

## RNA Purification Products from MACHERY-NAGEL



*Total RNA Mini spin kit for FFPE samples*  
*Improved RNA quality – enhanced RT-PCR*

**NucleoSpin<sup>®</sup> FFPE RNA**



**BIOKÉ**  
sharing knowledge

Plesmanlaan 1d  
2333 BZ Leiden  
The Netherlands  
T. +31 (0)71 568 10 00  
T. Belgium: 0800 71640  
F. +31 (0)71 568 10 10  
info@bioke.com  
www.bioke.com

**Very easy paraffin removal**

**Convenient handling**

**Fast procedure**

**... get RNA easily out of your FFPE samples**

## NucleoSpin<sup>®</sup> FFPE RNA

No restriction for total RNA isolation – even from FFPE samples

### ► Enhance your RT-PCR performance

Improved template quality – get less fragmented, well decrosslinked, DNA-free RNA.  
Decrosslinking buffer and rDNase provided with the kit.  
Improved sensitivity – highly concentrated RNA by elution in only 5 – 30 µl.  
Use of the XS (mini elution volume) column design.

### ► Make your paraffin removal convenient

Simply melt paraffin with the Paraffin Dissolver (patent pending) provided with the kit.  
Without toxic organic solvent – without time-consuming mixing steps –  
without long incubation time.

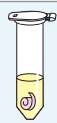
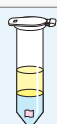
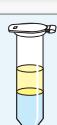
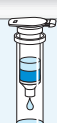


### ► Save your time

Minimum number of working steps.  
Fast procedure preserves RNA quality.

### Suitable for a large variety of starting materials, like clinical samples

E.g., colon carcinoma (hematoxylin stained/unstained), colon mucosa, adenocarcinoma of colon transversum, liver (rat/human), liver carcinoma (hematoxylin stained), lymph node, spleen (rat/human); pancreas (rat/human; diabetic/non-diabetic), placenta

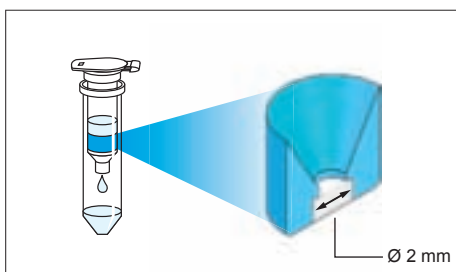
### Procedure

- |   |   |   |
|---|---|---|
| <p><b>1. Paraffin Removal</b><br/>Convenient paraffin removal by melting the sample in Paraffin Dissolver</p> |  | <p>Add Paraffin Dissolver to the sample<br/>70°C; 3 min</p>   |
| <p><b>2. Sample Lysis</b><br/>Enzymatic digestion and lysis of the sample in lower aqueous phase</p>          |  | <p>Add lysis buffer / Proteinase K<br/>Immediate formation of two phases<br/>60°C; 15 min – 3 h</p> |
| <p><b>3. Decrosslinking of RNA</b><br/>Efficient removal of formaldehyde cross-links</p>                      |  | <p>Add Decrosslinking Buffer<br/>90°C; 15 min</p>   |
| <p><b>4. Binding of RNA</b><br/>Load lysate in one step</p>   |  | <p>Transfer lysate (lower phase) onto NucleoSpin<sup>®</sup> FFPE Column<br/>Wash</p>               |
| <p><b>5. On-column DNA digest</b><br/>Digestion at RT with premium quality rDNase</p>                         |  | <p>rDNase Digestion of residual DNA<br/>RT; 15 min<br/>Wash</p>                                     |
| <p><b>6. Total RNA elution</b><br/>Elution of concentrated RNA, ready-to-use for downstream applications</p>  |  | <p>Elute RNA in only 5 – 30 µl H<sub>2</sub>O</p>   |

## Product at-a-glance

Technology	Silica-membrane technology
Format	Mini spin columns – XS design*
Sample material	Up to 7 sections of 250 mm <sup>2</sup> , or up to 15 mg
RNA yield	Depending on amount and quality of the sample
Typical Ratio A <sub>260</sub> /A <sub>280</sub>	1.9 – 2.1
Typical RIN	2 – 6 <sup>†</sup>
Typical RNA size	100 – 5,000 nt <sup>†</sup>
Elution volume	5 – 30 µl
Preparation time	70 min

<sup>†</sup> strongly depending on sample quality

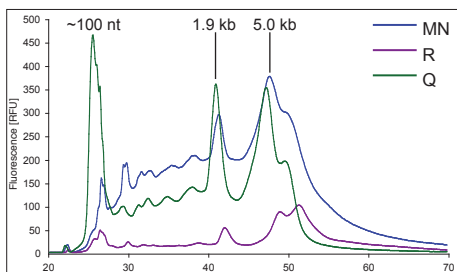


### \*XS-column design – increased sensitivity

NucleoSpin® FFPE RNA columns are designed for increased sensitivity. A silica membrane of small diameter is embedded in a funnel-shaped ring (see column cross-section), allowing an elution volume of only 5 – 30 µl. Thus, also limited amounts of RNA can be eluted in higher concentrations – for higher sensitivity in downstream applications.

## Application data

### Faster RNA isolation and superior RT-PCR performance from FFPE tissue



### Improved structural integrity of RNA – even from FFPE tissue

RNA was isolated from 7.5 µm sections of rat liver tissue with NucleoSpin® FFPE RNA (MN) and with kits from competitors Q and R.

NucleoSpin® FFPE RNA shows a higher percentage of large RNA and less fragmentation.

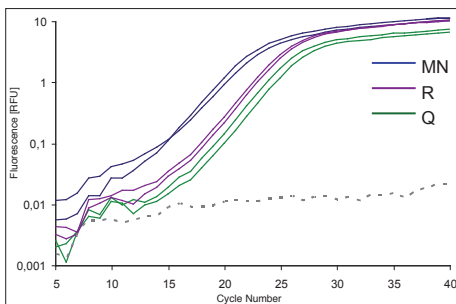
RNA analyzed on Agilent 2100 Bioanalyzer / RNA 6000 Nano Kit

	MN	Q	R
Working steps:	36	43	54
Centrifugation steps:	9	9	15
Preparation time:	70 min	75 min	251
Ct-values**:	21.5	26.0	24.0

### Less working steps – faster procedure – best performance

Comparison of the NucleoSpin® FFPE RNA procedure (MN) with competitor methods (Q, R).

NucleoSpin® FFPE RNA requires less working steps and less time. It results in high quality RNA with best Ct-values\*\*.



### Superior RT-PCR performance of RNA from FFPE material

RNA was isolated from 7.5 µm sections of rat liver tissue with NucleoSpin® FFPE RNA (MN) and with kits from competitors Q and R.

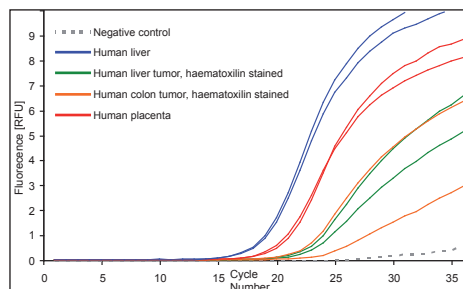
Total RNA, isolated with NucleoSpin® FFPE RNA is well decrosslinked, virtually DNA-free, and highly concentrated – resulting in superior RT-PCR performance.

Ct-values (Ø) are: MN 21.5 R: 24; Q: 26

\*\*Analysis of RNA with LightCycler® qRT-PCR. 2 µl eluate were applied, respectively. Target length: 243 bases

## Application data (cont.)

### Sensitive RT-PCR from a broad range and limited amount of tissue samples



#### Sensitive RT-PCR – even from trace amounts of clinical samples

Archived human samples often vary in source and treatment of tissue, and are of limited amount. RNA was isolated from different clinical samples with NucleoSpin® FFPE RNA. Human FFPE sample materials: liver, liver tumor hematoxylin stained, colon tumor hematoxylin stained, placenta. Sample size: 10 µm sections, 2 x 2 cm (from glass slides).

NucleoSpin® FFPE RNA allows sensitive RT-PCR from limited amounts of samples.

Analysis of RNA with LightCycler® RT-PCR, β-actin specific primer, 73 nt amplification target.

**Superior RT-PCR performance – even from FFPE material.  
Suitable for a large variety of sample materials.**

### Ordering information

Product	Preps	Cat. No.
<b>Mini spin columns – XS design</b> <b>NucleoSpin® FFPE RNA</b> Mini spin kit for the isolation of total RNA from formalin fixed, paraffin embedded samples. Including Paraffin Dissolver, decrosslinking buffer, and rDNase.	10/50/250	740969.10/.50/.250
<b>Buffers and reagents</b> <b>Paraffin Dissolver</b> Solvent for easy paraffin removal.		740968.25

### Related product

<b>Mini spin columns – XS design</b> <b>NucleoSpin® FFPE RNA/DNA*</b> Mini spin kit for parallel isolation of total RNA and genomic DNA from unsplit formalin fixed, paraffin embedded samples. Including Paraffin Dissolver, decrosslinking buffer, and rDNase.	10/50/250	740978.10/.50/.250
<b>Mini spin columns – XS design</b> <b>NucleoSpin® RNA XS</b> Mini spin kit for the isolation of highly concentrated total RNA from extremely small amount of starting material. Elution down to 5 µl.	10/50/250	740902.10/.50/.250
<b>Mini spin columns</b> <b>NucleoSpin® RNA II</b> Mini spin kit for the isolation of total RNA. Including rDNase and shredders	10/50/250	740955.10/.50/.250
<b>Buffer set</b> <b>NucleoSpin® RNA/DNA Buffer set*</b> Buffer set for the simultaneous isolation of RNA and DNA from unsplit samples. To be used in combination with NucleoSpin® RNA II, NucleoSpin® RNA Plant, NucleoSpin® RNA/Protein kits.	100	740944

Visit [www.mn-net.com/bioanalysis](http://www.mn-net.com/bioanalysis) for detailed information

Your local distributor:

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## MACHEREY-NAGEL

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

Germany

Tel.: +49 (0) 2421 969-270  
e-mail: tech-bio@mn-net.com

USA

Tel.: +1 484 821 0984  
e-mail: sales-us@mn-net.com

France

Tel.: +33 (0) 388 682268  
e-mail: sales-fr@mn-net.com

Switzerland

Tel.: +41 (0) 62 388 55 00  
e-mail: sales-ch@mn-net.com

