

MACHEREY-NAGEL

Simple DNA extraction and genotyping

Bioanalysis

NucleoType®

- Lysis reagent for direct PCR/qPCR
- Ready-to-use genotyping solutions
- Column-free, convenient and fast workflows



MACHEREY-NAGEL

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Lysis Reagent for Direct PCR/qPCR

NucleoType® DirectLyse Reagent

- Universal lysis reagent for simple DNA extraction
- Single-tube / column-free sample preparation
- Compatible with various direct (q)PCR systems
- Minimizes pipetting steps with convenient master mix options
- Easy-to-use and extremely fast workflow

One-step
Lysis
reagent

Samples

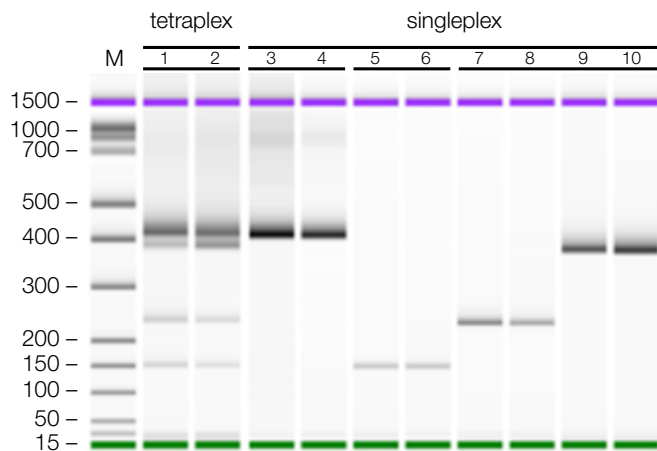
- Animal tissue (e. g. ear punches, tail clips)
- Hair samples
- Cultivated cells
- Blood
- Swabs
- Plant tissue

Applications

- Genotyping
- Knockout analysis
- Transgene detection
- GMO / pathogen detection



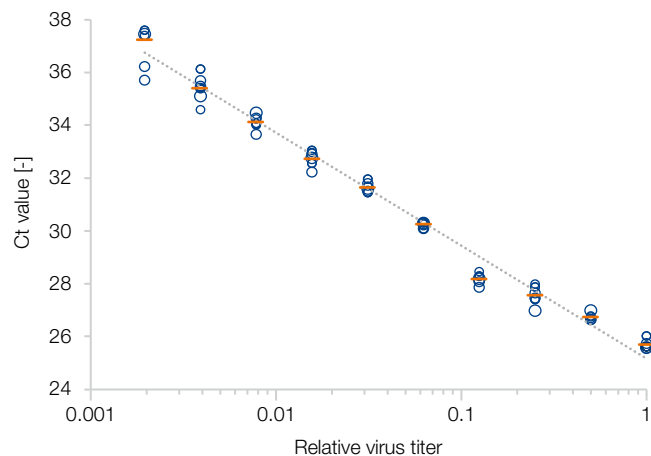
Application data



M: Marker (DNA ladder)

Food adulteration testing using Tetraplex PCR

A semi solid cheese labeled "made of cow, goat, and sheep milk" was used as sample material (lane 1 + 2) and DNA was extracted with NucleoType® DirectLyse Reagent. PCR was performed with NucleoType® HotStart PCR Master Mix with a tetraplex primer mix. PCR amplicates specific for goat (142 bp), beef (233 bp), sheep (371 bp) and a generic animal band (400 bp) are clearly visible. As a control, meat of goat (lane 3-6), beef (lane 7-8), and sheep (lane 9-10) was used for DNA extraction with NucleoType® DirectLyse Reagent and used for singleplex PCR with single species specific primer.



Pathogen detection in swab samples

Swabs were immersed in a serially diluted Poxiviridae virus stock (dsDNA virus) and extracted using the NucleoType® DirectLyse Reagent as per manual instructions. The subsequent qPCR analysis presents Ct-values plotted against relative virus titer. Ct-values, determined from six replicates for each dilution, demonstrate a consistent and robust extraction process. The data exhibit a reliable correlation throughout the entire dilution series, affirming the effectiveness of the extraction and qPCR analysis procedures.

Ready-to-use Genotyping Solutions

NucleoType® Direct PCR genotyping

- Column-free sample prep combined with robust PCR mix
- Includes HotStart PCR Master Mix for immediate use
- Easy-to-use and convenient sample transfer tools
- Versatile solutions for various samples
- Saves time and costs for genotyping workflows

NucleoType® Blood

Sample material	Whole blood (fresh or frozen; treated with EDTA, citrate, or heparin as anticoagulant); dried blood spots (e. g. on NucleoCard® blood storage cards; REF 740103.100)
Preparation time	Sample preparation: < 1 min; PCR cycling: 30–90 min (cycler and target size dependent)
Auxillary tools supplied with the kit	Blood Transfer Tool (BTT); ensures standardized transfer of blood samples; Inhibitor Removal Pearls for superior PCR results

NucleoType® Mouse

Sample material	Animal tissue; Tail clippings (1 mm); ear punches (1 mm Ø), blood (fresh or frozen; EDTA, citrate, heparin, or untreated), fur / hairs (approx. 3–30 mouse hairs)
Preparation time	Sample preparation: 5 min; PCR cycling: 30–90 min (cycler and target size dependent)
Auxillary tools supplied with the kit	Optimized lysis buffer and Proteinase K for simple sample preparation

NucleoType® Plant

Sample material	Leaf material from various plants such as corn, soybean, wheat, Arabidopsis, tobacco, cotton, grapevine, watercress, kiwi, banana, and avocado fruit flesh, among others
Preparation time	Sample preparation: < 1 min; PCR cycling: 30–90 min (cycler and target size dependent)
Auxillary tools supplied with the kit	Patented Plant Transfer Tool (PTT); ensures standardized transfer of plant samples while simultaneously inactivates inhibitors present in the sample material

NucleoType® Seed

Sample material	Hard plant materials, including seeds from soybean, wheat, corn, rice, as well as from moss, fern leaf, or fir needle
Preparation time	Sample preparation: < 5 min; PCR cycling: 30–90 min (cycler and target size dependent)
Auxillary tools supplied with the kit	Optimized lysis buffer and Proteinase K for simple sample preparation

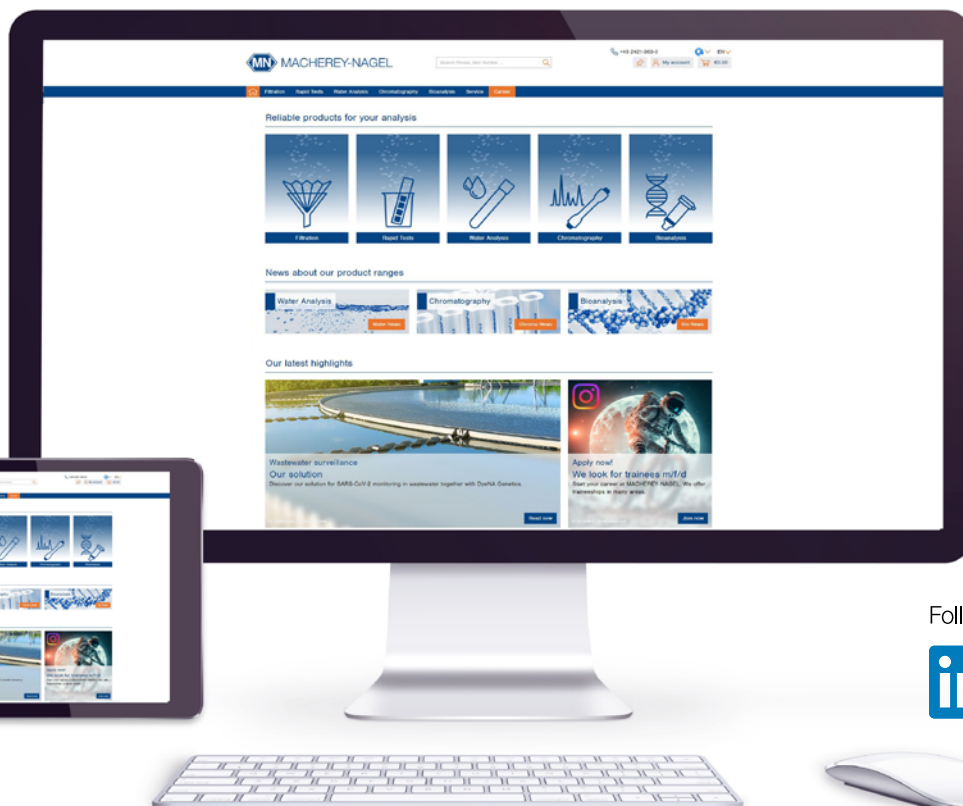


Ordering information

Product	Specifications	Preps	REF
NucleoType® DirectLyse Reagent	Lysis reagent for simple PCR-ready DNA extraction allowing direct utilization in subsequent PCR or qPCR reactions; contains extraction buffer XLR and Liquid Proteinase K	≤ 500	743220
NucleoType® Mouse PCR	For direct genotyping from mouse samples (tail clips, ear punches, hair follicles, blood); contains Lysis Buffer M, Liquid Proteinase K and NucleoType® HotStart PCR Master Mix (2x)	25 / 100 / 500	743200.25 / .100 / .500
NucleoType® Blood PCR	For direct genotyping from blood samples; contains Blood Transfer Tool (BTT), Inhibitor Removal Pearls (IRP) and NucleoType® HotStart PCR Master Mix (2x)	25 / 100 / 500	743201.25 / .100 / .500
NucleoType® Plant PCR	For direct plant genotyping; contains Plant Transfer Tool (PTT) and NucleoType® HotStart PCR Master Mix (2x)	25 / 100 / 500	743202.25 / .100 / .500
NucleoType® Seed PCR	For direct seed genotyping; contains Lysis Buffer P, Liquid Proteinase K and NucleoType® HotStart PCR Master Mix (2x)	25 / 100 / 500	743203.25 / .100 / .500
NucleoType® HotStart PCR Master Mix	Ready-to-go NucleoType® HotStart PCR Master Mix; contains polymerase, dNTPs, buffer, enhancer, stabilizer and loading dye	2.5 mL	743215
Lysis Puffer M	Lysis buffer to be used with NucleoType® Mouse PCR kits	250 mL	743210.250
Lysis Buffer P	Lysis buffer to be used with NucleoType® Seed PCR kits	250 mL	743211.250
Liquid Proteinase K	Liquid Proteinase K (14 – 22 mg/mL, > 50 U/mL)	5 mL 30 mL	740396 740396.30

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Management System
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