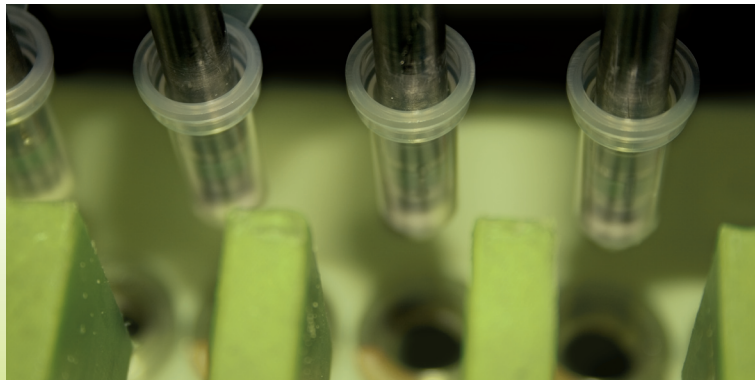


Viral RNA and DNA

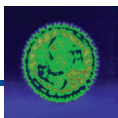
MACHEREY-NAGEL's viral RNA and DNA isolation kits have been optimized for use with cell-free biological fluids and are characterized by the highest consistency and sensitivity for different types of viruses. Solutions are offered that ease the challenges of cell-free sample material like low viral titers and processing of large volumes.

Viral RNA and DNA from serum and plasma 116

Viral DNA from blood and biological fluids 121



www.mn-net.com/virus



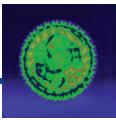
Viral RNA and DNA · Summary of Products

Viral RNA and DNA from serum and plasma

Format	Sample	Product	Page
Single prep (silica-membrane technology)			
Mini spin columns	≤150 µL serum	NucleoSpin® RNA Virus	116
Funnel columns	≤1 mL serum	NucleoSpin® RNA Virus F	117
Manual and automated high throughput (HTP)			
8-well strips, 96-well plates (silica-membrane technology)	≤150 µL serum	NucleoSpin® 8/96 Virus NucleoSpin® 8/96 Virus Core Kit	118
96-well systems (magnetic-bead technology)	≤200 µL serum	NucleoMag® 96 Virus	120

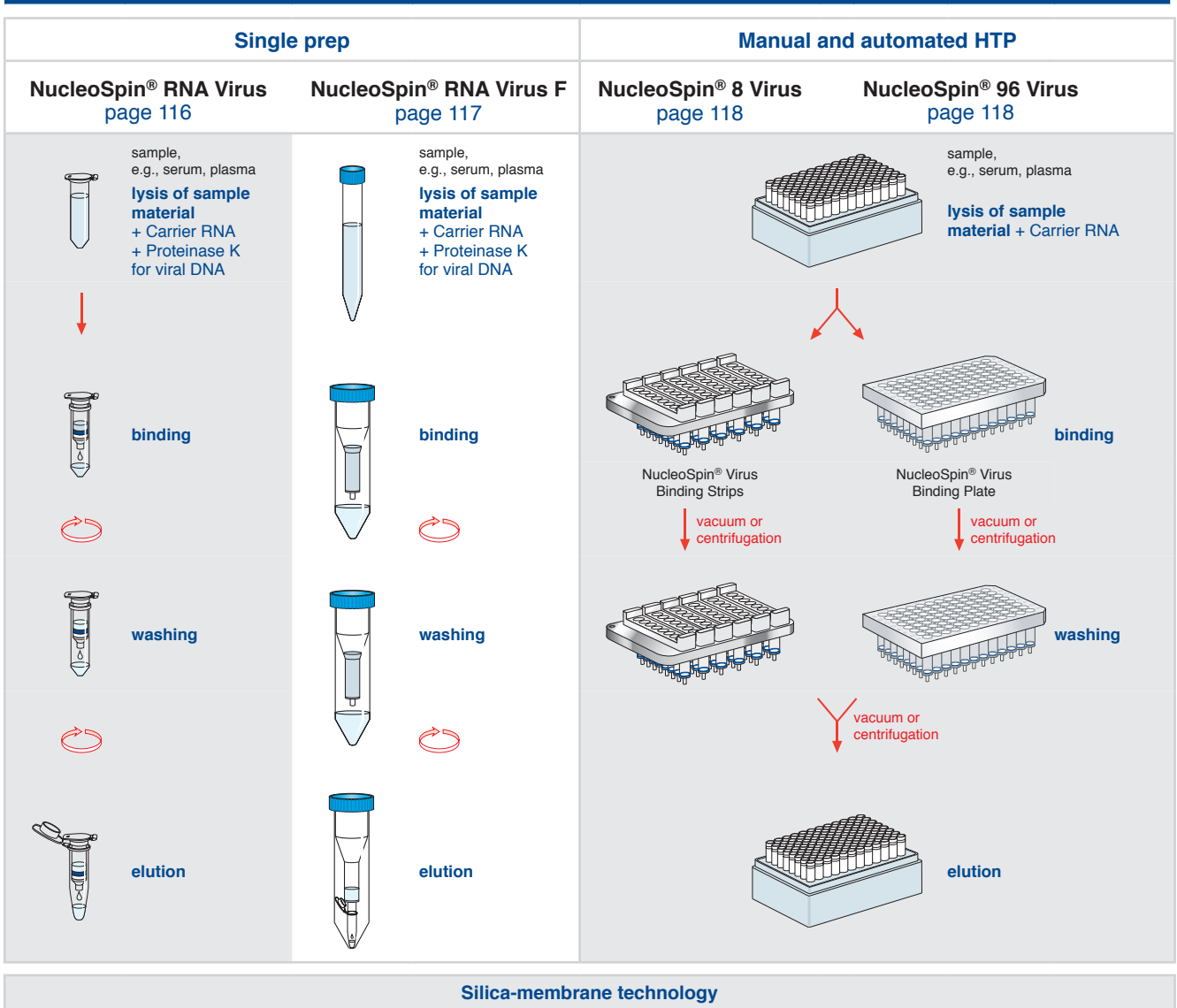
Viral DNA from blood and biological fluids

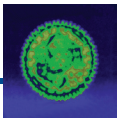
Format	Sample	Product	Page
Single prep (silica-membrane technology)			
Mini spin columns	≤200 µL serum	NucleoSpin® Blood	121



Viral RNA and DNA · Summary of Procedures

Viral RNA and DNA from serum and plasma

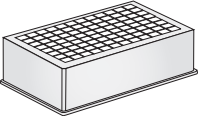

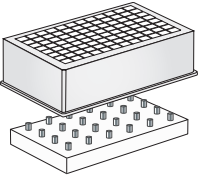

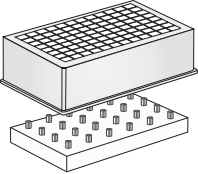

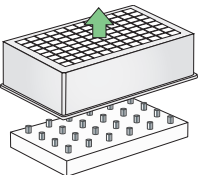



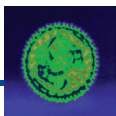


Viral RNA and DNA · Summary of Procedures

Viral RNA and DNA from serum and plasma

Viral DNA from blood and biological fluids

Manual and automated HTP	Single prep
NucleoMag® 96 Virus page 120	NucleoSpin® Blood page 121
 <p>sample, e.g., serum, plasma</p> <p>lysis of sample material + Carrier RNA</p>	 <p>sample, e.g., serum, plasma, whole blood</p> <p>lysis of sample material</p>
 <p>binding</p>	 <p>binding</p>
 <p>washing</p>	 <p>washing</p>
 <p>elution</p>	 <p>elution</p>
Magnetic-bead technology	Silica-membrane technology



single prep
manual HTP
automated HTP

mini spin columns
funnel columns



NucleoSpin® RNA Virus

Features

For reliable purification of viral RNA and DNA* from cell-free biological fluids

- Reliable and reproducible isolation of viral RNA and DNA* – free of impurities
- Safe and well-established procedure
- Proven for a large variety of viruses including influenza viruses, HCV, HIV, Bird Flu Virus, Blue Tongue Virus
- Carrier RNA included for highest sensitivity in downstream applications
- Fast and convenient protocol – viral RNA and DNA* within only 30 min



Product at a glance

Technology	Silica-membrane technology
Format	Mini spin columns
Sample material	≤150 µL serum, plasma, cell-free biological fluids
Fragment size	100 bp – approx. 50 kbp
Elution volume	50 µL
Preparation time	30 min / 4 – 6 preps
Binding capacity	40 µg
Procedure chart see page 114	

Applications**

- Viral RNA from 150 µL serum, plasma, cell-free biological fluids
- HCV, HBV, HAV, HIV, HSV, HPV, VZV, EBV, parvovirus B19, H5N1, H1N1
- Support protocol for parallel isolation of viral RNA and DNA*
- Typical downstream applications: RT-PCR, enzymatic reactions

* For parallel isolation of viral RNA and DNA use of Proteinase K is required (not included in the kit), see "Ordering information"

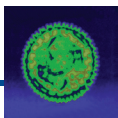
** Kits to be used for research purposes only (see page 160)

For detailed product information and application data see www.mn-net.com/virus

Ordering information

Product	Preps	Specification	REF
NucleoSpin® RNA Virus	10	NucleoSpin® RNA Virus Columns with Collection Tubes, Collection Tubes (2 mL), buffers, Carrier RNA	740956.10
	50	as above	740956.50
	250	as above	740956.250
Product accessories	Pack of	Specification	REF
Proteinase K	100 mg		740506

For separate kit components see "Accessories" page 137



single prep

manual HTP

automated HTP

mini spin columns

funnel columns



NucleoSpin® RNA Virus F

Features

For highly sensitive isolation of viral RNA and DNA* from up to 1 mL of cell-free biological fluids

- Suitable for large sample volumes – up to 1 mL of cell-free biological fluids can be processed
- Ideal for pooled samples
- Patented technology of NucleoSpin® Funnel Columns
- Closed system preventing cross-contamination for highest safety
- Small elution volume of 50 – 100 µL leads to concentrated RNA and highest sensitivity



Product at a glance

Technology	Silica-membrane technology
Format	Funnel columns
Sample material	≤1 mL serum, plasma, cell-free biological fluids
Fragment size	100 bp – approx. 50 kbp
Elution volume	50 – 100 µL
Preparation time	45 min / 2 – 4 preps
Binding capacity	30 µg

Procedure chart see page 114

Applications**

- Viral RNA from up to 1 mL serum, plasma, cell-free biological fluids
- HCV, HBV, HAV, HIV, HSV, HPV, VZV, EBV, parvovirus B19, H5N1, H1N1
- Support protocol for parallel isolation of viral RNA and DNA*
- Typical downstream applications: RT-PCR, enzymatic reactions

* For parallel isolation of viral RNA and DNA use of Proteinase K is required (not included in the kit), see "Ordering information"

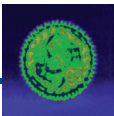
** Kits to be used for research purposes only (see page 160)

For detailed product information and application data see www.mn-net.com/virus

Ordering information

Product	Preps	Specification	REF
NucleoSpin® RNA Virus F	25	NucleoSpin® Funnel Columns with Collection Tubes, Collection Tubes (50 mL), Collection Tubes (0.5 mL), buffers, Carrier RNA	740958
Product accessories	Pack of	Specification	REF
Proteinase K	100 mg		740506

For separate kit components see "Accessories" page 137



single prep	
manual HTP	
automated HTP	8-well strips
	96-well plates
	96-well systems

NucleoSpin® 8/96 Virus · NucleoSpin® 8/96 Virus Core Kit

Features

Isolation of viral RNA and DNA in flexible 8-well strip format and high throughput in 96-well format

- Time-saving parallel isolation of viral DNA or RNA from serum, plasma, or cell-free biological fluids
- Processing possible under vacuum or by centrifugation
- Suitable for manual and automated processing
- Innovative MN Wash Plate minimizes risk of cross-contamination
- NucleoSpin® 8/96 Virus Core Kits:
Kits with basic content focussed on automation platforms.
- Additional accessories can be combined as needed.



Product at a glance

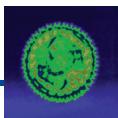
	NucleoSpin® 8 Virus NucleoSpin® 8 Virus Core Kit	NucleoSpin® 96 Virus NucleoSpin® 96 Virus Core Kit
Technology	Silica-membrane technology	
Format	8-well strips	96-well plates
Processing	NucleoSpin® 8 Virus: manual, centrifugation NucleoSpin® 8 Virus Core Kit: manual or automated, vacuum or centrifugation	NucleoSpin® 96 Virus: manual, centrifugation NucleoSpin® 96 Virus Core Kit: manual or automated, vacuum or centrifugation
Sample material	≤150 µL serum, plasma, cell-free biological fluids	
Fragment size	100 bp – approx. 50 kbp	100 bp – approx. 50 kbp
Typical recovery	>90%	>90%
Elution volume	70 – 100 µL	70 – 100 µL
Preparation time	60 min / 6 strips	60 min / plate
Binding capacity	40 µg	40 µg
Procedure chart see page 114		

Applications*

- Manual or automated isolation of viral RNA and DNA from serum, plasma, cell-free biological fluids
- HCV, HBV, HAV, HIV, HSV, HPV, VZV, EBV, parvovirus B19, H5N1, H1N1
- Support protocols for other samples available on request (e.g., blood, tissue suspensions)
- Typical downstream applications: PCR, RT-PCR, or any kind of enzymatic reaction

* Kits to be used for research purposes only (see page 160)

For detailed product information and application data see www.mn-net.com/virus

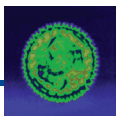


single prep				
manual HTP				
automated HTP	<table border="1"> <tr> <td>8-well strips</td> </tr> <tr> <td>96-well plates</td> </tr> <tr> <td>96-well systems</td> </tr> </table>	8-well strips	96-well plates	96-well systems
8-well strips				
96-well plates				
96-well systems				

Ordering information

Product	Preps	Specification	REF
NucleoSpin® 8 Virus	12 x 8	NucleoSpin® Virus Binding Strips, MN Square-well Blocks, Racks of Tube Strips, Self-adhering Foil, buffers, Carrier RNA, Proteinase K	740643
	60 x 8	as above	740643.5
NucleoSpin® 8 Virus Core Kit	48 x 8	NucleoSpin® Virus Binding Strips, buffers, Carrier RNA	740451.4
NucleoSpin® 96 Virus	2 x 96	NucleoSpin® Virus Binding Plates, MN Square-well Blocks, Round-well Blocks, Racks of Tube Strips, Self-adhering Foil, buffers, Carrier RNA, Proteinase K	740691.2
	4 x 96	as above	740691.4
NucleoSpin® 96 Virus Core Kit	4 x 96	NucleoSpin® Virus Binding Plates, buffers, Carrier RNA	740452.4
Product accessories	Pack of	Specification	REF
NucleoVac 96 Vacuum Manifold	1		740681
NucleoVac Vacuum Regulator	1	for controlling of vacuum	740641
Starter Set A	1	for use of NucleoSpin® 8-well strips on the NucleoVac 96 Vacuum Manifold	740682
Starter Set C	1	for use of NucleoSpin® 8-well strips under centrifugation	740684

For separate kit components see "Accessories" page 137



single prep				
manual HTP				
automated HTP	<table border="1"> <tr> <td>8-well strips</td> </tr> <tr> <td>96-well plates</td> </tr> <tr> <td>96-well systems</td> </tr> </table>	8-well strips	96-well plates	96-well systems
8-well strips				
96-well plates				
96-well systems				



NucleoMag® 96 Virus

Features

Magnetic-bead based isolation of viral RNA and DNA from serum or plasma for high throughput in 96-well format

- One-tube procedure minimizes risk of cross-contamination
- Small elution volumes $\geq 50 \mu\text{L}$ possible
- Yield does not depend on elution volume
- Suitable for manual and automated processing
- Proteinase K and Carrier RNA included

Product at a glance

Technology	Magnetic-bead technology
Format	Highly reactive superparamagnetic beads
Processing	Manual or automated
Sample material	$\leq 200 \mu\text{L}$ serum or plasma
Elution volume	$\geq 50 \mu\text{L}$
Preparation time	< 120 min / 96 preps
Procedure chart	see page 115

Applications*

- Extraction of viral DNA and RNA from serum or plasma
- Veterinary testing applications
- Norovirus RNA isolation from stool samples

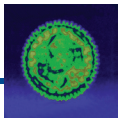
* Kits to be used for research purposes only (see page 160)

For detailed product information and application data see www.mn-net.com/virus

Ordering information

Product	Preps	Specification	REF
NucleoMag® 96 Virus	1 x 96	NucleoMag® V-Beads, buffers, Carrier RNA, Proteinase K	744800.1
	4 x 96	as above	744800.4
Material to be supplied by the user			
Lysis tubes, e.g., Rack of Tube Strips	4 sets	incl. Cap Strips	740477
	24 sets		740477.24
Separation plate, e.g., Square-well Block	4		740481
	24		740481.24
Elution plate, e.g., Elution Plate U-bottom	24		740486.24
For use with KingFisher® 96 platform	1 set	Square-well Blocks, Deep-well Tip Combs and Elution Plates for 4 x 96 preparations	744950
KingFisher® 96 Accessory Kit A			
Product accessories			
	Pack of	Specification	REF
NucleoMag® SEP	1	magnetic separator	744900

For separate kit components see "Accessories" page 137



NucleoSpin® Blood

Features

For rapid preparation of viral DNA from blood and biological fluids

- Highest sensitivity for viral DNA
- Reliable and reproducible DNA isolation in less than 30 min
- Complete removal of PCR inhibitors
- Proven for a large variety of viruses including HBV, CMV, HPV, TTV, EBV
- Also suitable for isolation of genomic DNA, see page 83



Product at a glance

Technology	Silica-membrane technology
Format	Mini spin columns
Sample material	<200 µL serum, plasma, or blood
Fragment size	200 bp – approx. 50 kbp
A ₂₆₀ /A ₂₈₀	1.6 – 1.9
Elution volume	60 – 100 µL
Preparation time	<30 min / prep
Binding capacity	60 µg
Procedure chart	see page 115

Applications*

- Viral DNA from blood, serum, plasma, and biological fluids
- Genomic and bacterial DNA from blood and biological fluids
- HBV, CMV, HPV, TTV, EBV
- Typical downstream applications: real-time PCR, enzymatic reactions

* Kits to be used for research purposes only (see page 160)

For detailed product information and application data see www.mn-net.com/virus

Ordering information

Product	Preps	Specification	REF
NucleoSpin® Blood	10	NucleoSpin® Blood Columns with Collection Tubes, Collection Tubes (2 mL), buffers, Proteinase K	740951.10
	50	as above	740951.50
	250	as above	740951.250

For separate kit components see “Accessories” page 137