

DNA and RNA purification products from MACHEREY-NAGEL

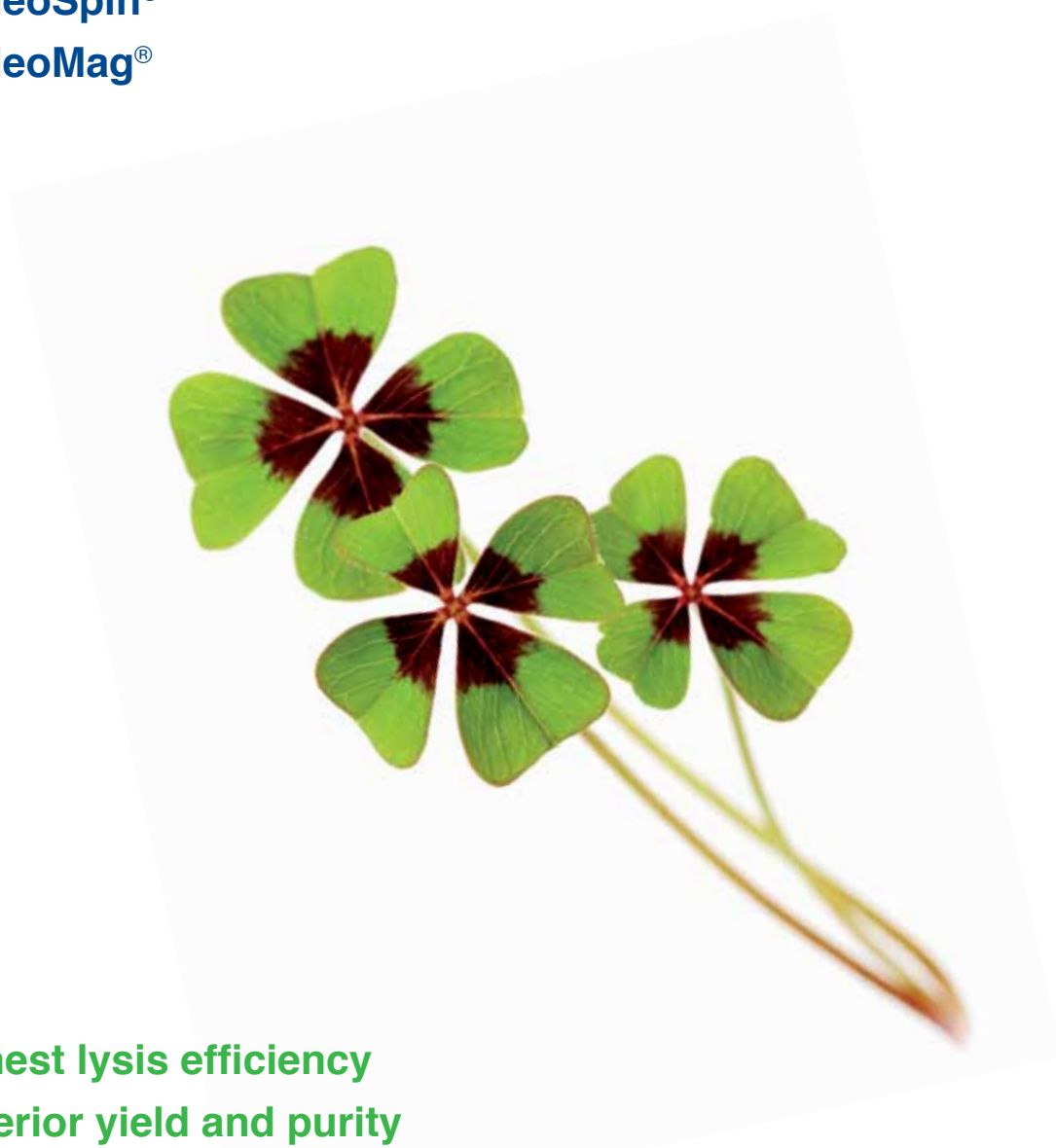


DNA or RNA from plant samples

Isolations don't rely on luck...

NucleoSpin®

NucleoMag®



Highest lysis efficiency

Superior yield and purity

Designed for virtually every plant species

MACHEREY-NAGEL

www.mn-net.com



Since 1911

NucleoSpin® Plant II (Mini / Midi / Maxi)

Genomic DNA from plant and fungi samples

▶ Rapid small, medium, and large scale preparation

Choose the format to obtain as much DNA as you need

▶ Alternative lysis buffers for optimal lysis

Two alternative lysis buffers for optimal processing of various samples

Lysis Buffer PL1 → based on CTAB lysis method

Lysis Buffer PL2 → based on SDS lysis method

▶ Improved buffer composition – get maximum yield and purity

New buffer compositions allow optimized DNA yield and purity

Isolation from a huge variety of plants



Product at a glance

NucleoSpin® Plant II



NucleoSpin® Plant II Midi



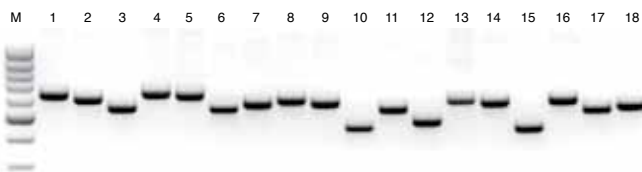
NucleoSpin® Plant II Maxi



| | | | |
|--|---|---|--|
| Technology | Silica-membrane technology | Silica-membrane technology | Silica-membrane technology |
| Format | Mini spin columns | Midi spin columns | Maxi spin columns |
| Sample material | < 100 mg plant material (wet weight) < 20 mg plant material (dry weight) | < 400 mg plant material (wet weight) < 80 mg plant material (dry weight) | < 1 500 mg plant material (wet weight) < 300 mg plant material (dry weight) |
| Lysate clarification | NucleoSpin® Filters | NucleoSpin® Filters L | NucleoSpin® Filters XL |
| Fragment size | 50 bp – approx. 50 kbp | 50 bp – approx. 50 kbp | 50 bp – approx. 50 kbp |
| Typical yield | 1 – 30 µg | 10 – 100 µg | 50 – 300 µg |
| A₂₆₀/A₂₈₀ | 1.8 – 1.9 | 1.8 – 1.9 | 1.8 – 1.9 |
| Elution volume | 50 – 100 µL | 200 – 400 µL | 1 000 – 2 000 µL |
| Preparation time | 30 min / prep | 90 min / prep | 90 min / prep |
| Binding capacity | 50 µg | 200 µg | 500 µg |

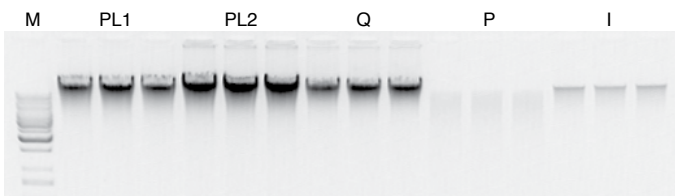
Application data

Purify DNA from a huge variety of plants



PCR analysis of isolated genomic DNA from different plant samples using NucleoSpin® Plant II. 100 mg plant material and Buffer PL1 or PL2 were used for lysis. PCR analysis was performed with 1 – 2 µL of each DNA eluate using primers against chloroplasts tRNA and loaded on a 1 % TAE agarose gel. Lane M: marker, lane 1 – 18: analyzed samples: willow, rose, fir needles, wheat, sugar beet, spruce needles, cherry tree, grass, elder bush, geranium, yew, stinging nettle, dragon tree, yellow soy bean, corn salad, garden cress, maize, gladiolus.

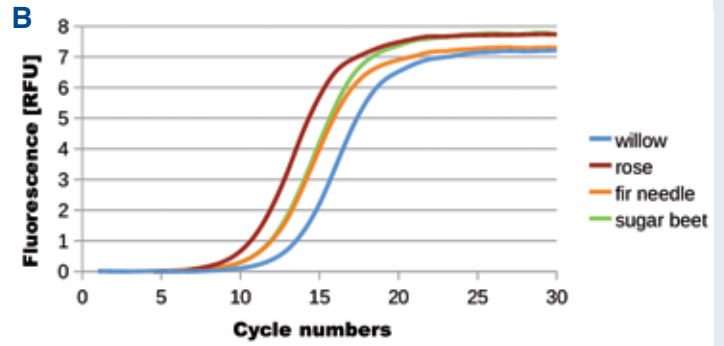
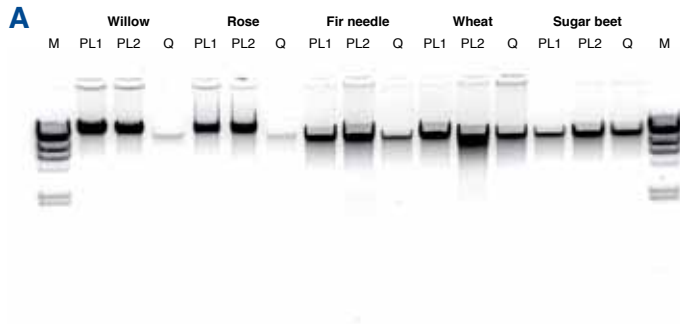
Alternative lysis – select the lysis buffer most suitable for your sample



Comparison to competitor kits. 100 mg fresh fir needles (*Abies alba*) were processed in triplicates using the NucleoSpin® Plant II kit (MN: Lysis Buffer PL1 and PL2) and competitor products (Q, P, and I). 10 µL of DNA eluates were analyzed on a 1 % TAE agarose gel.

Application data

Scale up your sample material – no compromise on purity or yield



Superior yield and purity

| C | | DNA yield [μg] | A_{260}/A_{280} | A_{260}/A_{230} |
|------------|----|-----------------------------|-------------------|-------------------|
| Willow | MN | 46 | 1.76 | 1.91 |
| | Q | 11 | 1.32 | 0.46 |
| Rose | MN | 24 | 1.73 | 1.62 |
| | Q | 7 | 1.21 | 0.43 |
| Fir needle | MN | 44 | 1.76 | 1.95 |
| | Q | 20 | 1.47 | 0.60 |
| Wheat | MN | 232 | 1.84 | 2.09 |
| | Q | 142 | 1.77 | 1.53 |
| Sugar beet | MN | 32 | 1.82 | 1.65 |
| | Q | 23 | 1.61 | 0.69 |

A: Isolation of genomic DNA from different plant samples using NucleoSpin® Plant II Maxi in comparison to competitor Q. 1500 mg of plant material were processed using Lysis Buffer PL1 and PL2 (NucleoSpin® Plant II Maxi) or competitor product Q. 10 μL of each DNA eluate was analyzed on a 1% TAE agarose gel.

B: qPCR of DNA purified by NucleoSpin® Plant II Maxi. Primers against conserved 18S rRNA show reliable quality of the DNA isolated from willow, rose, fir needle, and sugar beet.

C: Tabular overview of yield and purity for all samples shown in figure A.

NucleoSpin® 8 / 96 Plant II

Medium- and high-throughput kits for genomic DNA isolation

- ▶ **Flexibility for alternating number of samples**
Flexible 8-well strip (1 – 6 in parallel) and proven 96-well format
- ▶ **Minimized risk of cross contamination**
MN Wash Plate included
- ▶ **Convenient handling**
Processing under vacuum or by centrifugation
Manual and automated processing
Scripts for most automation platforms available



NucleoMag® 96 Plant

Magnetic-bead based isolation of genomic DNA

- ▶ **Magnetic solution for automated high throughput**
Easy resuspension, mixing, and efficient bead separation – minimized bead carry-over
- ▶ **Concentrated and ready-to-use DNA**
Small elution volumes $\geq 50 \mu\text{L}$
- ▶ **Minimized risk of cross contamination**
One tube processing



NucleoSpin® RNA Plant

RNA from plant and fungi samples

Optimized lysis procedure

Two alternative lysis buffers included – choose your buffer for best performance
NucleoSpin® Filters (shredders) included for efficient homogenization

Get high RNA yield and outstanding purity

Up to 70 µg ready-to-use RNA from 100 mg plant material
RNA of high integrity and purity – no inhibition of RT-PCR

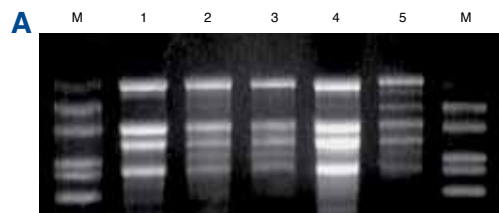
Suitable for a huge variety of plants

Successful isolation of RNA from leaves, roots, seeds, stem, and many other plant materials



Application data

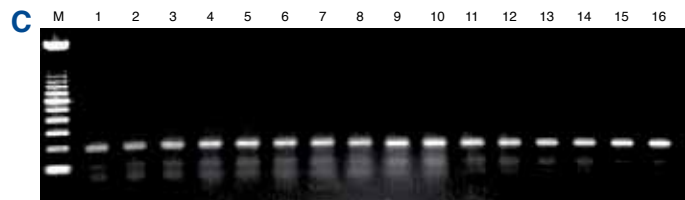
Superior RNA quality from different plant species



A: Total RNA was isolated from 50 mg of different plant species using NucleoSpin® RNA Plant. Aliquots of each eluate were analyzed on a 1 % formaldehyde agarose gel (M: marker, lane 1: maize, 2: thyme, 3: castor oil plant, 4: tobacco, 5: rye)

B: Total RNA of 50 mg garden cress was run on an Agilent 2100 Bioanalyzer (RNA 6000 Nano Chip). The electropherogram documents high structural integrity (lane 1: root, lane 2: leaf).

Reliable removal of secondary metabolites



C: RT-PCR of total RNA isolated from different plant species using NucleoSpin® RNA Plant. 3 µL of total RNA eluate was used for RT-PCR reactions (30 cycles). Products were analyzed on a 1.2% agarose gel (M: marker; lanes 1 – 2: tobacco, 3 – 4: tomato, 5 – 6: red pepper, 7 – 8: zucchini, 9 – 10: egg plant, 11 – 12: broccoli, 13 – 14: radish, 15 – 16: maize).

Ordering information

DNA Products

| Single prep (spin columns) | Preps | REF |
|----------------------------------|-----------|--------------------|
| NucleoSpin® Plant II | 10/50/250 | 740770.10/.50/.250 |
| NucleoSpin® Plant II Midi | 20 | 740771.20 |
| NucleoSpin® Plant II Maxi | 10 | 740772.10 |

Medium- and high-throughput (8-well strips and 96-well plates)

| | Preps | REF |
|---|-----------------|-----------------|
| NucleoSpin® 8 Plant II | 12x8/60x8 | 740669/.5 |
| NucleoSpin® 8 Plant II Core Kit | 48x8 | 740467.4 |
| NucleoSpin® 96 Plant II | 2x96/4x96/24x96 | 740663.2/.4/.24 |
| NucleoSpin® 96 Plant II Core Kit | 4x96 | 740468.4 |
| NucleoMag® 96 Plant | 1x96/4x96/24x96 | 744400.1/.4/.24 |

RNA Products

| Single prep (spin columns) | Preps | REF |
|------------------------------|-----------|--------------------|
| NucleoSpin® RNA Plant | 10/50/250 | 740949.10/.50/.250 |

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