

MACHEREY-NAGEL

# DNA isolation for forensic applications

Bioanalysis



NucleoMag® / NucleoSpin® DNA Forensic

Meeting the requirements of DNA profiling

- Uniform buffer system for single sample and HTP analysis
- Conformity to ISO 18385 for doubtless DNA profiling
- Excellent DNA purity from all casework samples

**MACHEREY-NAGEL**

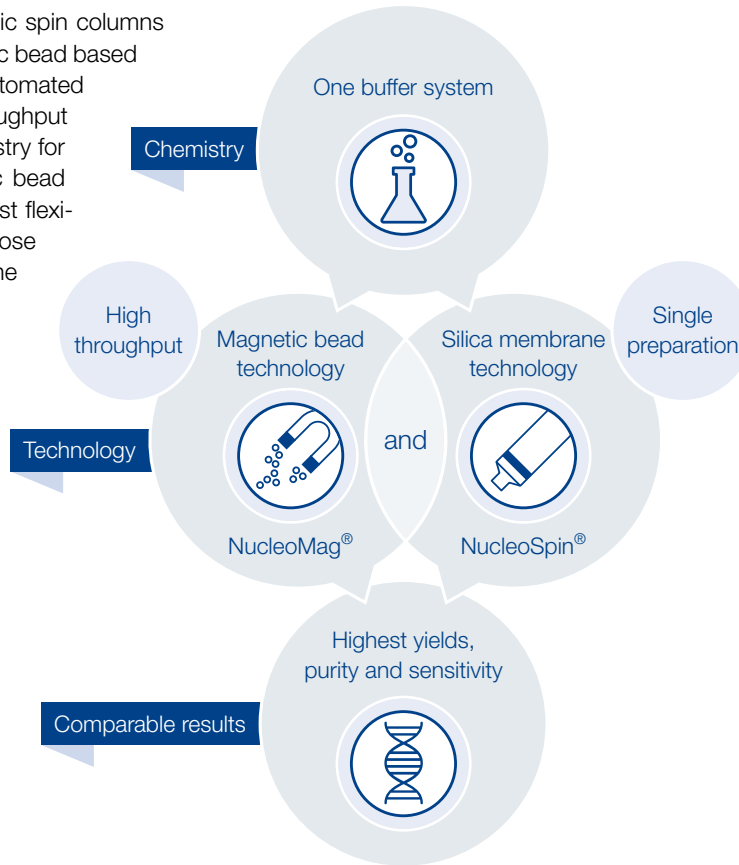
[www.mn-net.com](http://www.mn-net.com)



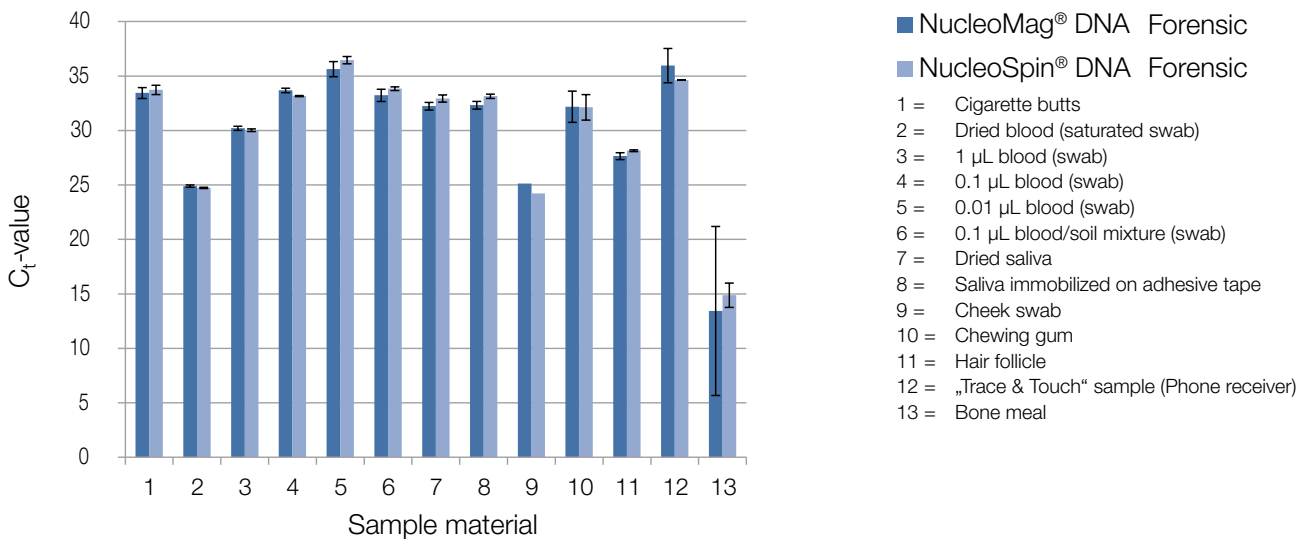
# DNA isolation for forensic science

The new MACHEREY-NAGEL DNA Forensic series perfectly matches requirements of forensic laboratories

Use either NucleoSpin® DNA Forensic spin columns for individual samples or the magnetic bead based NucleoMag® DNA Forensic Kit for automated nucleic acid isolation in high throughput formats (HTP). Uniform buffer chemistry for silica membrane based or magnetic bead based technology, guarantees highest flexibility for each individual case. Choose between both techniques without the loss of performance.



## Compatibility performance



### Equivalent gDNA recovery at a constantly high level

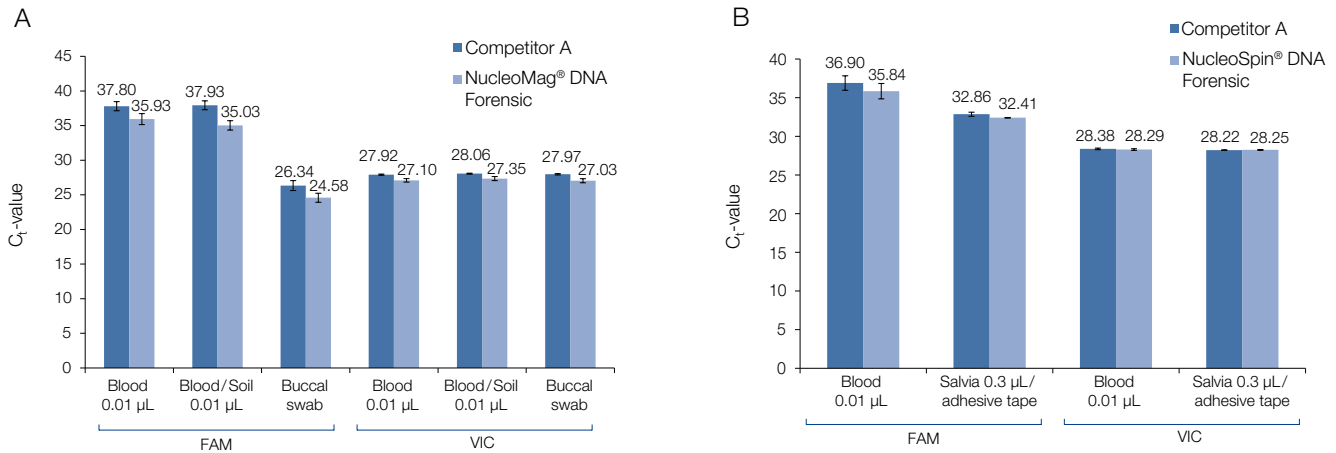
DNA was isolated from various sample material simultaneously with our NucleoMag® DNA Forensic kit (dark blue bars) and NucleoSpin® DNA Forensic kit (light blue bars). The comparable results of both kits demonstrate the flexible use due to uniform buffer chemistry. Depending on your preference on throughput, sample handling and purification technology, you can choose the optimal kit. The NucleoMag® DNA Forensic kit for high throughput (HTP) application, or the NucleoSpin® DNA Forensic kit for manual single spin preparation.

# DNA isolation for forensic science

## NucleoMag® DNA Forensic and NucleoSpin® DNA Forensic

- Improved performance due to optimized purification method
- Uniform buffer system for highest flexibility with reference to handling, processing and throughput
- Excellent DNA purity from all casework samples

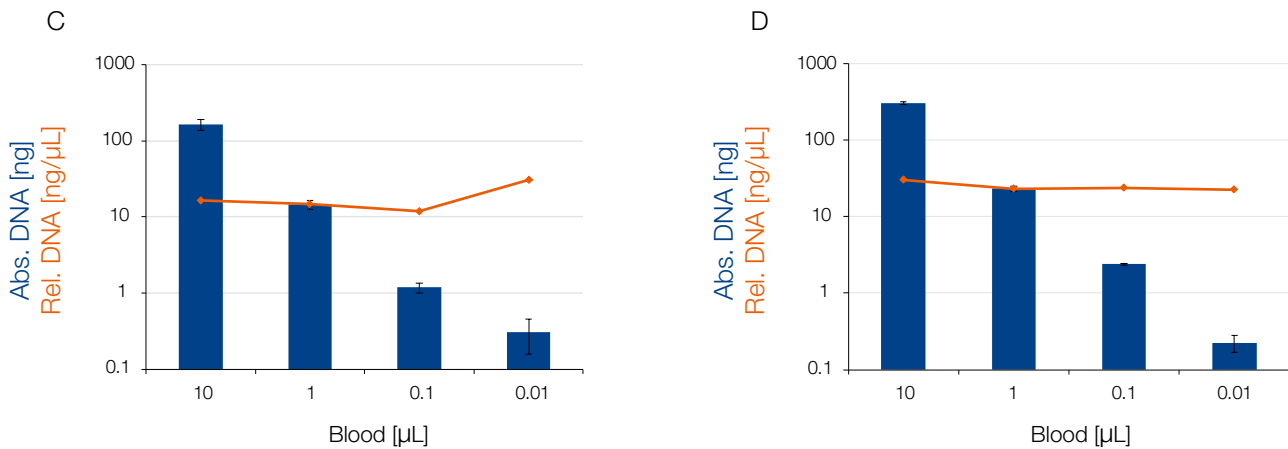
### Forensic kit comparison



#### Best performance for diverse sample material

- A) NucleoMag® DNA Forensic and kit from competitor „A“.
- B) NucleoSpin® DNA Forensic and kit from competitor „A“. Final DNA recovery was quantified using the Quantifiler® Human DNA Quantification kit. Analysis was performed with:
- FAM™ dye for detecting the amplified human telomerase reverse transcriptase gene sequence
  - VIC® dye for detecting the amplified Internal PCR Control (IPC) DNA

### Reliability performance



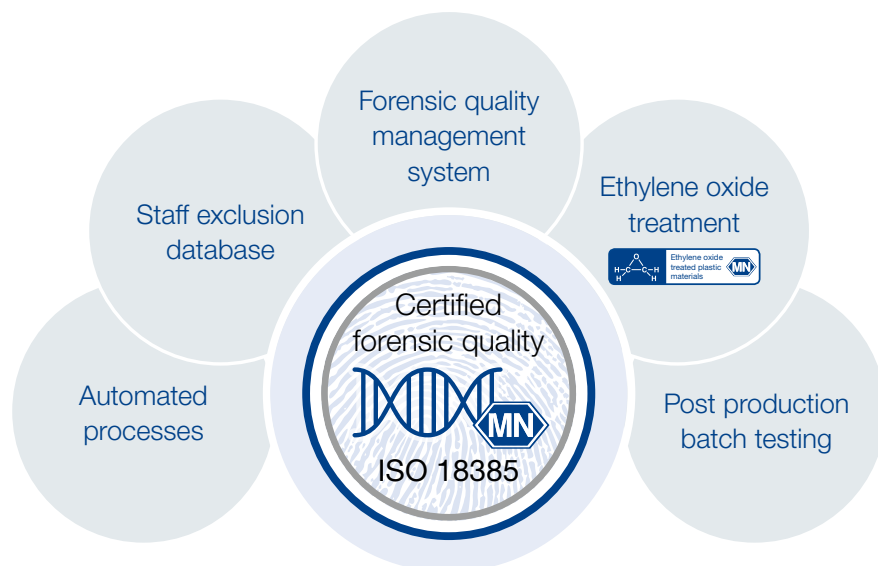
#### Consistent gDNA recovery relative to sample amount

DNA was recovered from increasing volumes of blood added to swab material. Purification was performed with the

- C) NucleoMag® DNA Forensic Kit and the
- D) NucleoSpin® DNA Forensic Kit. The consistent correlation of DNA amount and sample volume (orange line) demonstrates that performance of the kit is not affected by sample volume.

# DNA isolation for forensic science

Doubtless DNA profiling guaranteed



The NucleoMag® DNA Forensic and NucleoSpin® DNA Forensic Kits comply with all ISO 18385 requirements. The ISO 18385 specifies demands for the manufacturing of products used in the collection, storage, and analysis of biological material for forensic DNA purposes. We implemented the ISO 18385 for the production of kits for forensic applications. Therefore we minimized the risk of human DNA contamination in all our products labeled for isolation of nucleic acids from forensic samples. All consumables used in our forensic product line are treated (post production) with ethylene oxide (EO), the recommended method to remove amplifiable DNA prior to forensic sampling.\*

By product labeling with the „ISO 18385 Certified forensic quality“ logo, MACHEREY-NAGEL declares the ISO 18385 compliant manufacturing of these products.

## Reference

\*Shaw et al, 2008, Comparison of the effects of sterilisation techniques on subsequent DNA profiling. Int J Legal Med 122:29-33.

Product	Specifications	Preps	REF
NucleoMag® DNA Forensic	Kit based on magnetic bead technology for the isolation of genomic DNA from forensic samples	1 x 96 4 x 96	744660.1 / .4
NucleoSpin® DNA Forensic	Spin column based kit for the isolation of genomic DNA from forensic samples – can be combined with NucleoMag® DNA Forensic	10 / 50 / 250	740840.10 / .50 / .250
Product accessories	Specifications	Pack of	REF
NucleoSpin® Forensic Filters (Bulk)	Semipermeable minispin tubes for incubation and lysate separation in one tube	50 / 250 / 1000	740988.50B / .250B / .1000B
NucleoSpin® Forensic Filters	Semipermeable minispin tubes for incubation and lysate separation in one tube (single blistered)	50 / 250	740988.50 / .250
NucleoSpin® Trace Filter Plate	96-well plate for separation of lysate from swab material by centrifugation without the loss of lysate	20	740677
NucleoMag® SEP	Magnetic separator for 96-well plates	1	744900
NucleoSpin® DNA Trace Bone Buffer Set	Accessory set for the isolation of genomic DNA from human bones	1	740943.25

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