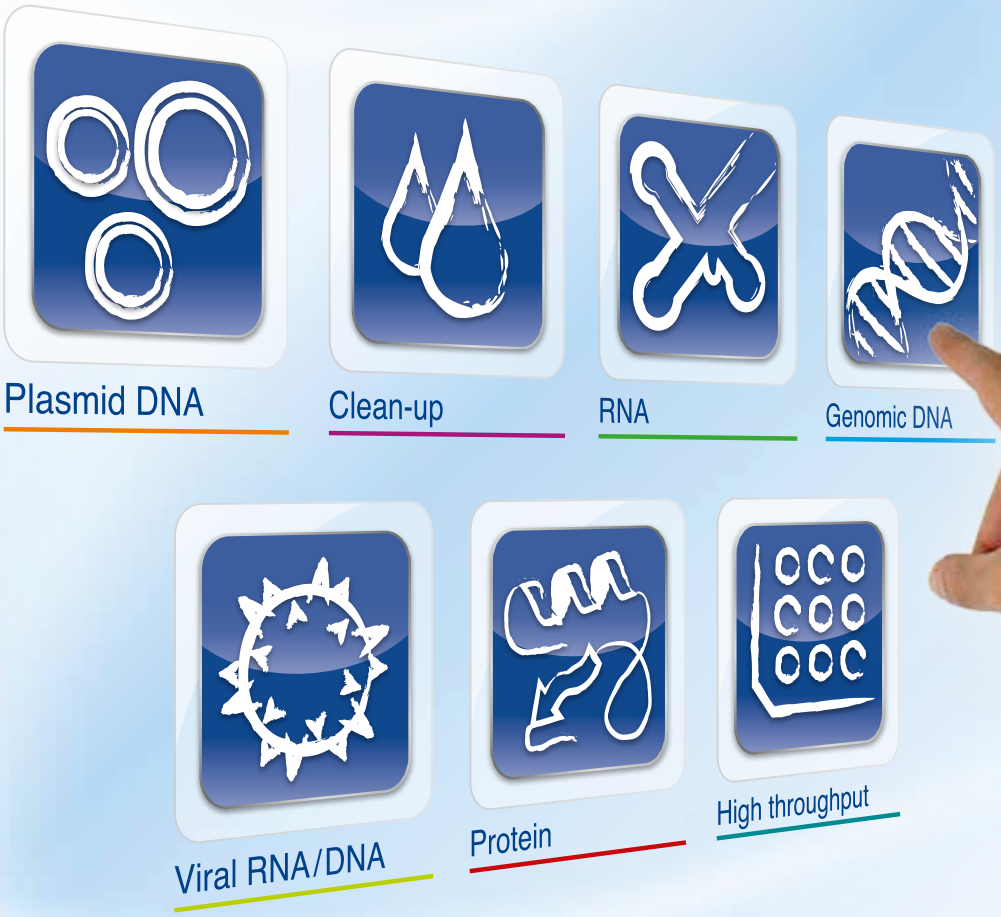
Product Selection Guide

Selection Guide

for DNA, RNA, and
protein purification products



MACHEREY-NAGEL
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MACHEREY-NAGEL Bioanalysis

Since 1993 MACHEREY-NAGEL has been successfully developing, producing, and worldwide marketing a comprehensive range of ready-to-use kits and consumables for purification of nucleic acids (DNA and RNA) and proteins. MN has become an important brand of high-quality products in sample preparation. Our products cover a broad range of applications and are highly esteemed in leading laboratories worldwide. The company provides innovative bio-separation technologies and exceptional products for a variety of industries: academic, industrial, clinical, CROs, and governmental research, genomics, nucleic acid based molecular diagnostics, genetic identity (including forensics, veterinary testing, GMO detection / quantification as well as animal species differentiation), gene expression profiling, gene therapy, and proteomics.

Selection guide for DNA, RNA, and protein purification products

This selection guide presents an overview of the broad portfolio of MN products for DNA, RNA, and protein purification. It also serves as a guide to find the most suitable product for every application from the growing range of MN Bioanalysis products.

How to use the selection guide

As seen on pages 2 and 3, the product groups are shown based on a list of commonly performed applications. After identifying the application and starting material / target molecule of your personal interest, follow the corresponding numbers to select the kits that relate to your lab focus.

Plasmid DNA

Application
Cloning
Sequencing
Transfection / -formation
Gene therapy
Gene regulation studies

Grade of purified plasmid DNA	*No.*
Transfection-grade plasmid DNA	No. 1–2
Transfection-grade, endotoxin-free plasmid DNA	No. 3–4
Plasmid DNA concentration and desalting	No. 5
Sequencing-grade plasmid DNA	No. 6–9

Clean-up

Application
Cloning
Sequencing (NGS, Sanger)
Nucleic acid amplification
Gene regulation studies
Forensics

Starting material	*No.*
PCR reaction mixtures	No. 10–14
Gel slices	No. 15–16
Pre-purified genomic DNA	No. 17–18
Pre-purified RNA	No. 19–20
Sequencing reaction mixtures	No. 21
Reaction mixtures from NGS library kits	No. 22

RNA

Application
Gene regulation studies
Gene expression profiling
Gene silencing
Molecular phenotyping
Drug development / screening
Transfection / -formation

Target molecule / starting material	*No.*
RNA from cells and tissue	No. 23–28
MicroRNA	No. 29–32
RNA, DNA, and protein	No. 33–35
RNA from blood	No. 36–38
RNA and microRNA from FFPE samples	No. 39–40
RNA from plant	No. 41
Poly(A) mRNA from total RNA	No. 42

Genomic DNA

Application
Genotyping
Functional genomics
Metagenomics
Animal breeding
Plant breeding
Forensics
Veterinary testing
Infection diagnostics
Environmental testing
Food testing

Starting material	*No.*
Blood and biological fluids	No. 43–50
Plasma	No. 51
Tissue and cells	No. 52–55
FFPE samples	No. 56
Forensic samples	No. 57–60
Plant and fungi	No. 61–65
Soil, sludge, and sediment	No. 66–67
Food and feed	No. 68–69

Viral RNA / DNA

Application
Molecular diagnostics
Infection diagnostics
Viral research / diagnostics
Veterinary testing

Starting material	*No.*
Cell-free body fluids	No. 70–74
Blood, tissue, feces	No. 75
Blood and biological fluids	No. 76

Protein

Application
Recombinant protein purification
Protein engineering
Protein structure analysis
Protein function analysis
Drug development

Affinity tag	*No*
His-tag proteins	No. 77–89
GST-tag proteins	No. 90–92

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No.	Product	REF	Min / Max amount of typical starting material	Binding capacity	Typical yield [µg] / recovery [%]	Ratio A_{260}/A_{280}	Elution volume	Fragment size	Approximate preparation time	Format	Technology	Typical downstream application	Features	No.
Plasmid DNA				*www.mn-net.com/plasmid*										**Plasmid DNA**
Transfection-grade plasmid DNA														**Transfection-grade plasmid DNA**
1	NucleoBond® Xtra Midi, Xtra Midi Plus, NucleoBond® Xtra Maxi, Xtra Maxi Plus	740410.10 / .50 / .100, 740412.10 / .50, 740414.10 / .50 / .100, 740416.10 / .50	< 200 mL (high copy), < 400 mL (low copy) *E. coli* culture (Midi), < 600 mL (high copy), < 1200 mL (low copy) *E. coli* culture (Maxi)	800 µg (Midi), 2000 µg (Maxi)	400 µg, 1000 µg	1.80–1.95		< 300 kbp	70 min/prep, 30 min/prep (Midi), 75 min/prep, 35 min/prep (Maxi)	Midi gravity-flow columns, Maxi gravity-flow columns	Anion-exchange chromatography	Transfection, cloning, sequencing	Lysate clarification and binding in one step NucleoBond® Xtra Plus: NucleoBond® Finalizer for rapid plasmid precipitation	1
2	NucleoBond® Xtra BAC	740436.10 / .25	250–750 mL *E. coli* culture (BAC)	150 µg	10–150 µg	1.80–1.95		< 300 kbp	75 min/2–4 preps	Maxi gravity-flow columns	Anion-exchange chromatography	Transfection, cloning, sequencing	Lysate clarification and binding in one step – no BAC shearing	2
Transfection-grade, endotoxin-free plasmid DNA														**Transfection-grade, endotoxin-free plasmid DNA**
3	NucleoBond® Xtra Midi EF, Xtra Midi Plus EF, NucleoBond® Xtra Maxi EF, Xtra Maxi Plus EF	740420.10 / .50, 740422.10 / .50, 740424.10 / .50, 740426.10 / .50	< 200 mL (high copy), < 400 mL (low copy) *E. coli* culture (Midi), < 600 mL (high copy), < 1200 mL (low copy) *E. coli* culture (Maxi)	800 µg (Midi), 2000 µg (Maxi)	400 µg, 1000 µg	1.80–1.95		< 300 kbp	85 min/prep, 45 min/prep (Midi), 90 min/prep, 50 min/prep (Maxi)	Midi gravity-flow columns, Maxi gravity-flow columns	Anion-exchange chromatography	Transfection of endotoxin-sensitive cells	Endotoxin level of < 0.05 EU/µg DNA NucleoBond® Xtra Plus EF: NucleoBond® Finalizer for rapid plasmid precipitation	3
4	NucleoBond® 96 Xtra EF	740430.1 / 4	1–5 mL *E. coli* culture	50 µg	2–4 µg (1.5 mL LB / TB in 96-well culture plates), 10–50 µg (5 mL LB / TB in glass tubes)	1.80–1.95		< 15 kbp < 300 kbp (without NucleoBond® Finalizer Plate)	120 min/plate	96-well plates	Anion-exchange chromatography	Transfection of endotoxin-sensitive cells	Endotoxin level of < 0.1 EU/µg DNA NucleoBond® Filter Plate for lysate clarification NucleoBond® Finalizer Plate for DNA precipitation	4
Plasmid DNA concentration and desalting														**Plasmid DNA concentration and desalting**
5	NucleoBond® Finalizer, Finalizer Plus, Finalizer Large, Finalizer Large Plus	740519.20, 740520.20, 740418.20, 740419.20	5 mL anion-exchange chromatography eluate, 15 mL anion-exchange chromatography eluate	500 µg, 2000 µg	60–90 %	1.80–1.95	200–800 µL, 400–1000 µL	2–50 kbp	5 min/prep	Syringe filters	Filtration		Fast plasmid precipitation	5
Molecular biology-/sequencing-grade plasmid DNA														**Molecular biology-/sequencing-grade plasmid DNA**
6	NucleoSpin® Plasmid, NucleoSpin® Plasmid (NoLid)	740588.10 / .50 / .250, 740499.50 / .250	2–10 mL *E. coli* culture	50 µg	25 µg (5 mL *E. coli* culture, high copy), 45 µg (10 mL *E. coli* culture, high copy)	1.80–1.85	50 µL	< 15 kbp	25 min/6 preps	Mini spin columns	Silica-membrane technology	Transformation, cloning, sequencing, PCR, restriction digestion	High-pure plasmid mini prep	6
7	NucleoSpin® Plasmid EasyPure	740727.10 / .50 / .250	2–10 mL *E. coli* culture	35 µg	15–30 µg (3 mL *E. coli* culture, high copy)	1.80–1.85	50 µL	< 15 kbp	14 min/6 preps	Mini spin columns	Silica-membrane technology	Transformation, cloning, sequencing, PCR, restriction analysis	Ultra-fast plasmid mini prep – Liquid RNase included	7
8	NucleoSpin® 8 / 96 Plasmid, NucleoSpin® 8 / 96 Plasmid Core Kit*	740621 / .5, 740625.1 / .4 / .24, 740461.4, 740616.4	1–5 mL *E. coli* culture	20 µg	4–6 µg (1 mL *E. coli* culture, high copy)	1.70–1.85	75–150 µL	< 15 kbp	45 min/6 strips or plate	8-well strips, 96-well plates	Silica-membrane technology	Transformation, cloning, sequencing, PCR, restriction digestion	Flexible format - flexible processing (vacuum / centrifugation) – Automation possible	8
9	NucleoSpin® 96 Flash	740618.2 / .4 / .24	1.1–1.3 mL (high copy), 1.1–3.9 mL (BACs) *E. coli* culture		8 µg (1.3 mL *E. coli* culture, high copy), 1 µg (1.3 mL *E. coli* culture, BAC)			< 250 kbp	90 min/2 plates	96-well plates	Alkaline lysis, filtration, and precipitation	Transformation, cloning, sequencing, PCR, restriction digestion	No BAC shearing	9
Clean-up				*www.mn-net.com/cleanup*										**DNA Clean-up**
PCR clean-up														**PCR clean-up**
10	NucleoSpin® Gel and PCR Clean-up	740609.10 / .50 / .250	< 400 µL PCR reaction mixture	25 µg	70–95 %	1.8–1.9	15–30 µL	50 bp–approx. 20 kbp	10 min/6 preps	Mini spin columns	Silica-membrane technology	Cloning, sequencing, PCR, restriction digestion	2 in 1 kit – PCR clean-up and gel extraction	10
11	NucleoTraP® CR	740587 / .10	< 400 µL PCR reaction mixture	0.6 µg/µL suspension	70–80 %	1.7–1.9	20–50 µL	100 bp–approx. 50 kbp	45 min/6 preps	Aqueous suspension	Silica-matrix technology	Cloning, sequencing, PCR, restriction digestion	No shearing of large PCR fragments	11
12	NucleoSpin® 8 / 96 PCR Clean-up, NucleoSpin® 8 / 96 PCR Clean-up Core Kit*	740668 / .5, 740658.1 / .2 / .4 / .24, 740463.4, 740464.4	< 100 µL PCR reaction mixture	15 µg	75–95 %	1.7–1.8	75–150 µL	65 bp–10 kbp	30 min/6 strips, 45 min/plate	8-well strips, 96-well plates	Silica-membrane technology	Cloning, sequencing, PCR, restriction digestion	Flexible format – flexible processing (vacuum / centrifugation) – automation possible	12
13	NucleoFast® 96 PCR Clean-up kit, NucleoFast® 96 PCR Plates	743500.4, 743100.10 / .50	20–300 µL PCR reaction mixture		40–95 %	1.7–1.8	25–100 µL	> 150 bp	20 min/plate	96-well plates	Ultrafiltration	Cloning, sequencing, PCR, restriction digestion	Fast procedure	13
14	NucleoMag® 96 PCR	744100.1 / .4 / .24	< 50 µL PCR reaction mixture	0.3 µg/µL beads	80–95 %	1.7–1.9	25–100 µL	150 bp–approx. 10 kbp	30–45 min/96 preps	Superparamagnetic beads	Magnetic-bead technology	Cloning, sequencing, PCR, restriction digestion	Easily adapted to automated use	14
Gel extraction														**Gel extraction**
15	NucleoSpin® Gel and PCR Clean-up	740609.10 / .50 / .250	< 400 mg agarose gel	25 µg	70–95 %	1.8–1.9	15–30 µL	50 bp–approx. 20 kbp	10 min/6 preps	Mini spin columns	Silica-membrane technology	Cloning, sequencing, PCR, restriction digestion	2 in 1 kit – PCR clean-up and gel extraction	15
16	NucleoTrap®	740584 / .10	< 200 mg agarose gel	0.6 µg/µL suspension	50–90 %	1.7–1.9	20–50 µL	20 bp–approx. 50 kbp	60 min/6 preps	Aqueous suspension	Silica-matrix technology	Cloning, sequencing, PCR, restriction digestion	No shearing of large PCR fragments	16
Genomic DNA clean-up														**Genomic DNA clean-up**
17	NucleoSpin® gDNA Clean-up	740230.10 / .50 / .250	< 150 µL solution containing < 25 µg DNA	50 µg	80–90 %	1.8–1.9	50–100 µL	100 bp–approx. 50 kbp	15 min/10 preps	Mini spin columns	Silica-membrane technology	Cloning, sequencing, qPCR, restriction digestion	Special buffer chemistry for clean-up of genomic DNA	17
18	NucleoSpin® gDNA Clean-up XS	740904.10 / .50 / .250	< 400 µL solution containing < 2 µg DNA	3 µg	60–70 %	1.8–1.9	6–10 µL	100 bp–approx. 50 kbp	20 min/6 preps	Mini spin columns – XS design	Silica-membrane technology	Cloning, sequencing, qPCR, restriction digestion	For small amounts of genomic DNA (e.g., forensic samples)	18
RNA clean-up														**RNA clean-up**
19	NucleoSpin® RNA Clean-up	740948.10 / .50 / .250	< 200 µL phenol / chloroform extract or reaction mixture	200 µg	85–95 %	1.9–2.1	40–120 µL	> 200 nt	20 min/6 preps	Mini spin columns	Silica-membrane technology	Enzymatic labeling reactions, qRT-PCR	Easy clean-up of pre-purified RNA	19
20	NucleoSpin® RNA Clean-up XS	740903.10 / .50 / .250	< 300 µL RNA solution containing < 90 µg RNA	110 µg	85–95 %	1.9–2.1	5–30 µL	> 200 nt	20 min/6 preps	Mini spin columns – XS design	Silica-membrane technology	Enzymatic labeling reactions, qRT-PCR	Easy clean-up and concentration of pre-purified RNA	20
Dye-terminator removal														**Dye-terminator removal**
21	NucleoSEQ®	740523.10 / .50 / .250	20 µL sequencing reaction mixture				20 µL		5 min/prep (excl. hydration)	Mini spin columns	Gel-filtration	Sanger sequencing	Efficient dye terminator removal	21
NGS clean-up and size selection														**NGS Clean-up and size selection**
22	NucleoMag® NGS Clean-up and Size Select	744970.5 / .50 / .500	17.5 pg–5 µg nucleic acid in NGS** reaction mixture		> 80%	1.9–2.1	10–100 µL	tunable	30–45 min/96 preps	Superparamagnetic beads	Magnetic-bead technology	NGS** library preparation	2 in 1 kit – Clean-up and size selection	22
RNA				*www.mn-net.com/RNA*										**RNA**
RNA from cells and tissue														**RNA from cells and tissue**
23	NucleoSpin® RNA Plus	740984.10 / .50 / .250	< 1 x 10^7 cells, < 10^9 bacterial cells, < 10^8 yeast cells, < 30 mg human / animal tissue	200 µg	40–60 µg (5 x 10^6 HeLa cells), 80–100 µg (20 mg mouse liver), 40–70 µg (20 mg mouse kidney), 30–60 µg (5 mg mouse spleen)	1.9–2.1	30–120 µL	> 200 nt	20 min/6 preps	Mini spin columns	Silica-membrane technology	qRT-PCR, NGS**, blotting, array technology	Filtration and DNA removal in one step with one column – NucleoSpin® gDNA Removal Column – no use of ß-Mercaptoethanol / TCEP necessary	23
24	NucleoSpin® RNA	740955.10 / .50 / .250	< 5 x 10^6 cells, < 10^9 bacterial cells, < 10^8 yeast cells, < 30 mg human / animal tissue	200 µg	14 µg (10^6 HeLa cells), 70 µg (10^8 bacterial cells),	1.9–2.1	40–120 µL	> 200 nt	35 min/6 preps	Mini spin columns	Silica-membrane technology	qRT-PCR, NGS**, blotting, array technology	rDNase and NucleoSpin® Filters included	24
25	NucleoSpin® RNA XS	740902.10 / .50 / .250	1–10^5 cells, < 5 mg human / animal tissue	110 µg	0.1–1.5 ng (10^3 HeLa cells), 1–1.5 µg (10^5 HeLa cells)	1.9–2.1	5–30 µL	> 200 nt	35 min/6 preps	Mini spin columns – XS design	Silica-membrane technology	qRT-PCR, NGS**, blotting, array technology	For smallest samples – rDNase and NucleoSpin® Filters included	25
26	NucleoSpin® RNA Midi	740962.20	< 5 x 10^7 cells, < 10^{10} bacterial cells, < 3 x 10^8 yeast cells, < 200 mg human / animal tissue	700 µg	620 µg (4 x 10^7 HeLa cells)	1.9–2.1	500–1000 µL	> 200 nt	80 min/4 preps	Midi spin columns	Silica-membrane technology	qRT-PCR, NGS**, blotting, array technology	Large-scale RNA preparation – rDNase and NucleoSpin® Filters included	26
27	NucleoSpin® 8 / 96 RNA, NucleoSpin® 8 / 96 RNA Core Kit*	740698 / .5, 740709.2 / .4 / .24, 740465.4, 740466.4	< 2 x 10^6 cells, < 20 mg human / animal tissue (vacuum)	100 µg	20 µg (2 x 10^6 HeLa cells), 20 µg (20 mg mouse liver)	1.9–2.1	50–130 µL	> 200 nt	45 min/6 strips, 70 min/plate	8-well strips, 96-well plates	Silica-membrane technology	qRT-PCR, NGS**, blotting, array technology	Flexible format – flexible processing (vacuum/centrifugation) – automation possible rDNase included	27
28	NucleoMag® 96 RNA	744350.1 / .4	< 2 x 10^6 cells, < 20 mg human / animal tissue	0.3 µg/µL beads	< 30 µg	1.9–2.1	50–200 µL	> 200 nt	120 min/96 preps	Superparamagnetic beads	Magnetic-bead technology	qRT-PCR, NGS**, blotting, array technology	rDNase included – easily adapted to automated use	28
MicroRNA														**MicroRNA**
29	NucleoSpin® miRNA	740971.10 / .50 / .250	< 10^7 cells, < 30 mg human / animal tissue, < 50 mg plant tissue, < 150 µL reaction mixture	200 µg	10 µg small RNA, 95 µg large RNA (10^7 HeLa cells)	1.9–2.1	30–100 µL	< 200 nt (small RNA), > 200 nt (large RNA)	45 min/6 preps (small and large RNA), 35 min/6 preps (small RNA only)	Mini spin columns	Silica-membrane technology	qRT-PCR, NGS**, blotting, array technology	Fractionation of small and large RNA – no organic solvents – rDNase and NucleoSpin® Filters included	29
30	NucleoSpin® miRNA Plasma	740981.10 / .50 / .250	< 300 µL plasma, serum (< 900 µL with multiple loading steps)	200 µg	Depending on sample amount and quality		20–50 µL	< 1000 nt	40 min/10 preps (w/o DNA digestion) 70 min/10 preps (with DNA digestion)	Mini spin columns	Silica-membrane technology	qRT-PCR, NGS**, blotting, array technology	Efficient purification of fragmented RNA and DNA	30
31	Exosome Precipitation Solution (Serum / Plasma)	740398.1 / .6 / .30	100 µL–1 mL serum / plasma						45 min/6 preps	Buffer set	Precipitation solution	miRNA isolation, exosome studies	Enabling miRNA purification from exosomes	31
32	Exosome Precipitation Solution (Urine)	740399.12 / .50 / .250	1 mL–10 mL urine						45 min/6 preps	Buffer set	Precipitation solution	miRNA isolation, exosome studies	Enabling miRNA purification from exosomes	32
RNA, DNA, and protein														**RNA, DNA, and protein**
33	NucleoSpin® TriPrep	740966.10 / .50 / .250	< 5 x 10^6 cells, < 30 mg human / animal tissue, < 100 mg plant tissue	200 µg (RNA), 10 µg (DNA)	< 70 µg RNA, < 6 µg DNA, < 1200 µg protein	1.9–2.1 (RNA), 1.7–1.9 (DNA)	40–120 µL (RNA), 100 µL (DNA), 10–100 µL (protein)	> 200 nt (RNA), < 30 kbp (DNA), 15–300 kDa (protein)	30 min/6 preps (RNA), 45 min/6 preps (RNA and DNA), 35 min/6 preps (protein)	Mini spin columns	Silica-membrane technology	qRT-PCR, blotting, array technology, SDS-PAGE / Western blotting	RNA, DNA, and proteins – three molecules in separated fractions, one procedure	33
34	NucleoSpin® RNA/Protein	740933.10 / .50 / .250	< 5 x 10^6 cells, < 30 mg human / animal tissue, < 100 mg plant tissue	200 µg (RNA)	< 70 µg RNA, < 1200 µg protein	1.9–2.1 (RNA)	40–100 µL (RNA), 10–100 µL (protein)	> 200 nt (RNA), 15–300 kDa (protein)	30 min/6 preps (RNA), 35 min/6 preps (protein)	Mini spin columns	Silica-membrane technology	qRT-PCR, blotting, array technology, SDS-PAGE / Western blotting	RNA and proteins – two molecules in separated fractions, one procedure	34
35	NucleoSpin® RNA/DNA Buffer Set	740944	See NucleoSpin® RNA, NucleoSpin® RNA XS, NucleoSpin® miRNA, NucleoSpin® RNA Blood, NucleoSpin® RNA Plant, NucleoSpin® RNA/Protein		RNA yield and quality identical to NucleoSpin® RNA kits	< 6 µg DNA, 1.7–2.0 (DNA)	100 µL (DNA)	< 30 kbp (DNA)	5 min/6 preps (DNA), For RNA, see NucleoSpin® RNA kits combined with bufferset	Buffer set for elution of DNA in combination with RNA preps		qRT-PCR, NGS**, blotting, array technology, qPCR, enzyme reactions	RNA and DNA – two molecules in separated fractions, one procedure	35
RNA from blood														**RNA from blood**
36	NucleoSpin® RNA Blood	740200.10 / .50	< 400 µL whole blood (fresh or frozen)	200 µg	1–8 µg (400 µL whole blood)	1.9–2.1	40–120 µL	> 200 nt	55 min/6 preps	Mini spin columns	Silica-membrane technology	qRT-PCR, NGS**, blotting, array technology	No selective erythrocyte lysis – direct lysis of whole blood – rDNase included	36
37	NucleoSpin® RNA Blood Midi	740210.20	400–1300 µL whole blood (fresh or frozen)	700 µg	4–26 µg (1.3 mL whole blood)	1.9–2.1	200–400 µL	> 200 nt	75 min/6 preps	Midi spin columns	Silica-membrane technology	qRT-PCR, NGS**, blotting, array technology	No selective erythrocyte lysis – direct lysis of whole blood – rDNase included	37
38	NucleoSpin® 8 / 96 RNA Blood	740220 / .5, 740225.2 / .4	< 400 µL whole blood (fresh or frozen)	100 µg	1–8 µg (400 µL whole blood)	1.9–2.1	50–130 µL	> 200 nt	60 min/6 strips, 100 min/plate	8-well strips, 96-well plates	Silica-membrane technology	qRT-PCR, NGS**, blotting, array technology	No selective erythrocyte lysis – direct lysis of whole blood – rDNase included	38
RNA and microRNA from FFPE samples														**RNA and DNA from FFPE samples**
39	NucleoSpin® totalRNA FFPE	740982.10 / .50 / .250	< 10 sections (10 µm) with < 50 mg tissue	200 µg	RNA yield and quality depending on sample amount and quality	30–50 µL	Depending on sample material	70 min/6 preps (90 min incl. optional rDNase digest)	Mini spin columns	Silica-membrane technology	qRT-PCR	Special Paraffin Dissolver (patent pending) – no xylene necessary – high decrosslinking efficiency	39
40	NucleoSpin® totalRNA FFPE XS	740969.10 / .50 / .250	< 10 sections (10 µm) with < 5 mg tissue	100 µg	RNA yield and quality depending on sample amount and quality	5–30 µL,	Depending on sample material	70 min/6 preps (90 min incl. optional rDNase digest)	Mini spin columns – XS design	Silica-membrane technology	qRT-PCR	Special Paraffin Dissolver (patent pending) – no xylene necessary – high decrosslinking efficiency	40
RNA from plant														**RNA from plant**
41	NucleoSpin® RNA Plant	740949.10 / .50 / .250	< 100 mg (wet weight), < 20 mg (dry weight) plant tissue	200 µg	3–70 µg (100 mg plant tissue)	1.9–2.1	40–60 µL	> 200 nt	30 min/6 preps	Mini spin columns	Silica-membrane technology	qRT-PCR, NGS**, blotting, array technology	Two lysis buffers – rDNase and NucleoSpin® Filters included	41
Poly(A) mRNA from total RNA														**Poly(A) mRNA from total RNA**
42	NucleoTrap® mRNA Mini, NucleoTrap® mRNA Midi	740655, 740656	< 250 µg total RNA (Mini), < 1000 µg total RNA (Midi)	5 µg poly(A) mRNA/ 20 µL suspension	10 µg mRNA, 40 µg mRNA	1.9–2.1	10–20 µL	50 nt–20 knt	30 min/6 preps	Oligo(dT) latex bead suspension	Affinity beads	qRT-PCR, NGS**, array technology	Fast mRNA enrichment	42

* Kit mainly for use on automation platforms, for additional accessories and detailed information see *www.mn-net.com/HTapplications*; ** Next generation sequencing.

Genomic DNA · Viral RNA and DNA

Part I | Part II | Part III

No.	Product	REF	Min / Max amount of typical starting material	Binding capacity	Typical yield [µg] / recovery [%]	Ratio A_{260}/A_{280}	Elution volume	Fragment size	Approximate preparation time	Format	Technology	Typical downstream application	Features	No.
Genomic DNA				*www.mn-net.com/gDNA*										**Genomic DNA**
Genomic DNA from blood and biological fluids				*www.mn-net.com/DNAblood*										**Genomic DNA from blood and biological fluids**
43	NucleoSpin® Blood	740951.10 / .50 / .250	5–200 µL blood / serum / plasma, < 5 x 10^6 human / animal cells	60 µg	4–6 µg (200 µL blood)	1.6–1.9	60–200 µL	200 bp–approx. 50 kbp	30 min/prep	Mini spin columns	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	High-quality DNA from blood	43
44	NucleoSpin® Blood QuickPure	740569.10 / .50 / .250	5–200 µL blood / serum / plasma, < 5 x 10^6 human / animal cells	50 µg	4–6 µg (200 µL blood)	1.6–1.9	30–50 µL	200 bp–approx. 50 kbp	25 min/prep	Mini spin columns	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	Fast procedure, one combined washing and drying step	44
45	NucleoSpin® Dx Blood	740899.50 / .250	200 µL human blood (fresh or frozen, EDTA, citrate or heparin treated)	60 µg	3–5 µg (200 µL blood)	1.9–2.1	50–200 µL	200 bp–approx. 50 kbp	30 min/prep	Mini spin columns	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	CE-IVD marked	45
46	NucleoSpin® Blood L	740954.20	0.2–2 mL blood / serum / plasma, < 2 x 10^7 human / animal cells	250 µg	40–60 µg (2 mL blood)	1.6–1.9	120–200 µL	200 bp–approx. 50 kbp	60 min/prep	Midi spin columns	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	For processing of larger blood volumes	46
47	Nucleospin® Blood XL	740950.10 / .50	2–10 mL blood / serum / plasma, < 10^9 human / animal cells	700 µg	200–300 µg (10 mL blood)	1.6–1.9	600–2000 µL	200 bp–approx. 50 kbp	60 min/prep	Maxi spin columns	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	For processing of large blood volumes	47
48	NucleoSpin® 8 / 96 Blood, NucleoSpin® 8 / 96 Blood Core Kit*	740664 / .5, 740665.1 / .4 / .24, 740455.4, 740456.4	< 200 µL blood / serum / plasma, < 2 x 10^6 human / animal cells	20 µg	4–6 µg (200 µL blood)	1.8–1.9	100 µL	300 bp–approx. 50 kbp	35 min/6 strips, 70 min/plate	8-well strips, 96-well plates	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	Flexible format – flexible processing (vacuum / centrifugation) – automation possible	48
49	NucleoSpin® 8 / 96 Blood QuickPure	740666 / .5,740667.2 / .4 / .24	< 200 µL blood / serum / plasma, < 5 x 10^6 human / animal cells	60 µg	4–6 µg (200 µL blood)	1.6–1.9	75–100 µL	300 bp–approx. 50 kbp	60 min/12 strips, 60 min/2 plates	8-well strips, 96-well plates	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	Fast procedure and flexible format – manual processing by centrifuge	49
50	NucleoMag® Blood 200 µL, NucleoMag® Blood 3 mL	744501.1 / .4, 744502.1	< 200 µL blood (fresh or frozen, EDTA or citrate treated), < 3 mL blood (fresh or frozen, EDTA or citrate treated)	0.4 µg/µL beads	2–8 µg (200 µL blood) 100–130 µg (3 mL blood)	1.6–1.9	50–100 µL, 1000 µL	20 bp–approx. 50 kbp	45 min/96 preps, 60 min/24 preps	Superparamagnetic beads	Magnetic-bead technology	qPCR, NGS**, blotting, enzymatic reactions	Easily adapted to automated use	50
Genomic DNA from plasma				*www.mn-net.com/DNAblood*										**Genomic DNA from plasma**
51	NucleoSpin® Plasma XS	740900.10 / .50 / .250	< 240 µL plasma / serum < 720 µL plasma / serum (multiple loading steps)	50 µg	25 pg–25 ng (240 µL plasma)		5–30 µL	> 50 bp	20 min/6 preps	Mini spin columns (XS design)	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	Special buffer chemistry for circulating DNA from plasma / serum	51
Genomic DNA from tissue and cells				*www.mn-net.com/DNAtissue*										**Genomic DNA from tissue and cells**
52	NucleoSpin® Tissue	740952.10 / .50 / .250	< 25 mg human / animal tissue, 10^2–10^7 human / animal cells	60 µg	20–35 µg (25 mg mouse liver)	1.7–1.9	60–100 µL	200 bp–approx. 50 kbp	20 min/prep (excl. lysis)	Mini spin columns	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	Allround genomic DNA purification kit	52
53	NucleoSpin® Tissue XS	740901.10 / .50 / .250	0.025–10 mg human / animal tissue, 10–10^4 human / animal cells	50 µg	0.1–0.5 ng (10^2 HeLa cells) 10–50 ng (10^4 HeLa cells)	1.7–1.9	5–30 µL	200 bp–approx. 50 kbp	20 min/prep (excl. lysis)	Mini spin columns (XS design)	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	Genomic DNA from smallest samples	53
54	NucleoSpin® 8 / 96 Tissue, NucleoSpin® 8 / 96 Tissue Core Kit*	740740 / .5, 740741.2 / .4 / .24, 740453.4, 740454.4	< 20 mg human / animal tissue, < 10^6 human / animal cells	40 µg	15–25 µg (20 mg human / animal tissue)	1.8–1.9	100–200 µL	300 bp–approx. 50 kbp	20 min/6 strips (excl. lysis), 60 min/plate (excl. lysis)	8-well strips, 96-well plates	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	Flexible format – flexible processing (vacuum / centrifugation) – automation possible	54
55	NucleoMag® 96 Tissue	744300.1 / .4 / .24	< 20 mg human / animal tissue, < 10^6 human / animal cells	0.4 µg/µL beads	10–20 µg (20 mg human / animal tissue)	1.6–1.9	50–200 µL	300 bp–approx. 50 kbp	120 min/96 preps (excl. lysis)	Superparamagnetic beads	Magnetic-bead technology	qPCR, NGS**, blotting, enzymatic reactions	Easily adapted to automated use	55
Genomic DNA from FFPE samples				*www.mn-net.com/DNAFFPE*										**Genomic DNA from FFPE samples**
56	NucleoSpin® DNA FFPE XS	740980.10 / .50 / .250	< 7 sections (10 µm) of 250 mm^2, < 15 mg paraffin	110 µg	Depending on sample amount and quality		5–30 µL	50 bp–approx. 50 kbp	70 min/6 preps (excl. lysis)	Mini spin columns (XS design)	Silica-membrane technology	qPCR	Special Paraffin Dissolver (patent pending) – no xylene necessary – high decrosslinking efficiency	56
Genomic DNA from forensic samples				*www.mn-net.com/DNAforensic*										**Genomic DNA from forensic samples**
57	NucleoSpin® Forensic Filters NucleoSpin® Forensic Filters (Bulk)	740988.10 / .50 / .250 740988.50B / .250B / .1000B	Swabs, denim, cigarette butts, and other solid sample carriers							Mini spin columns	Semi-permeable basket	DNA isolation	Easy sample preparation without buffer leakage	57
58	NucleoSpin® DNA Trace	740942.4 / .25	Forensic samples, dried blood spots, chewing gum, cigarette filters	20 µg	Depending on sample amount and quality	1.7–1.9	100 µL	200 bp–approx. 50 kbp	60 min/prep	Funnel columns	Silica-membrane technology	qPCR, enzymatic reactions	NucleoSpin® Funnel Columns: large buffer volumns, small elution volumes	58
59	NucleoSpin® 8 / 96 Trace	740722.1 / .5, 740726.2 / .4	Forensic samples, buccal swabs, dried blood spots, cigarette filters	20 µg	Depending on sample amount and quality	1.8–1.9	50–100 µL	200 bp–approx. 50 kbp	30 min/6 strips, 70 min/plate	8-well strips, 96-well plates	Silica-membrane technology	qPCR, enzymatic reactions	Flexible format - flexible processing (vacuum / centrifugation) – automation possible	59
60	NucleoMag® 96 Trace NucleoMag® Forensic	744600.1 / .4 / .24 744650.1 / .4	Buccal swabs Casework samples, contact traces (e.g., dried blood spots, cigarette filters, swabs)	0.4 µg/µL beads 0.4 µg/µL beads	Depending on sample amount and quality Depending on sample amount and quality	1.6–1.9 1.8–1.9	50–200 µL 25–50 µL	300 bp–approx. 50 kbp 300 bp–approx. 50 kbp	120 min/96 preps 120 min/96 preps	Superparamagnetic beads Superparamagnetic beads	Magnetic-bead technology Magnetic-bead technology	qPCR, enzymatic reactions PCR, STR analysis, enzymatic reactions	Easily adapted to automated use One tube procedure for minimal risk of cross-contamination	60
Genomic DNA from plant and fungi				*www.mn-net.com/DNAplant*										**Genomic DNA from plant and fungi**
61	NucleoSpin® Plant II	740770.10 / .50 / .250	< 100 mg (wet weight), < 20 mg (dry weight) plant tissue	50 µg	1–30 µg (100 mg plant tissue, wet weight)	1.8–1.9	50–100 µL	50 bp–approx. 50 kbp	30 min/prep	Mini spin columns	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	Two lysis buffers (based on CTAB or SDS) for optimal lysis	61
62	NucleoSpin® Plant II Midi	740771.20	< 400 mg (wet weight), < 80 mg (dry weight) plant tissue	200 µg	10–100 µg (400 mg plant tissue, wet weight)	1.8–1.9	200–400 µL	50 bp–approx. 50 kbp	90 min/prep	Midi spin columns	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	For processing of large plant samples – NucleoSpin® Midi Filters and RNase A included	62
63	NucleoSpin® Plant II Maxi	740772.10	< 1500 mg (wet weight), < 300 mg (dry weight) plant tissue	500 µg	50–300 µg (1500 mg plant tissue, wet weight)	1.8–1.9	1000–2000 µL	50 bp–approx. 50 kbp	90 min/prep	Maxi spin columns	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	For processing of larger plant samples – NucleoSpin® Maxi Filters and RNase A included	63
64	NucleoSpin® 8 / 96 Plant II, NucleoSpin® 8 / 96 Plant II Core Kit*	740669 / .5, 740663.2 / .4 / .24, 740467.4, 740468.4	20–100 mg (wet weight) plant tissue	30 µg	1–30 µg (100 mg plant tissue, wet weight)	1.8–1.9	100–200 µL	50 bp–approx. 50 kbp	60 min/6 strips or plate (excl. lysis)	8-well strips, 96-well plates	Silica-membrane technology	qPCR, NGS**, blotting, enzymatic reactions	Flexible format – flexible processing (vacuum / centrifugation) – automation possible	64
65	NucleoMag® 96 Plant	744400.1 / .4 / .24	20–50 mg (wet weight) plant tissue	0.4 µg/µL beads	10–20 µg (50 mg plant tissue, wet weight)	1.6–1.9	50–200 µL	300 bp–approx. 50 kbp	120 min/96 preps	Superparamagnetic beads	Magnetic-bead technology	qPCR, NGS**, blotting, enzymatic reactions	Easily adapted to automated use	65
Genomic DNA from soil				*www.mn-net.com/DNAsoil*										**Genomic DNA from soil**
66	NucleoSpin® Soil	740780.10 / .50. / .250	< 500 mg soil / sludge / sediment	50 µg	2–10 µg (500 mg soil)	1.6–1.8	30–100 µL	50 bp–approx. 50 kbp	90 min/10 preps	Mini spin columns	Silica-membrane technology	qPCR, NGS**, blotting, array technology	Two lysis buffers and a special additive for optimal lysis and complete removal of inhibitors – NucleoSpin® Bead Tubes and NucleoSpin® Inhibitor Removal Column included	66
67	NucleoSpin® 96 Soil	740787.2 / .4	< 500 mg soil / sludge / sediment	50 µg	2–10 µg (500 mg soil)	1.6–1.8	100–200 µL	50 bp–approx. 50 kbp	150 min/plate		Silica-membrane technology	qPCR, NGS**, blotting, array technology	NucleoSpin® Bead Tubes and NucleoSpin® Inhibitor Removal Plate included	67
Genomic DNA from food and feed				*www.mn-net.com/DNAfood*										**Genomic DNA from food and feed**
68	NucleoSpin® Food	740945.10 / .50 / .250	5–200 mg food / feed	30 µg	0.1–10 µg (200 mg food)	1.6–1.9	100 µL	300 bp–approx. 50 kbp	30 min/6 preps	Mini spin columns	Silica-membrane technology	qPCR, blotting, enzymatic reactions	Suitable for complex food matrices - complete removal of PCR inhibitors	68
69	NucleoSpin® 8 / 96 Food	740975 / .5, 740976.2 / .4 / .24	< 200 mg food / feed	30 µg	0.1–10 µg (200 mg food)	1.6–1.9	100–200 µL	300 bp–approx. 50 kbp	60 min/6 strips (excl. lysis), 120 min/plate (excl. lysis)	8-well strips, 96-well plates	Silica-membrane technology	qPCR, blotting, enzymatic reactions	Flexible format - flexible processing (vacuum / centrifugation) – automation possible – complete removal of PCR inhibitors	69
Viral RNA and DNA				*www.mn-net.com / virus*										**Viral RNA and DNA**
Viral RNA / DNA from cell-free body fluids														
70	NucleoSpin® Virus	740983.10 / .50 / .250	< 200 µL serum / plasma / cell-free biological fluid, 400 µL (with two steps)	25 µg	Depending on sample amount and quality		30 µL	100 bp–approx. 50 kbp	50 min/6 preps		Silica-membrane technology	qRT-PCR, qPCR, enzymatic reactions	For RNA and DNA viruses – Carrier RNA and Liquid Proteinase K included	70
71	NucleoSpin® RNA Virus F	740958	< 1 mL serum / plasma / cell-free biological fluid	30 µg	Depending on sample amount and quality		50–100 µL	100 bp–approx. 50 kbp	45 min/6 preps	Funnel columns	Silica-membrane technology	qRT-PCR, enzymatic reactions	NucleoSpin® Funnel Columns: large buffer volumns, small elution volumes	71
72	NucleoSpin® Dx Virus	740895.50 / .250	150 µL serum / plasma	40 µg	Depending on sample amount and quality		50 µL	100 bp–approx. 50 kbp	30 min/6 preps	Mini spin columns	Silica-membrane technology	qRT-PCR, qPCR, enzymatic reactions	CE-IVD marked – Carrier RNA and Proteinase K included	72
73	NucleoSpin® 8 / 96 Virus, NucleoSpin® 8 / 96 Virus Core Kit*	740643 / .5, 740691.2 / .4, 740451.4, 740452.4	< 150 µL serum / plasma / cell-free biological fluid	40 µg	Depending on sample amount and quality		70–100 µL	100 bp–approx. 50 kbp	60 min/6 strips or plate	8-well strips, 96-well plates	Silica-membrane technology	qRT-PCR, qPCR, enzymatic reactions	Flexible format – flexible processing (vacuum / centrifugation) – automation possible – Proteinase K included	73
74	NucleoMag® 96 Virus	744800.1 / .4	< 150 µL serum / plasma / cell-free biological fluid	0.4 µg/µL beads	Depending on sample amount and quality		50–100 µL	100 bp–approx. 50 kbp	120 min/96 preps	Superparamagnetic beads	Magnetic-bead technology	qRT-PCR, qPCR, enzymatic reactions	Proteinase K included – easily adapted to automated use	74
Viral RNA / DNA from blood, tissue, feces														
75	NucleoMag® VET	744200.1 / .4	< 200 µL whole blood, serum, plasma, < 10–30 mg tissue (e.g. ear notches), < 200 µL feces, 200 µL swab wash solution	0.4 µg/µL beads	Depending on sample amount and quality		50–100 µL	300 bp–approx. 50 kbp	45–120 min/96 preps		Magnetic-bead technology	qRT-PCR, qPCR, enzymatic reactions	Allround kit for veterinary diagnostics – one tube procedure for minimal risk of cross-contamination	75
Viral RNA / DNA from blood and biological fluids														
76	NucleoSpin® Blood	740951.10 / .50 / .250	5–200 µL blood / serum / plasma, < 5 x 10^6 human / animal cells	60 µg	4–6 µg (200 µL blood)	1.6–1.9	60–200 µL	200 bp–approx. 50 kbp	30 min/prep	Mini spin columns	Silica-membrane technology	qPCR, blotting, enzymatic reactions	Parallel isolation of viral and bacterial DNA	76

* Kit mainly for use on automation platforms, for additional accessories and detailed information see *www.mn-net.com/HTapplications*; ** Next generation sequencing

Protein Purification

Part I | Part II

No.	Product	REF	Binding capacity***	Technology	Format	Matrix	Ligand	Features	No.
Protein Purification					*www.mn-net.com/protein*				**Protein Purification**
His-tag proteins									**His-tag proteins**
77	Protino® Ni-NTA Agarose	745400.25 / .100 / .500	50 mg/mL	IMAC	Bulk resin	6 % beaded agarose (cross-linked)	NTA	50 % (v/v) aqueous suspension precharged with Ni^{2+} – suitable for batch-binding, gravity-flow columns, and FPLC™ applications	77
78	Protino® Ni-NTA Columns 1 mL	745410.5	50 mg	IMAC	Ready-to-use columns for FPLC™ applications	6 % beaded agarose (cross-linked)	NTA	Ready-to-use prepacked FPLC™ columns – agarose precharged with Ni^{2+} – male and female outlet for ÄKTA™ platform – adaptors for other systems available	78
79	Protino® Ni-NTA Columns 5 mL	745415.1 / .5	250 mg	IMAC	Ready-to-use columns for FPLC™ applications	6 % beaded agarose (cross-linked)	NTA	Ready-to-use prepacked FPLC™ columns – agarose precharged with Ni^{2+} – male and female outlet for ÄKTA™ platform – adaptors for other systems available	79
80	Protino® 96 Ni-NTA	745425	2 mg/well when using 50 µL of settled agarose	IMAC	96-well plates	6 % beaded agarose (cross-linked)	NTA	Unique Protein Purification Plate – leak-free incubation – agarose precharged with Ni^{2+} – suitable for centrifugation and vacuum	80
81	Protino® Ni-TED Resin	745200.5 / .30 / .120 / .600	10 mg/g	IMAC	Bulk resin	Macroporous silica	TED	Dry matrix precharged with Ni^{2+} – suitable for batch-binding, gravity-flow columns, and FPLC™ applications – unique silica concept	81
82	Protino® Ni-TED 150 Packed Columns	745100.10 / .50	400 µg	IMAC	Mini gravity-flow columns	Macroporous silica	TED	Ready-to-use gravity-flow columns – matrix precharged with Ni^{2+} – buffers included – unique silica concept	82
83	Protino® Ni-TED 1000 Packed Columns	745110.5 / .50	2.5 mg	IMAC	Midi gravity-flow columns	Macroporous silica	TED	Ready-to-use gravity-flow columns – matrix precharged with Ni^{2+} – buffers included – unique silica concept	83
84	Protino® Ni-TED 2000 Packed Columns	745120.5 / .25	5 mg	IMAC	Maxi gravity-flow columns	Macroporous silica	TED	Ready-to-use gravity-flow columns – matrix precharged with Ni^{2+} – buffers included – unique silica concept	84
85	Protino® Ni-IDA Resin	745210.5 / .30 / .120 / .600	20 mg/g	IMAC	Bulk resin	Macroporous silica	IDA	Dry matrix precharged with Ni^{2+} – suitable for batch-binding, gravity-flow columns, and FPLC™ applications – unique silica concept	85
86	Protino® Ni-IDA 150 Packed Columns	745150.10 / .50	800 µg	IMAC	Mini gravity-flow columns	Macroporous silica	IDA	Ready-to-use gravity-flow columns – matrix precharged with Ni^{2+} – buffers included – unique silica concept	86
87	Protino® Ni-IDA 1000 Packed Columns	745160.5 / .50	5 mg	IMAC	Midi gravity-flow columns	Macroporous silica	IDA	Ready-to-use gravity-flow columns – matrix precharged with Ni^{2+} – buffers included – unique silica concept	87
88	Protino® Ni-IDA 2000 Packed Columns	745170.5 / .25	10 mg	IMAC	Maxi gravity-flow columns	Macroporous silica	IDA	Ready-to-use gravity-flow columns – matrix precharged with Ni^{2+} – buffers included – unique silica concept	88
89	Protino® 96 Ni-IDA	745300.1 / .4	1 mg/well	IMAC	96-well plates	Macroporous silica	IDA	Ready-to-use gravity-flow 96-well plates – matrix precharged with Ni^{2+} – buffers included – unique silica concept	89
GST-tag proteins									**GST-tag proteins**
90	Protino® Glutathione Agarose 4B	745500.10 / .100	8 mg/mL	Affinity chrom.	Bulk resin	4 % beaded agarose	Glutathione	75 % (v/v) aqueous suspension – suitable for batch-binding, gravity-flow columns, and FPLC™ applications	90
91	Protino® GST/4B Columns 1 mL	745510.5	10 mg	Affinity chrom.	Ready-to-use columns for FPLC™ applications	4 % beaded agarose	Glutathione	Ready-to-use prepacked FPLC™ columns – male and female outlet for ÄKTA™ platform – adaptors for other systems available	91
92	Protino® GST/4B Columns 5 mL	745515.1 / .5	50 mg	Affinity chrom.	Ready-to-use columns for FPLC™ applications	4 % beaded agarose	Glutathione	Ready-to-use prepacked FPLC™ columns – male and female outlet for ÄKTA™ platform – adaptors for other systems available	92

*** Protino® Ni-IDA / TED / NTA: binding capacity refers to 6xHis-GFPuv; Protino® Glutathione Agarose 4B: binding capacity will vary for each GST-tagged protein.

	NucleoBond®	NucleoSpin®
Technology	Anion-exchange chromatography	Silica-membrane technology
Separation principle	Ionic interaction of negatively charged DNA and positively charged silica resin	Chaotropic salt binding
Material	Modified, macroporous silica particles	Silica membrane
Format	Gravity-flow columns (e.g., Midi, Maxi)	• Spin columns: low-throughput systems, from extra small to extra large scale • 8-well strips, 96-well plates: medium- and high-throughput systems, for vacuum manifolds, centrifuges, and robotic systems
Result	Ultra-pure, transfection-grade DNA / RNA	Ready-to-use, sequencing and PCR-grade DNA / RNA

	NucleoTrap®	NucleoTrap® mRNA	NucleoFast®
Technology	Silica-matrix technology	Affinity chromatography	Ultrafiltration
Separation principle	Chaotropic salt binding	Hybridization	Filtration
Material	Silica particles	Oligo(dT) latex beads	Ultrafiltration membrane
Format	Aqueous suspension	Aqueous suspension	96-well plates, high-throughput systems, for vacuum manifolds, centrifuges, and robotic systems
Result	Ready-to-use, sequencing and PCR-grade DNA	Ready-to-use, sequencing and PCR-grade poly(A) mRNA	Ready-to-use, sequencing and PCR-grade DNA

	NucleoSEQ®	NucleoMag®
Technology	Gel-filtration	Magnetic-bead technology
Separation principle	Size exclusion	Chaotropic salt binding
Material	Size exclusion matrix	Superparamagnetic beads (non-silica)
Format	Spin columns filled with dry matrix	Flexible, easily adapted to automated use
Result	Removal of sequencing dye terminators	Highly-pure ready-to-use DNA / RNA

	Protino® Ni-IDA / TED	Protino® Ni-NTA Agarose	Protino® Glutathione Agarose 4B
	Purification of polyhistidine (His)-tagged proteins	Purification of polyhistidine (His)-tagged proteins	Purification of Glutathione-S-transferase (GST)-tagged proteins
Technology	Affinity chromatography (IMAC, immobilized metal ion affinity chromatography)	Affinity chromatography (IMAC, immobilized metal ion affinity chromatography)	Affinity chromatography
Separation principle	Interaction between the His-tag of the recombinant protein and immobilized Ni^{2+} ions, elution with imidazole	Interaction between the His-tag of the recombinant protein and immobilized Ni^{2+} ions, elution with imidazole	Interaction between the GST-tag of the recombinant protein and immobilized glutathione, elution with free glutathione
Material / backbone	Macroporous silica with immobilized Ni^{2+}	6 % beaded agarose (cross-linked) precharged with Ni^{2+}	4 % beaded agarose with immobilized glutathione
Format	Dry material • Dry bulk matrix for gravity-flow chromatography, batch binding, FPLC™ • Gravity-flow columns • 96-well plates	50 % aqueous suspension containing 30 % ethanol • Bulk resin for gravity-flow chromatography, batch binding, FPLC™ • Ready-to-use columns for FPLC™	75 % aqueous suspension containing 20 % ethanol • Bulk resin for gravity-flow chromatography, batch binding, FPLC™ • Ready-to-use columns for FPLC™

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