



NucleoVac 96 Vacuum Manifold

User manual

February 2015 / Rev. 06

MACHEREY-NAGEL

www.mn-net.com



Table of contents

1	Contents	4
2	Product description	5
3	General remarks	6
3.1	Assembly of the NucleoVac 96 Vacuum Manifold	6
3.2	Setting up vacuum	6
3.3	Apply vacuum	6
3.4	Release vacuum from manifold	7
4	NucleoVac 96 setup with NucleoSpin® 8 kits	8
4.1	Filtration step	8
4.2	Binding, washing, and elution steps	9
5	NucleoVac 96 setup with NucleoSpin® 96 kits	10
5.1	Filtration step	10
5.2	Binding, washing, and elution steps	11
6	NucleoVac 96 setup with NucleoFast® 96 kits	12
7	NucleoVac 96 setup with NucleoSpin® Blood L Vacuum kits	13
7.1	Binding and washing steps	13
7.2	Drying and elution step	14
8	Appendix	15
8.1	Pressure conversions	15
8.2	Manifold care	15
8.3	Troubleshooting	15
8.4	Ordering information	16
8.5	Product use restriction/warranty	17

1 Contents

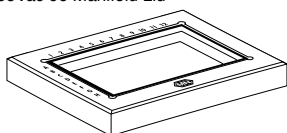
NucleoVac 96 Vacuum Manifold	
REF	740681
NucleoVac 96 Manifold Base	1
NucleoVac 96 Manifold Lid	1
Waste Container	2
Rack of Tube Strips	2
(1 set consists of 1 rack, 12 strips with 8 tubes each, and 12 Cap Strips)	
Spacer Set	2 spacers 'MTP/MULTI-96 PLATES'
	2 spacers 'ROUND-WELL BLOCKS'
	2 spacers 'SQUARE-WELL BLOCKS'
	2 spacers 'MICROTUBE RACKS'
User manual	1

Note: For processing the NucleoSpin® 8-well strips on the NucleoVac 96, Starter Set A is required (see ordering information).

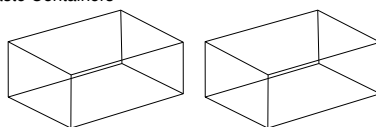
2 Product description

The NucleoVac 96 Vacuum Manifold is designed for the rapid manual parallel purification of nucleic acids using the 8-well and 96-well NucleoSpin® kits and the NucleoFast® kits. The **NucleoSpin® 8/96** kits are based on MACHEREY-NAGEL's well known NucleoSpin® silica-membrane technology and allow rapid simultaneous purification of high-quality nucleic acids. Time consuming centrifugation and decanting steps are eliminated by use of vacuum. The **NucleoFast®** kits are based on ultrafiltration technology and offer a fast and convenient way of nucleic acid purification. The NucleoVac 96 manifold provides spacer sets to accommodate suitable microtiter plates, deep-well blocks (round-well and square-well blocks), or microtube racks for collecting samples.

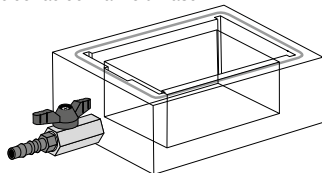
NucleoVac 96 Manifold Lid



Waste Containers



NucleoVac 96 Manifold Base



Spacer Set

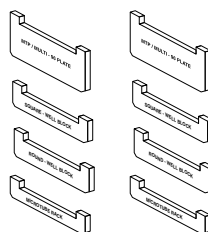


Figure 1: Overview

3 General remarks

3.1 Assembly of the NucleoVac 96 Vacuum Manifold

Place manifold base on a secure lab bench.

For the use of the **NucleoSpin® 8** kits on the NucleoVac 96, the Starter Kit A is needed (see ordering information). This set contains the Column Holders A and NucleoSpin® Dummy Strips. The Column Holders A are used to hold the desired number of 8-well strips (up to six) during the preparation. The NucleoSpin® Dummy Strips are used to fill the unused rows of the Column Holders A.

If using a **NucleoSpin® 8** kit with filter and binding strips, please refer to section 4.1 for setup of the vacuum manifold. If the **NucleoSpin® 8** kit contains only binding strips, please see figure 4.2.

For the use of **NucleoSpin® 96** kits no additional hardware is necessary. If using a kit with filter and binding plates (e.g., NucleoSpin® 96 Plasmid) the setup is shown in section 5.1. The setup for **NucleoSpin® 96** kits with only binding plates, the setup can be shown in section 5.2.

Please make sure that you place the appropriate spacers into the NucleoVac 96 Manifold Base to insert the binding strips/plate, the MN Wash Plate, the Rack of Tube Strips, or the Elution Plate in the right distance underneath the outlets of the plate inserted into the manifold top.

For the use of **NucleoFast®** kits, insert a waste container into the manifold base. Close the manifold with the lid. Insert the **NucleoFast®** Plate into the manifold lid and start the procedure according to the kit protocol. Unused wells do not have to be taped. The use of the provided spacers is not necessary. For the detailed setup, refer to section 6.

3.2 Setting up vacuum

Connect the manifold to a suitable vacuum source such as a water aspirator, house vacuum, or vacuum pump (e.g., KNF Laboport vacuum pump NB 840.3; vacuum pump specifications: final vacuum < 100 mbar*, max. airflow > 1.8 m³/h). Close the manifold's valve before adjusting vacuum. Adjust vacuum according to the kit protocol by using an appropriate regulator (e.g., REF 740641, see ordering information, section 8.4). Alternatively, vacuum can be adjusted by measuring the flow-through of samples (see kit protocols).

3.3 Apply vacuum

Load samples into the individual wells of the filter or binding strips/plate. Open valve and if necessary press down the strips/plate shortly until flow starts.

* Reduction of atmospheric

3.4 Release vacuum from manifold

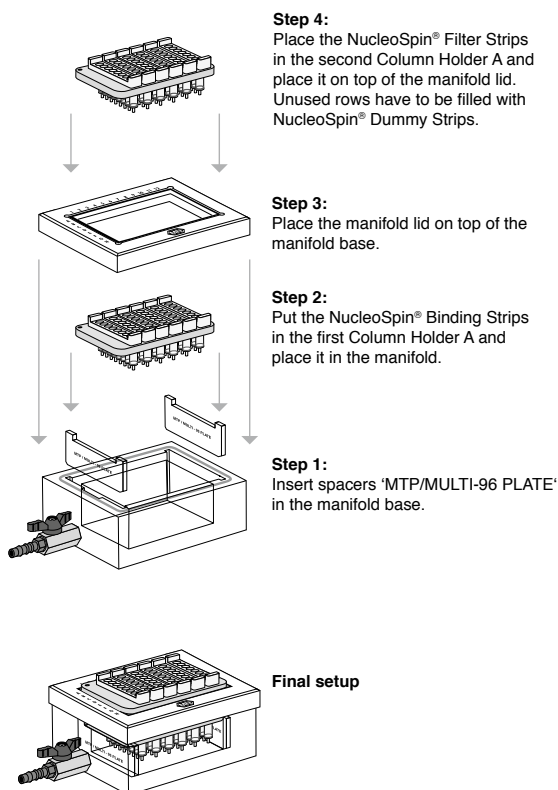
When the samples have passed the wells, close valve and wait about 10–20 seconds until the NucleoSpin® 96-well plate or the Column Holder A with the 8-well strips can be removed easily. For NucleoFast® plates, make sure that the vacuum is released after each vacuum step (60–90 s).

4 NucleoVac 96 setup with NucleoSpin® 8 kits

4.1 Filtration step

Performing the filtration step of a NucleoSpin® 8 kit procedure, **NucleoSpin® Filter Strips** and **NucleoSpin® Binding Strips** are used (e.g., using NucleoSpin® 8 Plasmid, REF 740621).

Filtration step

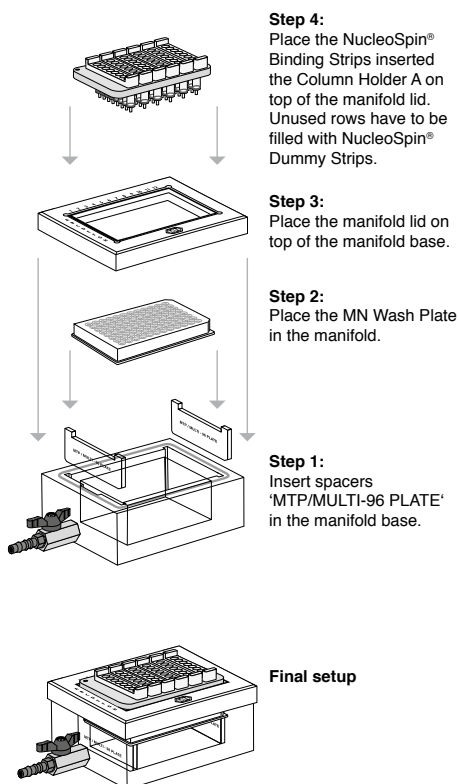


4.2 Binding, washing, and elution steps

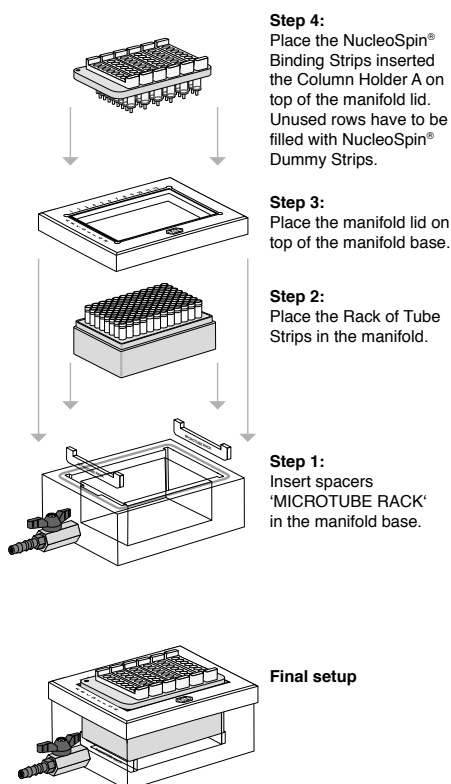
Performing the binding, washing, or elution step of a NucleoSpin® 8 kit procedure, only **NucleoSpin® Binding Strips** are used.

Elution is performed into Tube Strips or Elution Plate. Using the Elution Plate, spacers 'MTP/MULTI-96 PLATE' are needed. Please see the relating kit's user manual for more information regarding specific requirements.

Binding / Washing / Elution in MTP



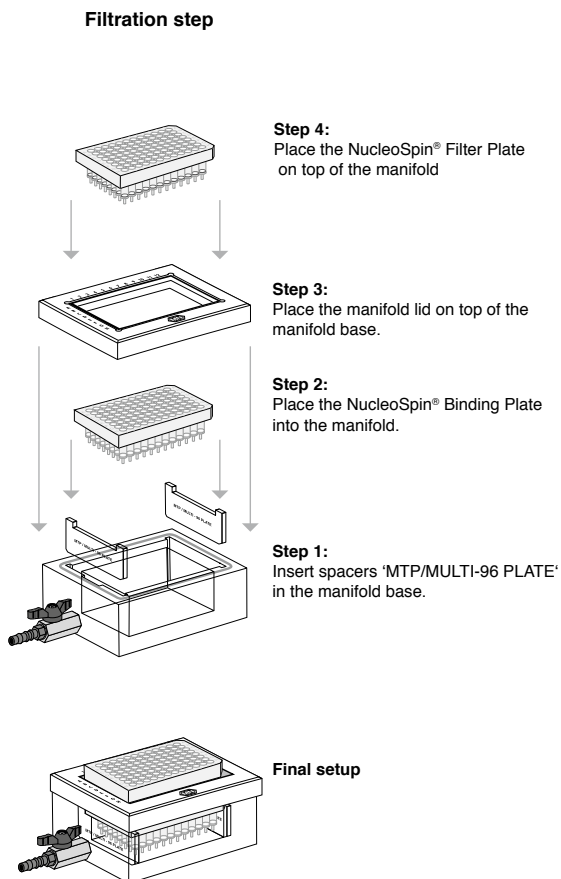
Elution in Rack of Tube Strips



5 NucleoVac 96 setup with NucleoSpin® 96 kits

5.1 Filtration step

Performing the filtration step of a NucleoSpin® 96 kit procedure, the **NucleoSpin® Filter Plate** and the **NucleoSpin® Binding Plate** are used (e.g., using NucleoSpin® 96 Plasmid, REF 740625.1).

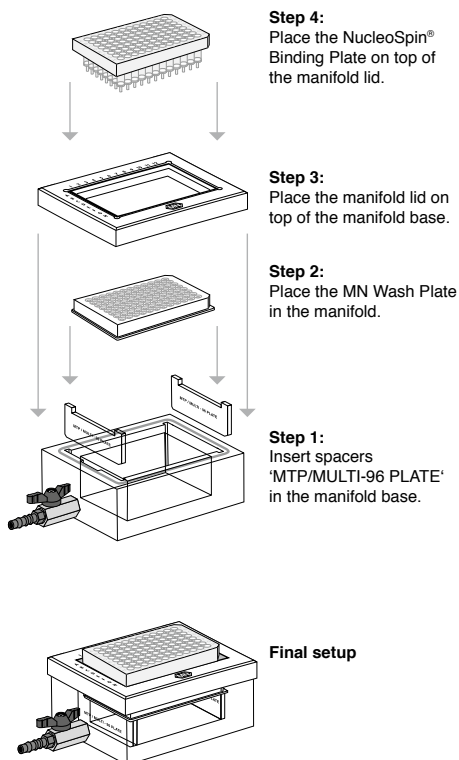


5.2 Binding, washing, and elution steps

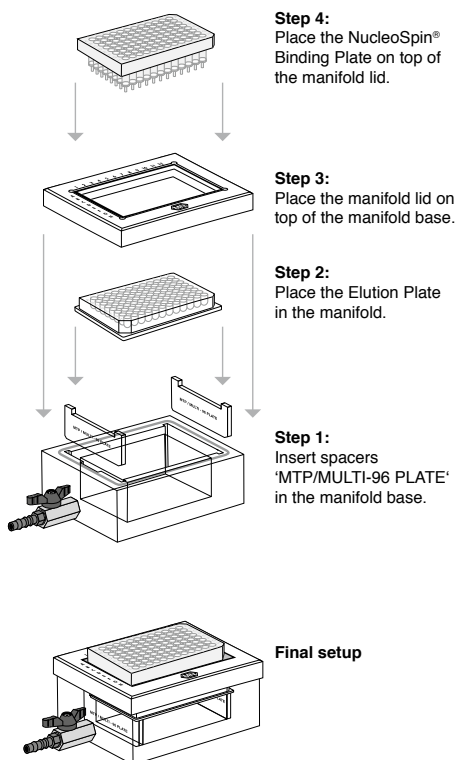
Performing the binding, washing, or elution step of a NucleoSpin® 96 kit procedure, only the **NucleoSpin® Binding Plate** is used.

Elution is performed into the Elution Plate. Alternatively, a Round-well Block, Square-well Block, or Rack of Tube Strips can be used together with appropriate spacers. Please see the relating kit's user manual for more information regarding specific requirements.

Binding / Washing steps / Elution in MTP

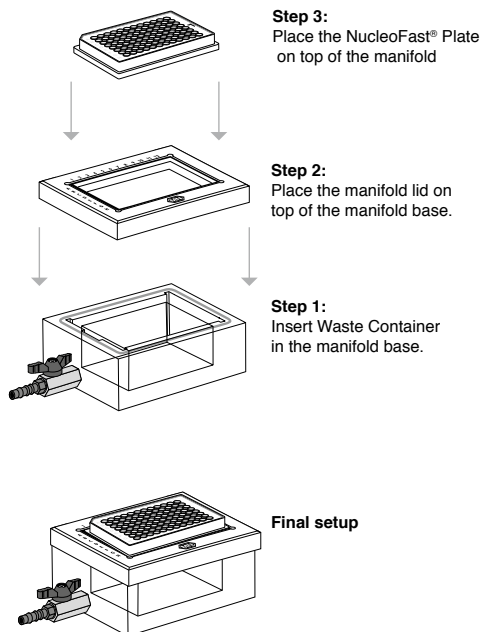


Elution in Rack of Tube Strips



6 NucleoVac 96 setup with NucleoFast® 96 kits

NucleoFast® kits (e.g., NucleoFast® 96 PCR) can easily be used on the NucleoVac 96. The spacers provided with the NucleoVac 96 manifold are not used. Only the waste container is placed inside the vacuum chamber.



7 NucleoVac 96 setup with NucleoSpin® Blood L Vacuum kits

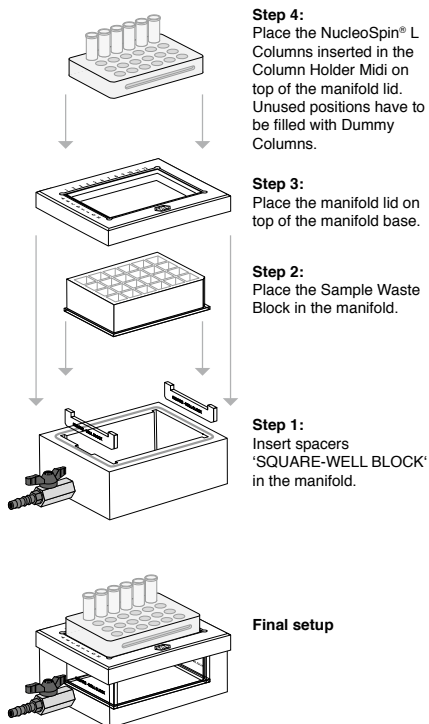
7.1 Binding and washing steps

NucleoSpin® Blood L Vacuum kits are especially developed to be used with NucleoVac 96 Vacuum Manifold. The use of Starter Set Midi (See ordering information, section 8.4) is required.

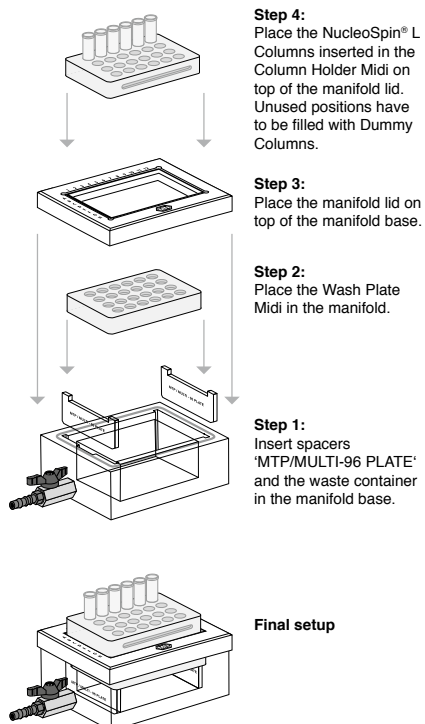
Performing the binding and washing steps, the spacers 'SQUARE-WELL BLOCK' and 'HTP/MULTI-96 PLATE' are used

Setup of vacuum manifold:

Binding step



Washing step

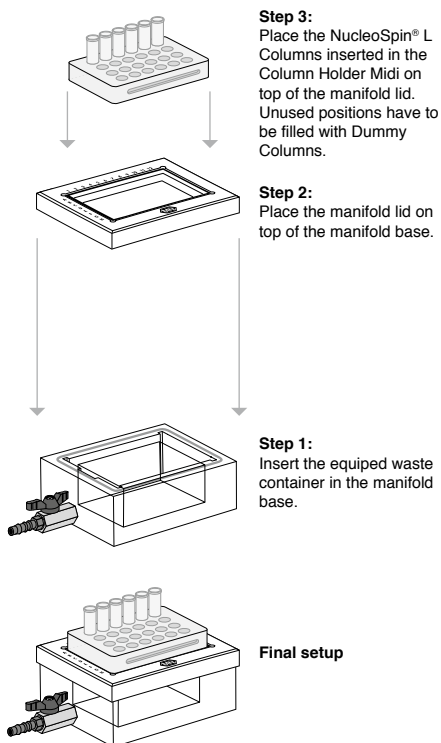


7.2 Drying and elution step

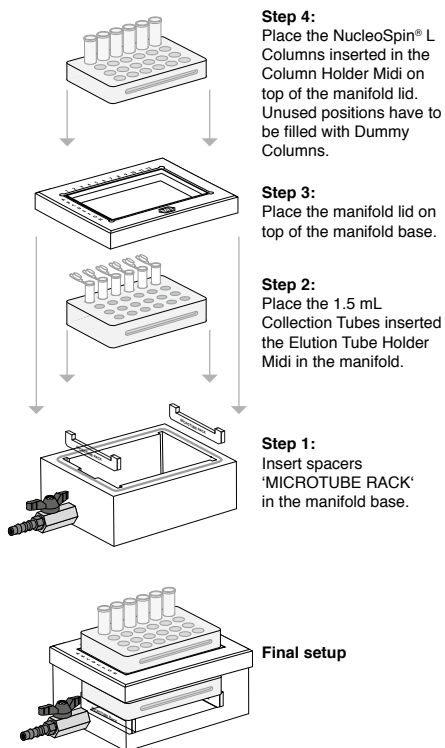
For drying step only the waste container is placed inside the vacuum chamber. The elution step requires the use of spacers 'MICRO TUBE RACK'.

Setup of vacuum manifold:

Drying step



Elution step



8 Appendix

8.1 Pressure conversions

1 mbar = 100 Pa = 0.987×10^{-3} atm = 0,750 mm Hg = 14.504×10^{-3} psi

8.2 Manifold care

The manifold consists of an acrylic base and spacers, a PVC cover lid, and a valve made of stainless steel and other metals. Do not autoclave either manifold or cover lid. The parts of the manifold are resistant to diluted acetic acid, ethanol, guanidine-HCl, NaCl, NaOH, SDS. However, prolonged exposure of the manifold to these chemicals should be avoided. Therefore, after DNA purification rinse all parts of the manifold (particularly the valve) carefully with water and dry them thoroughly. The manifold must not come in contact with acetone, phenol, toluene, or other apolar organic solvents.

8.3 Troubleshooting

Problem	Possible cause and suggestions
Vacuum is not build up properly	<i>Gasket</i>
	• Insert a microtiter plate with closed, rectangular bottom into the manifold lid. The gasket of the vacuum manifold must be covered completely by the microtiter plate. Apply vacuum to the manifold and test the vacuum. The microtiter plate should be fixed now by vacuum.
	<i>Vacuum manifold</i>
	• Are there any cracks on the surface of the vacuum manifold? • Check the main valve: is it tightly fixed into the vacuum manifold? • Are there any cracks around the valve?

8.4 Ordering information

Product	REF	Pack of
NucleoVac 96 Vacuum Manifold	740681	1
Replacement parts for the NucleoVac 96 are available on request		
NucleoVac Vacuum Regulator	740641	1
Starter Set A (for processing NucleoSpin® 8-well strips on NucleoVac 96 Vacuum Manifold)	740682	1 set
Starter Set Midi	740744	1 set
NucleoSpin® Dummy Strips	740685	6
Rack of Tube Strips (1 set consists of 1 rack, 12 strips with 8 tubes each, and 12 Cap Strips)	740637	5 racks
Elution Plate U-bottom	740486.24	24
Square-well Block	740481 740481.24	4 24
Round-well Block with Cap Strips (set consists of 1 Round-well Block and 12 Cap Strips)	740475 740475.24	4 sets 24 sets
Self-adhering PE Foil	740676	50 sheets
Gas-permeable Foil	740675	50 sheets

Visit **www.mn-net.com** for more detailed product information.

8.5 Product use restriction/warranty

NucleoVac 96 Vacuum Manifold components are intended, developed, designed, and sold FOR RESEARCH PURPOSES ONLY, except, however, any other function of the product being expressly described in original MACHEREY-NAGEL product leaflets.

MACHEREY-NAGEL products are intended for GENERAL LABORATORY USE ONLY! MACHEREY-NAGEL products are suited for QUALIFIED PERSONNEL ONLY! MACHEREY-NAGEL products shall in any event only be used wearing adequate PROTECTIVE CLOTHING. For detailed information please refer to the respective Material Safety Data Sheet of the product! MACHEREY-NAGEL products shall exclusively be used in an ADEQUATE TEST ENVIRONMENT. MACHEREY-NAGEL does not assume any responsibility for damages due to improper application of our products in other fields of application. Application on the human body is STRICTLY FORBIDDEN. The respective user is liable for any and all damages resulting from such application.

DNA/RNA/PROTEIN purification products of MACHEREY-NAGEL are suitable for *IN VITRO*-USES ONLY!

ONLY MACHEREY-NAGEL products specially labeled as IVD are also suitable for *IN VITRO*-diagnostic use. Please pay attention to the package of the product. *IN VITRO*-diagnostic products are expressly marked as IVD on the packaging.

IF THERE IS NO IVD SIGN, THE PRODUCT SHALL NOT BE SUITABLE FOR *IN VITRO*-DIAGNOSTIC USE!

ALL OTHER PRODUCTS NOT LABELED AS IVD ARE NOT SUITED FOR ANY CLINICAL USE (INCLUDING, BUT NOT LIMITED TO DIAGNOSTIC, THERAPEUTIC AND/OR PROGNOSTIC USE).

No claim or representations is intended for its use to identify any specific organism or for clinical use (included, but not limited to diagnostic, prognostic, therapeutic, or blood banking). It is rather in the responsibility of the user or - in any case of resale of the products - in the responsibility of the reseller to inspect and assure the use of the DNA/RNA/protein purification products of MACHEREY-NAGEL for a well-defined and specific application.

MACHEREY-NAGEL shall only be responsible for the product specifications and the performance range of MN products according to the specifications of in-house quality control, product documentation and marketing material.

This MACHEREY-NAGEL product is shipped with documentation stating specifications and other technical information. MACHEREY-NAGEL warrants to meet the stated specifications. MACHEREY-NAGEL's sole obligation and the customer's sole remedy is limited to replacement of products free of charge in the event products fail to perform as warranted. Supplementary reference is made to the general business terms and conditions of MACHEREY-NAGEL, which are printed on the price list. Please contact us if you wish to get an extra copy.

There is no warranty for and MACHEREY-NAGEL is not liable for damages or defects arising in shipping and handling (transport insurance for customers excluded), or out of accident or improper or abnormal use of this product; defects in products or

components not manufactured by MACHEREY-NAGEL, or damages resulting from such non-MACHEREY-NAGEL components or products.

MACHEREY-NAGEL makes no other warranty of any kind whatsoever, and SPECIFICALLY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES OF ANY KIND OR NATURE WHATSOEVER, DIRECTLY OR INDIRECTLY, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, AS TO THE SUITABILITY, REPRODUCTIVITY, DURABILITY, FITNESS FOR A PARTICULAR PURPOSE OR USE, MERCHANTABILITY, CONDITION, OR ANY OTHER MATTER WITH RESPECT TO MACHEREY-NAGEL PRODUCTS.

In no event shall MACHEREY-NAGEL be liable for claims for any other damages, whether direct, indirect, incidental, compensatory, foreseeable, consequential, or special (including but not limited to loss of use, revenue or profit), whether based upon warranty, contract, tort (including negligence) or strict liability arising in connection with the sale or the failure of MACHEREY-NAGEL products to perform in accordance with the stated specifications. This warranty is exclusive and MACHEREY-NAGEL makes no other warranty expressed or implied.

The warranty provided herein and the data, specifications and descriptions of this MACHEREY-NAGEL product appearing in MACHEREY-NAGEL published catalogues and product literature are MACHEREY-NAGEL's sole representations concerning the product and warranty. No other statements or representations, written or oral, by MACHEREY-NAGEL's employees, agent or representatives, except written statements signed by a duly authorized officer of MACHEREY-NAGEL are authorized; they should not be relied upon by the customer and are not a part of the contract of sale or of this warranty.

Product claims are subject to change. Therefore please contact our Technical Service Team for the most up-to-date information on MACHEREY-NAGEL products. You may also contact your local distributor for general scientific information. Applications mentioned in MACHEREY-NAGEL literature are provided for informational purposes only. MACHEREY-NAGEL does not warrant that all applications have been tested in MACHEREY-NAGEL laboratories using MACHEREY-NAGEL products. MACHEREY-NAGEL does not warrant the correctness of any of those applications.

Last updated: 07/2010, Rev. 03

Please contact:
MACHEREY-NAGEL GmbH & Co. KG
Tel.: +49 24 21 969-270
tech-bio@mn-net.co



MACHEREY-NAGEL



MACHEREY-NAGEL GmbH & Co. KG · Neumann-Neander-Str. 6-8 · 52355 Düren · Germany

Germany

and international:

Tel.: +49 24 21 969-0

E-mail: info@mn-net.com

Switzerland:

MACHEREY-NAGEL AG

Tel.: +41 62 388 55 00

E-mail: sales-ch@mn-net.com

France:

MACHEREY-NAGEL EURL

Tel.: +33 388 68 22 68

E-mail: sales-fr@mn-net.com

USA:

MACHEREY-NAGEL Inc.

Tel.: +1 484 821 0984

E-mail: sales-us@mn-net.com