MACHEREY-NAGEL

NucleoMag® DNA Food

Automated DNA purification of food and feed samples on the MagnetaPure 32

Introduction

DNA-based analysis methods are increasingly used to ensure identity, safety, and labeling accuracy of food and feed.

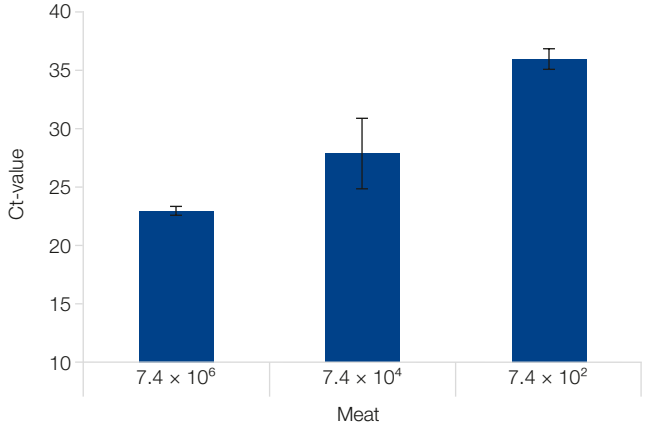
Food samples display a very heterogeneous sample matrix ranging from highly processed materials to raw material. Further, food specimen contain many different components, like lipids, polysaccharides or high content of proteins, which are released during DNA extraction. Processing during food production, such as sterilization, heating or canning, can lead to DNA fragmentation.

The MACHEREY-NAGEL NucleoMag® DNA Food is the ideal kit for the reliable isolation of DNA from these complex matrices due to its optimized buffer chemistry and excellent inhibitor removal. Here we demonstrate that our NucleoMag® DNA Food kit, automated on the MagnetaPure 32 platform is capable of extracting DNA from complex food matrices with high yields and devoid of PCR inhibitors. Isolated nucleic acids are suitable for the detection of food-borne pathogen as well as GMO-identification or genotyping.

The MagnetaPure 32 automated extraction robot is an intuitive and easy-to-use device for your nucleic acid extraction. The scripts for MACHEREY-NAGEL NucleoMag® kits are verified and ready-to-use, but can be flexibly adapted to your individual needs.

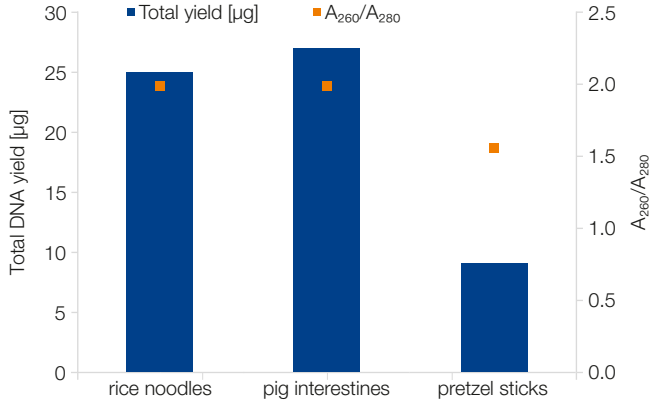
NucleoMag® DNA Food	
Technology	Magnetic beads
Sample material	≤ 200 mg feed, food
Typical yield	0.1–10 µg depending on sample quality
Elution volume	50–200 µL
Fragment size	300 bp–approx. 50 kbp
Preparation time	Approx. 38 min

MagnetaPure 32	
Description	Automated nucleic acid extraction instrument
Technology	Magnetic rods
Capacity	Up to 32 samples/run
Features	Compact Bench-top robot, ready-to-use NucleoMag® scripts, built-in UV lamp for decontamination, built-in heating block, open and flexible programming



Detection of *E.coli* in food samples

Three different dilution of a *E.coli* culture, ranging from 7.4×10^2 up to 7.4×10^6 CFU, were spiked into pork meat samples (200 mg sample material, n=3 per dilution). Nucleic acids were isolated using the NucleoMag® DNA Food kit using the MagnetaPure 32 automated extraction robot. A subsequent qPCR analysis was performed using *E.coli*-specific uidA-primers (β-d-glucuronidase gene) and SensiFast™ SYBR Lo-ROX from Bioline on a BioRad CFX96 system.



Reliable DNA extraction from various food sample matrices

DNA was isolated from different food and feed samples including rice noodles, pig intestines and highly processed food such as pretzel sticks using the NucleoMag® DNA Food kit. 200 mg of sample material was used per run (n=4). DNA yield and purity was determined via UV-spectrometry.

Product	Specifications	Pack of	REF
NucleoMag® DNA Food	Kit based on magnetic bead technology for the isolation of genomic DNA from food and feed samples including NucleoMag® B-Beads, buffers, Liquid Proteinase K	96 preps 384 preps	872209 872210

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