal tissue; < 1 x 10^6 eukaryotic cells, bacteria
Fragment size	300 bp–50 kbp
Typical yield	< 25 µg
Elution volume	100–200 µL
Binding capacity	40 µg
Preparation time	20 min/6 strips; 60 min/plate (both excluding lysis)

Reference

Senkomago et al., 2015 "Acquisition and persistence of human papillomavirus 16 (HPV-16) and HPV-18 among men with high-HPV viral load infections in a circumcision trial in Kisumu, Kenya"
The Journal of Infectious Diseases

NucleoSpin® 8 / 96 RNA

Medium and high throughput kits for RNA isolation

- Efficient lysis without organic solvents
- Complete removal of gDNA by an included rDNase

Product at a glance

Technology	Silica-membrane technology
Format	8-well strips / 96-well plates
Sample material	< 30 mg human/animal tissue; < 1 x 10^7 eukaryotic cells
Fragment size	> 200 nt
Typical yield	20 µg (from 20 mg mouse liver or 2 x 10^6 HeLa cells)
Elution volume	50–130 µL
Binding capacity	40 µg
Preparation time	45 min/6 strips; 70 min/plate

References

D´Erme et al., 2015 "IL-36γ (IL-1F9) is a biomarker for psoriasis skin lesions"
Journal of Investigative Dermatology

Sundberg et al., 2015 "Small-molecule screening identifies inhibition of salt-inducible kinases as a therapeutic strategy to enhance immunoregulatory functions of dendritic cells"
Proceedings of the National Academy of Sciences

NucleoMag® Tissue

Magnetic-bead-based DNA isolation from tissue and cells

- Efficient lysis allows for processing of a broad range of starting materials
- Small elution volumes for highly concentrated DNA to fulfill specifications of challenging downstream applications

Product at a glance

Technology	Magnetic-bead technology
Format	Flexible
Sample material	< 20 mg human/animal tissue; < 1 x 10^6 eukaryotic cells, bacteria
Fragment size	300 bp–50 kbp
Typical yield	< 20 µg (20 mg human/animal tissue)
Elution volume	50–200 µL
Binding capacity	0.4 µg/µL beads
Preparation time	120 min/96 preps (excluding lysis)

References

Mattila et al., 2012 “High genetic load in an old isolated butterfly population”
Proceedings of the National Academy of Sciences

Merckx et al., 2015 “Evolution of endemism on a young tropical mountain”
Nature

NucleoMag® RNA

Magnetic-bead-based RNA isolation from tissue and cells

- Reducing agent TCEP included – no β-mercaptoethanol
- Small elution volumes for highly concentrated RNA to fulfill specifications of challenging downstream applications

Product at a glance

Technology	Magnetic-bead technology
Format	Flexible
Sample material	< 20 mg human/animal tissue; < 2 x 10^6 eukaryotic cells
Fragment size	> 200 nt
Typical yield	< 30 µg
Elution volume	50–200 µL
Binding capacity	0.3 µg/µL beads
Preparation time	120 min/96 preps

Reference

Amiri et al., 2014 “Chronic Bee Paralysis Virus in Honeybee Queens: Evaluating Susceptibility and Infection Routes”
Viruses

NucleoSpin® 96 DNA FFPE

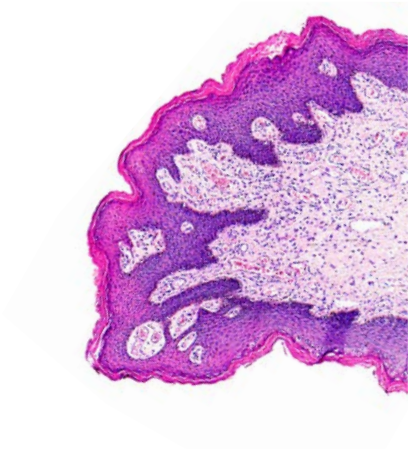
Silica-membrane-based DNA isolation from FFPE samples

- Tailored buffer chemistry for complete decrosslinking of formalin-fixed samples
- No xylene needed, odorless and convenient paraffin removal buffer (patent pending)

Product at a glance

Technology	Silica-membrane technology
Format	96-well plates
Sample material	< 10 mg tissue; < 15 mg paraffin
Fragment size	50 bp–5 kbp
Elution volume	100 µL
Binding capacity	20 µg
Preparation time	60 min/plate (excluding lysis)

Patent pending



NucleoMag® DNA FFPE

Magnetic-bead-based DNA isolation from FFPE samples

- Tailored buffer chemistry for complete decrosslinking of formalin-fixed samples
- No xylene needed, odorless and convenient paraffin removal buffer (patent pending)

Product at a glance

Technology	Magnetic-bead technology
Format	Flexible
Sample material	< 5 mg tissue; < 15 mg paraffin
Fragment size	50 bp–5 kbp
Elution volume	> 25 µL
Binding capacity	0.4 µg/µL beads
Preparation time	120 min/96 preps (excluding lysis)

Patent pending

NucleoSpin® 96 Soil

Silica-membrane-based DNA isolation from stool and soil samples

- NucleoSpin® Bead Tubes for a thorough mechanical disruption of stool samples included
- NucleoSpin® Inhibitor Removal Plate for convenient inhibitor removal in HTP format
- DNA suitable for metagenomic studies

Product at a glance

Technology	Silica-membrane technology combined with NucleoSpin® Bead Tubes
Format	96-well plates
Sample material	200 mg stool; < 500 mg soil, sludge or sediment
Fragment size	50 bp–50 kbp
Typical yield	< 10 µg
Elution volume	100–200 µL
Binding capacity	50 µg
Preparation time	150 min/plate (excluding lysis)

References

Valentin et al., 2014 “Loss of diversity in wood-inhabiting fungal communities affects decomposition activity in Norway spruce wood”
Frontiers in Microbiology

Ordering information

Product	Preps	REF
NucleoSpin® Tissue		
NucleoSpin® 8 Tissue	12 x 8 / 60 x 8	740740 / .5
NucleoSpin® 8 Tissue Core Kit	48 x 8	740453.4
NucleoSpin® 96 Tissue	2 x 96 / 4 x 96 / 24 x 96	740741.2 / .4 / .24
NucleoSpin® 96 Tissue Core Kit	4 x 96	740454.4
NucleoSpin® RNA		
NucleoSpin® 8 RNA	12 x 8 / 60 x 8	740698 / .5
NucleoSpin® 8 RNA Core Kit	48 x 8	740465.4
NucleoSpin® 96 RNA	2 x 96 / 4 x 96 / 24 x 96	740709.2 / . 4 / .24
NucleoSpin® 96 RNA Core Kit	4 x 96	740466.4
NucleoMag® Tissue		
NucleoMag® Tissue	1 x 96 / 4 x 96 / 24 x 96	744300.1 / .4 / .24
NucleoMag® RNA		
NucleoMag® RNA	1 x 96 / 4 x 96	744350.1 / .4
NucleoSpin® DNA FFPE		
NucleoSpin® 96 DNA FFPE	1 x 96 / 4 x 96	740240.1 / .4
NucleoMag® DNA FFPE		
NucleoMag® DNA FFPE	1 x 96 / 4 x 96	744320.1 / .4
NucleoSpin® Soil		
NucleoSpin® 96 Soil	2 x 96 / 4 x 96	740787.2 / .4

NucleoSpin® 8 / 96 Food

Silica-membrane-based DNA isolation from food and feed

- Efficient lysis allows for processing of a broad range of starting materials
- DNA is directly suitable for GMO identification or for sample purity analyses

Product at a glance

Technology	Silica-membrane technology
Format	8-well strips / 96-well plates
Sample material	< 200 mg food or feed
Fragment size	300 bp–50 kbp
Typical yield	< 10 µg
Elution volume	100–200 µL
Binding capacity	30 µg
Preparation time	60 min/6 strips; 120 min/plate (both excluding lysis)

NucleoSpin® 96 Soil

Silica-membrane-based DNA isolation from soil and stool samples

- NucleoSpin® Bead Tubes for a thorough mechanical disruption of various soil types
- NucleoSpin® Inhibitor Removal Plate for convenient inhibitor removal in HTP format
- DNA suitable for metagenomic studies

Product at a glance

Technology	Silica-membrane technology combined with NucleoSpin® Bead Tubes
Format	96-well plates
Sample material	< 500 mg soil, sludge or sediment; < 200 mg stool
Fragment size	50 bp–50 kbp
Typical yield	< 10 µg
Elution volume	100–200 µL
Binding capacity	50 µg
Preparation time	150 min/plate (excluding lysis)

Reference

Valentin et al., 2014 “Loss of diversity in wood-inhabitating fungal communities affects decomposition activity in Norway spruce wood”
Frontiers in Microbiology

NucleoSpin® 8 / 96 Plant II

Silica-membrane-based DNA isolation from plant material

- An adaptable lysis buffer chemistry allows for processing of all common plant materials
- Numerous support protocols facilitate processing of challenging sample material

Product at a glance

Technology	Silica-membrane technology
Format	8-well strips / 96-well plates
Sample material	20–100 mg plant tissue (wet weight)
Fragment size	50 bp–50 kbp
Typical yield	< 30 µg
Elution volume	100–200 µL
Binding capacity	30 µg
Preparation time	60 min/6 strips; 60 min/plate (both excluding lysis)

Reference

Floate et al., 2015 "Plant-herbivore interactions in a trispecific hybrid swarm of Populus: assessing support for hypotheses of hybrid bridges, evolutionary novelty and genetic similarity"
New Phytologist

NucleoMag® Plant

Magnetic-bead-based DNA isolation from plant material

- Small elution volumes for highly concentrated DNA to fulfill specifications of challenging downstream applications
- Numerous support protocols facilitate processing even of challenging sample material

Product at a glance

Technology	Magnetic-bead technology
Format	Flexible
Sample material	20–50 mg plant tissue (wet weight)
Fragment size	300 bp–50 kbp
Typical yield	< 20 µg
Elution volume	50–200 µL
Binding capacity	0.4 µg/mL beads
Preparation time	120 min/96 preps

Reference

Merckx et al., 2015 "Evolution of endemism on a young tropical mountain"
Nature

Ordering information

Product	Preps	REF
NucleoSpin® Food		
NucleoSpin® 8 Food	12 x 8 / 60 x 8	740975 / .5
NucleoSpin® 96 Food	2 x 96 / 4 x 96 / 24 x 96	740976.2 / .4 / .24
NucleoSpin® Soil		
NucleoSpin® 96 Soil	2 x 96 / 4 x 96	740787.2 / .4
NucleoSpin® Plant		
NucleoSpin® 8 Plant II	12 x 8 / 60 x 8	740669 / .5
NucleoSpin® 8 Plant II Core Kit	48 x 8	740467.4
NucleoSpin® 96 Plant II	2 x 96 / 4 x 96 / 24 x 96	740663.2 / .4 / .24
NucleoSpin® 96 Plant II Core Kit	4 x 96	740468.4
NucleoMag® Plant		
NucleoMag® Plant	1 x 96 / 4 x 96 / 24 x 96	744400.1 / .4 / .24

NucleoMag® VET

Magnetic-bead-based DNA and RNA isolation from veterinary samples

- One kit for all common veterinary samples
- Sensitive detection of bacterial DNA and viral DNA / RNA
- Small elution volumes for highly concentrated nucleic acid

Product at a glance

Technology	Magnetic-bead technology
Format	Flexible
Sample material	<30 mg tissue; < 200 µL whole blood, serum, plasma, feces, swab wash solution, ear notches, heir
Fragment size	300 bp–50 kbp
Elution volume	50–100 µL
Binding capacity	0.4 µg/µL beads
Preparation time	45 min/96 preps*

* Established on KingFisher® Flex

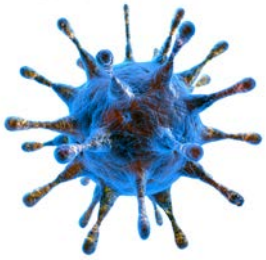
Reference

Bertasio et al., 2016 "Porcine Epidemic Diarrhea Virus Shedding and Antibody Response in Swine Farms: A Longitudinal Study"
Frontiers in Microbiology

NucleoSpin® 8 / 96 Virus

Silica-membrane-based isolation of viral RNA/DNA from biological fluids for veterinary diagnostics

- Complete processing at room temperature
- Small elution volumes for concentrated high quality RNA and DNA



Product at a glance

Technology	Silica-membrane technology
Format	8-well strips / 96-well plates
Sample material	< 150 µL cell-free biological fluids (e.g., serum, plasma)
Fragment size	100 bp–50 kbp
Recovery	> 90 %
Elution volume	70–100 µL
Binding capacity	40 µg
Preparation time	60 min/6 strips; 60 min/plate

Reference

Halbherr et al., 2015 "Biological and Protective Properties of Immune Sera Directed to the Influenza Virus Neuraminidase"
Journal of Virology

Gallian et al., 2016 "Zika virus in asymptomatic blood donors, Martinique: 2016"
Blood

NucleoSpin® 8 / 96 Tissue

Silica-membrane-based DNA isolation from solid veterinary tissues

- Efficient lysis allows for processing of a broad range of veterinary samples
- Numerous support protocols facilitate processing of challenging veterinary samples

Product at a glance

Technology	Silica-membrane technology
Format	8-well strips / 96-well plates
Sample material	< 20 mg animal tissue; < 1 x 10^6 eukaryotic cells, bacteria
Fragment size	300 bp–50 kbp
Typical yield	< 25 µg
Elution volume	100–200 µL
Binding capacity	40 µg
Preparation time	20 min/6 strips; 60 min/plate (both excluding lysis)

Reference

Senkomago et al., 2015 "Acquisition and persistence of human papillomavirus 16 (HPV-16) and HPV-18 among men with high-HPV viral load infections in a circumcision trial in Kisumu, Kenya"
The Journal of Infectious Diseases

Ordering information

Product	Preps	REF
NucleoMag® VET		
NucleoMag® VET	1 x 96 / 4 x 96	744200.1 / .4
NucleoSpin® Virus		
NucleoSpin® 8 Virus	12 x 8 / 60 x 8	740643 / .5
NucleoSpin® 8 Virus Core Kit	48 x 8	740451.4
NucleoSpin® 96 Virus	2 x 96 / 4 x 96	740691.2 / .4
NucleoSpin® 96 Virus Core Kit	4 x 96	740452.4
NucleoSpin® Tissue		
NucleoSpin® 8 Tissue	12 x 8 / 60 x 8	740740 / .5
NucleoSpin® 8 Tissue Core Kit	48 x 8	740453.4
NucleoSpin® 96 Tissue	2 x 96 / 4 x 96 / 24 x 96	740741.2 / .4 / .24
NucleoSpin® 96 Tissue Core Kit	4 x 96	740454.4

Protino® 96 Ni-NTA

High throughput purification of His-tagged proteins

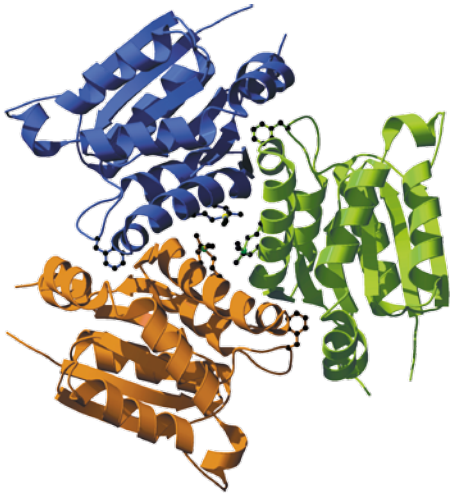
- High purity protein purification using chelating group NTA (nitrilotriacetic acid)
- Unique Protino® Purification Plate for leak-free incubation during the entire procedure
- Purification under native or denaturing conditions

Product at a glance

Technology	IMAC (immobilized metal ion affinity chromatography)
Format	96-well plates
Chelating ligand	NTA (nitrilotriacetic acid)
Matrix	6 % beaded agarose (cross-linked), pre-charged with Ni^{2+}
Bead size	45–165 µm
Sample volume	< 750 µL/well (50 µL of settled agarose beads/well)
Binding capacity	2 mg/well (with 50 µL agarose beads/well)

Reference

Holstein et al., 2015 “Engineering Giardia lamblia trimethylguanosine synthase (GlaTgs2) to transfer non-natural modifications to the RNA 5’-cap”
Protein Engineering, Design & Selection



Protino® 96 Ni-IDA

High throughput purification of His-tagged proteins

- Chelating group IDA allows for highest protein purity
- Dry resin – storage at room temperature
- Purification under native or denaturing conditions

Product at a glance

Technology	IMAC (immobilized metal ion affinity chromatography)
Format	96-well plates
Chelating ligand	IDA (iminodiacetic acid)
Matrix	Macroporous silica
Binding capacity	1 mg/well (with 50 mg resin/well)

Reference

Koerfer et al., 2016 “In vitro flow cytometry-based screening platform for cellulase engineering”
Scientific Reports

Ordering information

Product	Preps	REF
Protino® Ni-NTA		
Protino® 96 Ni-NTA	1 x 96 / 4 x 96	745425.1 / .4
Protino® Ni-IDA		
Protino® 96 Ni-IDA	1 x 96 / 4 x 96	745300.1 / .4

HTP equipment

Product	Pack of	Specification	REF
NucleoVac 96 Vacuum Manifold	1	For vacuum-based processing Consists of manifold base and lid, a spacer set and a waste container set Starter Set A is required when using NucleoSpin® 8-well strips on NucleoVac 96 (see below)	740681
Starter Set Midi	1 set	For processing NucleoSpin® Blood L Vacuum and NucleoSpin® Plasma Midi under vacuum on NucleoVac 96 Vacuum Manifold or similar manifolds Contains 1 Column Holder Midi, 1 Wash Plate Midi, 1 Elution Tube Holder Midi, and Dummy Columns	740744
NucleoVac Vacuum Regulator	1	For controlling of vacuum	740641
NucleoSpin® Dummy Strips	6 strips	For closing unused rows of Column Holders A and B during vacuum processing of NucleoSpin® 8-well kits	740685
MN Frame	1	For optimized handling of 96-well plates with vacuum manifold on BioRobot® 9600, 9604, and 3000 (Qiagen), MultiPROBE® II / Janus (PerkinElmer), Biomek® 2000 / 3000 and FX / NX (Beckman Coulter)	740680
MN Shaker Frame	1	Adapter frame for shaking Protino and NucleoSpin® 96-well Plates	740489
NucleoMag® SEP	1	Magnetic separator, for use with 96-well plates (e.g., REF 740481) with magnetic bead technology	744900
NucleoMag® SEP 24	1	Magnetic separator, for use with 24-well plates (e.g., REF 740448.4)	744903
Rubber Pad	2	Reusable mat to cover unused rows of a 96-well plate	740640
Starter Set A	1	For processing NucleoSpin® 8-well strips under vacuum on a NucleoVac 96 Vacuum Manifold or similar manifolds Contains 2 Column Holders A, NucleoSpin® Dummy Strips	740682
Starter Set B	1	For processing NucleoSpin® 8-well strips on the Qiagen Bio Robot® 9600 / 9604 / 3000 Contains 1 Column Holder B, 1 Column Holder D, NucleoSpin® Dummy Strips	740683
Starter Set C	1	For processing NucleoSpin® 8-well strips under centrifugation Contains 2 Column Holders C, MN Square-well Blocks, Racks of Tube Strips	740684

HTP consumables

Product	Pack of	Specification	REF
MN Wash Plate	4 24	To facilitate washing and drying of NucleoSpin® 96-well plates	740479 740479.24
Square-well Block	4 24	For use with NucleoMag® SEP (744900) for magnetic separation	740481 740481.24
MN Square-well Block	4 24	96-well blocks with 2.1 mL square wells for lysis and mixing	740476 740476.24
Culture Plate	4 sets 24 sets	Square-well Block with 2.1 mL square wells used for growing, harvesting, or lysing of bacterial cultures, with Gas-permeable Foil	740488 740488.24
Round-well Block	20	96-well blocks with 1.2 mL round wells suitable for mixing steps and collecting elution fractions	740671
Round-well Block with Cap Strips	4 sets 24 sets	1 set consists of 1 Round-well Block with 96 1.2 mL round wells and 12 Cap Strips	740475 740475.24
Round-well Block Low	4	96-well blocks with 0.8 mL round wells	740485
Elution Plate U-bottom	24	96-well microplates with 300 µL u-bottom wells with Self-adhering Foil	740486.24
24-Square-well Block	4 24	24-well blocks with 10 mL U-bottom square wells	740448.4 740448.24
Rack of Tube Strips	5 sets	1 set consists of 1 rack, 12 strips with 8 tubes each	740637
Rack of Tube Strips with Cap Strips	4 sets 24 sets	1 set consists of 1 rack, 12 strips with 8 tubes each, 12 cap strips	740477 740477.24
Cap Strips	48 288	For sealing of Tube Strips, Round-well Blocks	740478 740478.24
96-well Silicone Lid	24	Silicone Lid for 96-well Round-well Block low	740447.24
Gas-permeable Foil	50	To cover square-well blocks during incubation of bacterial cultures	740675
Self-adhering PE Foil	50	Adhesive tape foils for sealing 96-well elution plates for airtight storage of DNA / RNA	740676
NucleoSpin® Plasmid Filter Strips	48	For clarification of lysates, for use under vacuum or centrifugation	740730.48F
NucleoSpin® RNA Filter Strips	12 60	For filtration of cell and tissue homogenates, for use under vacuum or centrifugation	740699.12F 740699.60F
NucleoSpin® RNA Filter Plate	4	For filtration of cell and tissue homogenates, for use under vacuum or centrifugation	740711
NucleoSpin® Trace Filter Plate	20	For lysis of samples and subsequent removal of particulate matter, for use under vacuum or centrifugation	740677
Receiver Plates 20 µm	4	96-well plates with inserted filter frits of 20 µm pore size, suitable for centrifugation and vacuum	740686.4
Receiver Plates 20 µm hydrophilized	4	96-well plates with inserted hydrophilized filter frits of 20 µm pore size, suitable for gravity flow, centrifugation, and vacuum	740687.4
Receiver Plates 50 µm	4	96-well plates with inserted filter frits of 50 µm pore size, suitable for centrifugation and vacuum	740688.4
Receiver Plates 50 µm hydrophilized	4	96-well plates with inserted hydrophilized filter frits of 50 µm pore size, suitable for gravity flow, centrifugation, and vacuum	740689.4
KingFisher® 96 Accessory Kit A	1 set	Square-well Blocks, Deep-well Tip Combs, Elution Plates, for 4 x 96 preps of NucleoMag® Tissue / DNA FFPE / DNA Forensic / Virus / VET using KingFisher® Flex platform	744950
KingFisher® 96 Accessory Kit B	1 set	Deep-well Blocks, Deep-well Tip Combs, Elution Plates, for 4 x 96 preps of NucleoMag® Plant / RNA / Blood 200 µL using KingFisher® Flex platform	744951
KingFisher® 24 Accessory Kit	1 set	Deep-well Plates and Tip Combs for 5 x 24 preps from NucleoMag® kits in 24-well format on a KingFisher® Flex platform	744953
KingFisher® Duo Prime Accessory Kit	1 set	Deep-well Plates, Tip Combs and Elution Strips for processing 8 x 12 preps on a KingFisher® Duo Prime platform	744952

HTP kits

Product*	Pack of	REF
Plasmid Purification		
NucleoSpin® 8 Plasmid	12 x 8 / 60 x 8	740621 / .5
NucleoSpin® 8 Plasmid Core Kit	48 x 8	740461.4
NucleoSpin® 96 Plasmid	1 x 96 / 4 x 96 / 24 x 96	740625.1 / .4 / .24
NucleoSpin® 96 Plasmid Core Kit	4 x 96	740616.4
NucleoSpin® 96 Plasmid Transfection-grade	1 x 96 / 4 x 96 / 24 x 96	740491.1 / .4 / .24
NucleoSpin® 96 Plasmid Transfection-grade Core kit	4 x 96 / 24 x 96	740492.4 / .24
NucleoBond® 96 Xtra EF	1 x 96 / 4 x 96	740430.1 / .4
NucleoSpin® 96 Flash	2 x 96 / 4 x 96 / 24 x 96	740618.2 / .4 / .24
PCR clean-up		
NucleoSpin® 8 PCR Clean-up	12 x 8 / 60 x 8	740668 / .5
NucleoSpin® 8 PCR Clean-up Core Kit	48 x 8	740463.4
NucleoSpin® 96 PCR Clean-up	1 x 96 / 2 x 96 / 4 x 96 / 24 x 96	740658.1 / .2 / .4 / .24
NucleoSpin® 96 PCR Clean-up Core Kit	4 x 96	740464.4
NucleoFast® 96 PCR Clean-up Kit	4 x 96	743500.4
NucleoFast® 96 PCR Plates	10 x 96 / 50 x 96	743100.10 / .50
NucleoMag® NGS Clean-up and Size Select	5mL / 50 mL / 500 mL	744970.5 / .50 / .500
Body Fluids		
NucleoSpin® 8 Blood	12 x 8 / 60 x 8	740664 / .5
NucleoSpin® 8 Blood Core Kit	48 x 8	740456.4
NucleoSpin® 96 Blood	1 x 96 / 4 x 96 / 24 x 96	740665.1 / .4 / .24
NucleoSpin® 96 Blood Core Kit	4 x 96	740455.4
NucleoSpin® 8 Blood QuickPure	12 x 8 / 60 x 8	740666 / .5
NucleoSpin® 96 Blood QuickPure	2 x 96 / 4 x 96 / 24 x 96	740667.2 / .4 / .24
NucleoSpin® Blood L Vacuum	24	740954.24
NucleoSpin® 8 RNA Blood	12 x 8 / 60 x 8	740220 / .5
NucleoSpin® 96 RNA Blood	2 x 96 / 4 x 96	740225.2 / .4
NucleoMag® Blood 200 µL	1 x 96 / 4 x 96	744501.1 / .4
NucleoSpin® 8 Virus	12 x 8 / 60 x 8	740643 / .5
NucleoSpin® 8 Virus Core Kit	48 x 8	740451.4
NucleoSpin® 96 Virus	2 x 96 / 4 x 96	740691.2 / .4
NucleoSpin® 96 Virus Core Kit	4 x 96	740452.4
NucleoMag® Virus	1 x 96 / 4 x 96	744800.1 / .4
NucleoSpin® 96 DNA Plasma	1 x 96 / 4 x 96	740873.1 / .4
NucleoSpin® 96 DNA Plasma Core Kit	1 x 96 / 4 x 96	740874.1 / .4
NucleoSpin® DNA Plasma Midi	48	740303.48
NucleoSpin® DNA Plasma Midi Core Kit	48	740302.48

*Kits to be used for research purposes only.

HTP kits

Product*	Pack of	REF
Tissue and Cells		
NucleoSpin® 8 Tissue	12 x 8 / 60 x 8	740740 / .5
NucleoSpin® 8 Tissue Core Kit	48 x 8	740453.4
NucleoSpin® 96 Tissue	2 x 96 / 4 x 96 / 24 x 96	740741.2 / .4 / .24
NucleoSpin® 96 Tissue Core Kit	4 x 96	740454.4
NucleoSpin® 8 RNA	12 x 8 / 60 x 8	740698 / .5
NucleoSpin® 8 RNA Core Kit	48 x 8	740465.4
NucleoSpin® 96 RNA	2 x 96 / 4 x 96 / 24 x 96	740709.2 / . 4 / .24
NucleoSpin® 96 RNA Core Kit	4 x 96	740466.4
NucleoMag® Tissue	1 x 96 / 4 x 96 / 24 x 96	744300.1 / .4 / .24
NucleoMag® RNA	1 x 96 / 4 x 96	744350.1 / .4
NucleoSpin® 96 DNA FFPE	1 x 96 / 4 x 96	740240.1 / .4
NucleoMag® 96 DNA FFPE	1 x 96 / 4 x 96	744320.1 / .4
NucleoSpin® 96 Soil	2 x 96 / 4 x 96	740787.2 / .4
Environmental Testing		
NucleoSpin® 8 Food	12 x 8 / 60 x 8	740975 / .5
NucleoSpin® 96 Food	2 x 96 / 4 x 96 / 24 x 96	740976.2 / .4 / .24
NucleoSpin® 96 Soil	2 x 96 / 4 x 96	740787.2 / .4
NucleoSpin® 8 Plant II	12 x 8 / 60 x 8	740669 / .5
NucleoSpin® 8 Plant II Core Kit	48 x 8	740467.4
NucleoSpin® 96 Plant II	2 x 96 / 4 x 96 / 24 x 96	740663.2 / .4 / .24
NucleoSpin® 96 Plant II Core Kit	4 x 96	740468.4
NucleoMag® Plant	1 x 96 / 4 x 96 / 24 x 96	744400.1 / .4 / .24
Veterinary Testing		
NucleoMag® VET	1 x 96 / 4 x 96	744200.1 / .4
NucleoSpin® 8 Virus	12 x 8 / 60 x 8	740643 / .5
NucleoSpin® 8 Virus Core Kit	48 x 8	740451.4
NucleoSpin® 96 Virus	2 x 96 / 4 x 96	740691.2 / .4
NucleoSpin® 96 Virus Core Kit	4 x 96	740452.4
NucleoSpin® 8 Tissue	12 x 8 / 60 x 8	740740 / .5
NucleoSpin® 8 Tissue Core Kit	48 x 8	740453.4
NucleoSpin® 96 Tissue	2 x 96 / 4 x 96 / 24 x 96	740741.2 / .4 / .24
NucleoSpin® 96 Tissue Core Kit	4 x 96	740454.4
Protein Purification		
Protino® 96 Ni-NTA	1 x 96 / 4 x 96	745425.1 / .4
Protino® 96 Ni-IDA	1 x 96 / 4 x 96	745300.1 / .4

*Kits to be used for research purposes only.

Support

Application notes

MN offers a broad range of application notes. These application notes contain detailed descriptions on how to use medium and high throughput kits from MN on different robotic platforms. The number of available application notes increases continuously.

For detailed information please visit:

www.mn-net.com/HTP-application-notes

Personal support by MACHEREY-NAGEL experts

- MN supplies validated and released basic scripts on request.
- Extensive troubleshooting by MN experts.
- Specialists from R&D assist you to generate customized scripts for different robotic platforms.
- A dedicated HTP core-team of R&D and technical support helps to implement your HTP application

In order to benefit from these special services please use the inquiry form:
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or contact our Technical Support and Customer Service or Product Management:

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E-mail: tech-bio@mn-net.com

Product Management

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