

Sample Preparation Made Easy. Comprehensive Solutions for Nucleic Acid Extraction



Nucleic Acid Extraction and Enabling Technologies

Analytik Jena stands for unrivaled quality and variety in nucleic acid isolation kits.

Whether the starting samples should be treated manually or run in an automated process, here you will find appropriate products for fast and reliable results. It's not for nothing that countless laboratories worldwide trust in our established kits. The product portfolio is completed by a wide choice of patented extraction chemistry: spin-filter-based isolation of DNA and/or RNA, as well as for use with magnetic particles. Other innovative approaches meet any other needs you have, like SmartExtraction for extra easy automation, Polymer Mediated Enrichment for the efficient recovery of free-circulating DNA, and a lot more enabling technologies.

One purchase decision – plenty of advantages Analytik Jena's kits impress customers:

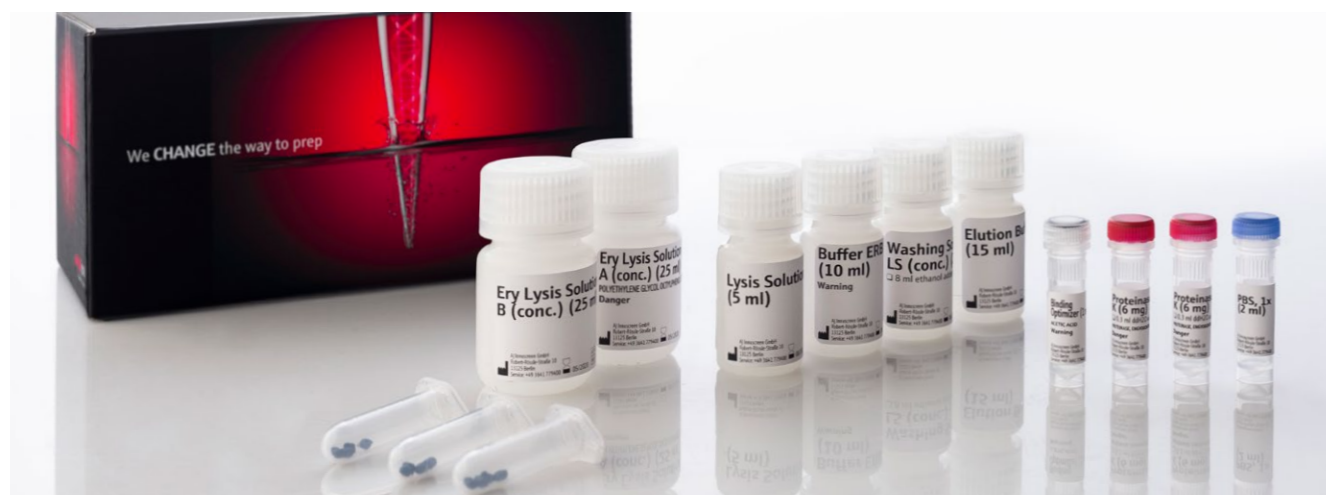
- Easy isolation of DNA/RNA from all samples
- High yields from different starting materials
- Highest sensitivity and reproducibility
- Time-saving procedures
- Convenient handling
- Minimized use of hazardous chemicals for risk-free working procedures
- Successful downstream applications

All From One Hand

Biotechnological Competence from Analytik Jena



We Change the Way to Prep SmartExtraction



More than 35 years after silica-based DNA and RNA isolation was first scientifically documented¹ Analytik Jena is launching a global innovation in nucleic acid extraction. SmartExtraction significantly accelerates and considerably simplifies the entire procedure. Most notably, the technology accommodates the trend towards maximum process automation.

In order to provide users with maximum freedom when selecting materials, SmartExtraction was designed to be platform independent. The technology can be used with Analytik Jena's pipetting system InnuPure C16 *touch*, and CyBio FeliX, and is simple to adapt for use with any liquid handling system². The required laboratory equipment is reduced to a thermal shaker and a magnet rack for manual applications.

In addition to simplifying procedures, SmartExtraction is also superior to other technologies in terms of yield, DNA quality, and efficiency criteria: Thanks to high binding capacities, large amounts of high-molecular DNA can be extracted with the appropriate starting materials. Compared with magnetic particle technology used in conjunction with automated pipetting extraction systems, the new technology significantly increases the amount of extracted nucleic acids in many applications, while substantially reducing the processing steps required.

That's Not Optimization – That's a Quantum Leap!

DC-Technology Meets Smart Surfaces

- No phenol/chloroform
- No ion exchanger
- No silica materials or spin filter columns
- No silica or magnetic particle suspensions

Focused on downstream: extracting high molecular weight DNA

SmartExtraction completely eliminates the need for centrifugation, vortexing, and other stress factors for nucleic acid. With a minimal risk of shearing the DNA, fragments of up to 500 kbp can be isolated.



Figure 1: A comparison between manual nucleic acid extraction using an anion exchanger and SmartExtraction with the InnuPure C16. The Rotaphor system (PFGE – pulsed field gel electrophoresis) was used to determine the molecular weight of isolated DNA.

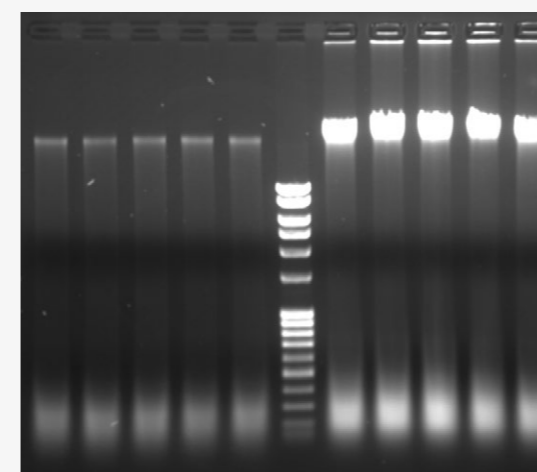
Lane 1: DNA ladder (48.5 kbp to 727.5 kbp)
Lane 2: *E. coli* DNA after isolation via SmartExtraction with the InnuPure C16
Lane 3: *E. coli* DNA following anion exchange isolation

Sample	A260:A280	A260:A230	Concentration [ng/μL]
SmartExtraction	1.99	1.77	283.73
Anion exchanger	1.97	2.26	117.00

Without peer: high yield meets ideal quality

The innovatively modified surfaces ("Smart Modified Surfaces") used in SmartExtraction represent a unique solid phase that optimally separates nucleic acids from other cell components. Behavior and conditions during extraction are

ideally suited for binding nucleic acids without the clumping that can appear when using magnetic particles. Finally, the highly efficient routine also results in fantastic yields and top quality when eluting nucleic acids.



No.	Method	A260:A280	A260:A230	Conc. [ng/μL]	Yield [μg]
1	MAG beads	1.97	2.30	124	22.8
2	MAG beads	1.98	2.43	124	24.8
3	MAG beads	2.00	2.42	127	24.8
4	MAG beads	2.02	2.42	115	25.4
5	MAG beads	2.00	2.45	132	23.0
7	SmartExtraction	1.97	1.98	258	51.6
8	SmartExtraction	1.97	2.11	298	59.6
9	SmartExtraction	1.96	1.96	321	64.2
10	SmartExtraction	1.96	2.15	350	70.0
11	SmartExtraction	1.95	2.06	321	64.2

Figure 2: A comparison between DNA isolation based on magnetic particle separation and on SmartExtraction. Tissue samples of 80 mg chicken meat each were used. In contrast to the magnetic particle isolation, the yield of DNA more than doubles when using SmartExtraction while simultaneously cutting prep time in half. Lane 1–5: DNA after isolation from 80 mg chicken meat samples via magnetic particles; Lane 6: DNA ladder; Lane 7–11: DNA after isolation from 80 mg chicken meat samples via SmartExtraction.

¹ Bert Vogelstein, David Gillespie; „Preparative and analytical purification of DNA from agarose“ Proc. Natl. Acad. Sci. USA; Vol. 76, No. 2, page 615-619, February 1979; Biochemistry

² Pipetting systems with 1 mL pipetting heads



Independent from the used platform - InnuPure C16 *touch* or CyBio FeliX - SmartExtraction is ideally suited for easy automation of nucleic acid extraction.

Automation made easy: platform independent technology

The unique SmartExtraction pipette tip with included Smart Modified Surfaces as granulates allows an easy setup of automated nucleic acid extraction on different liquid handling platforms. No additional tools, like centrifuges or magnet adapters are necessary allowing for fast adaption of the whole liquid handling procedure.

Just one single requirement needs to be fulfilled: fit of the 1 mL SmartExtraction tip to the liquid handling system, which perfectly aligns to Analytik Jena's automation portfolio, including the InnuPure C16 *touch* and CyBio FeliX. Just choose a kit according to you specific application and get the automated nucleic acid extraction started on InnuPure C16 *touch* or CyBio FeliX based on pre-defined protocols.

High performance manual extraction

SmartExtraction also simplifies manual isolation of DNA from various starting materials requiring much less equipment than conventional solutions: Instead of an additional centrifuge, a thermal shaker is everything needed. Thus, manual nucleic acid extraction protocols based on SmartExtraction are both extremely simple to do and fast.

At the same time it comprises a exceedingly gentle procedure which affords nucleic acid extracts of minimal fragmentation.

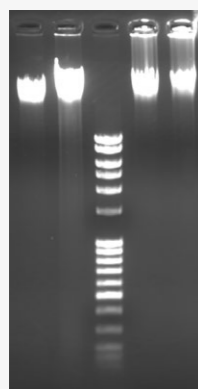


Figure 3: A standard kit based on salt precipitation and manual SmartExtraction were tested in comparison. Each 3 mL and 5 mL of a whole blood sample was used as starting material. Finally the isolated nucleic acids were measured by using a spectrophotometer and visualized on an agarose gel. Especially relating to the size of the extracted DNA, SmartExtraction clearly shows unmatched results. Lane 1: DNA after salt precipitation using 3 mL whole blood, Lane 2: DNA after salt precipitation using 5 mL whole blood, Lane 3: DNA ladder, Lane 4: DNA after SmartExtraction using 3 mL whole blood, Lane 5: DNA after SmartExtraction using 5 mL whole blood.

Sample	Kit	Volume of whole blood*	Concentration [ng/μL]	Yield [μg]	A260:A280	A260:A230
1	Salt precipitation	3 mL	70.5	52.9	1.763	2.074
2	Salt precipitation	5 mL	207.0	155.3	1.773	2.065
3	SmartExtraction	3 mL	128.0	96.0	1.835	2.217
4	SmartExtraction	5 mL	224.0	168.0	1.836	2.309

* The resulting nucleated cells



It's the Chemistry DC-Technology



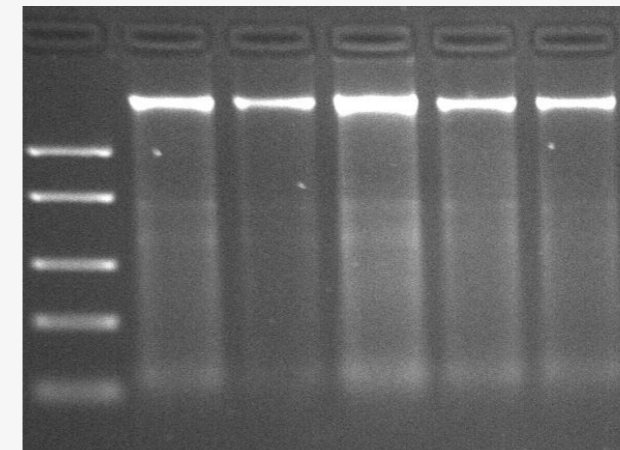
Faster. More efficient. Just Better. The well established platform of Analytik Jena's nucleic acid extraction was and is the patented Dual-Chemistry-(DC-) Technology. Means the DNA/RNA isolation kits from Analytik Jena are not just marginally different from competitors' products but differ in substance: sophisticated chemistry!

The heart of DC-Technology is the highly efficient binding of DNA to solid phases without a high salt concentration. Instead a combination of chaotropic and non-chaotropic salts with low ionic strength is used, enabling the development of optimized lysis and new binding buffers.

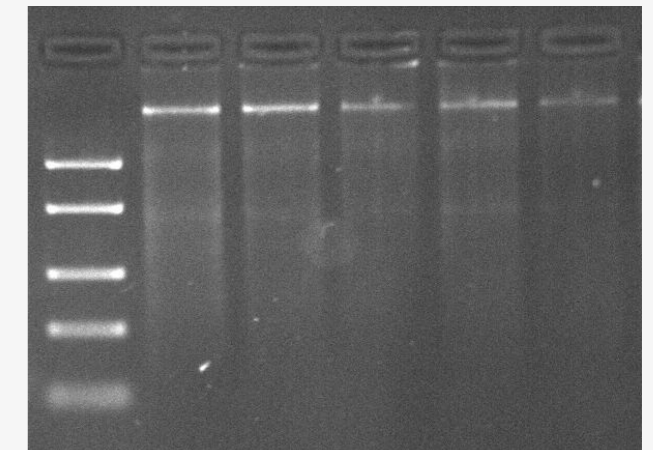
DC-Technology is not only the basis of SmartExtraction it also allows high performance by using Spin Filters for manual nucleic acid extraction. Thereby for users nothing changes with regard to hardware and work organization: The routines stay the same. However, the improvements in quality, time of preparation and often referring to the downstream results are satisfying – and this applies even more, the more complex the starting materials are.

Are you frustrated with long lysis times for your DNA extraction?

Discover the capacity of fast lysis powered by Proteinase K. Some things are worth the wait. Fortunately, extraction does not have to be one of those things. Because time to result is crucial in all laboratories.



A: Analytik Jena

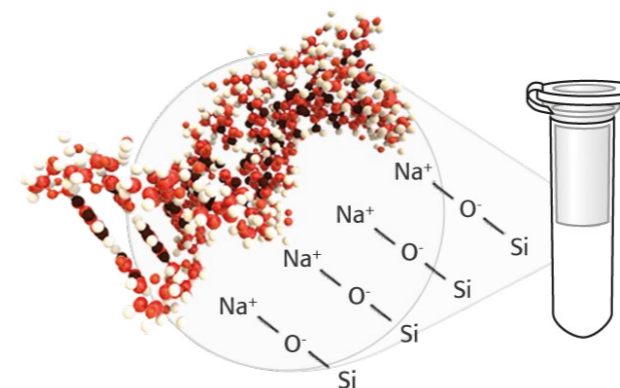


B: Competition

No.	Kit	A _{260:280}	Conc. [ng/μL]
1	Analytik Jena	1.96	63.55
2	Analytik Jena	1.95	75.86
3	Analytik Jena	1.97	98.11
4	Analytik Jena	1.97	84.11
5	Analytik Jena	1.96	62.67
6	Competition	2.13	32.44
7	Competition	2.01	36.95
8	Competition	2.03	38.81
9	Competition	2.03	33.1
10	Competition	2.05	21.23

Figure 4: A comparison of the innuPREP DNA Mini Kit with a competing spin filter extraction kit from another market leader. Approximately 25 mg of pork tissue was used for DNA isolation. Determination was repeated five times. The starting material was lysed for 30 minutes and then treated in accordance with each kit's user manual.

Figure 4A shows the DNA extracted using the innuPREP DNA Mini Kit, and Figure 4B shows the DNA extracted using the competing product. The yield obtained with Analytik Jena's DC Technology is more than double of the competitor's, while both kits produce equal quality.



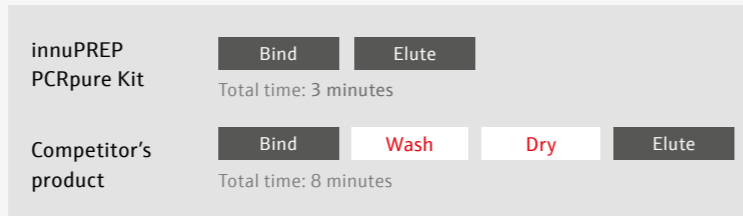
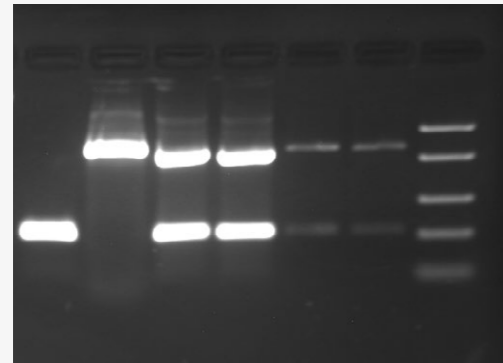
The need of flexible and versatile ready-to-use kits is growing more and more. The fast, easy and secure handling of DC-Technology perfectly meets those requirements.

For more detailed information about DC-Technology® extraction kits, please refer to the microsite: www.dual-chemistry.com.

Does your kit require four steps to clean up PCR products?

Discover comprehensive cleanup with minimized handling. Everyone loves a shortcut that does not negatively affect the results. If you can reach the same results with half the effort, then why not do so?

Low-salt DC-Technology puts an end to extensive washing and total washing (e.g., by using innuPREP PCRpure, which can perform PCR purification in 3 minutes).



B: Comparison of hands-on time

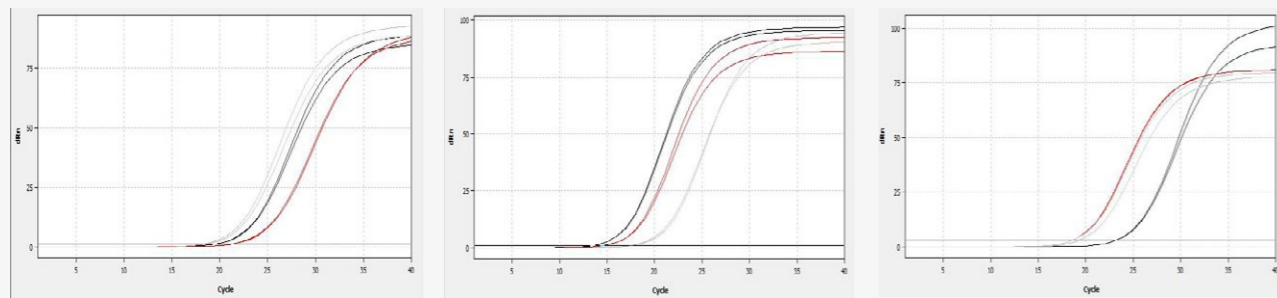
A: Gel image

Figure 5: Two different PCR reaction mixes – one containing a 210 bp fragment and the other a 536 bp fragment – were mixed and used for the purification of PCR products by innuPREP PCRpure Kit. This was compared to a competing, commercially available isolation kit. Both are based on the binding of nucleic acids to spin filter columns.

5A Gel Image with
 Lane 1: 210 bp fragment before purification
 Lane 2: 536 bp fragment before purification
 Lane 3–4: PCR fragments after purification using innuPREP PCRpure Kit
 Lane 5 to 6: PCR fragments after purification using a competing spin filter isolation kit for PCR products
 Lane 7: DNA ladder
 5B compares steps and time needed for purification. The innuPREP PCRpure Kit only needs three minutes and two simple steps to isolate high-quality PCR products from PCR reaction mixes. This saves users time and work!

Do you need to use multiple tools for one task?

Discover the clever setup of Analytik Jena's kits. Thanks to DC-Technology, processes like plant DNA/RNA isolation can easily be optimized with up to three different lysis buffers.



A: Oil palm leaf

B: Papaya leaf

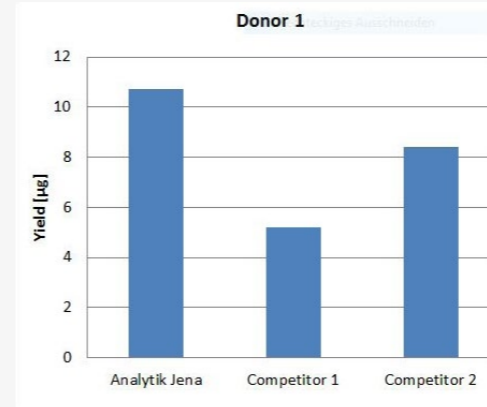
C: Black bean seed

Figure 6: Depending on the starting material, the three lysis buffer system of the innuPREP Plant DNA Kit simplifies and speeds up the extraction process. The real-time plots show the influence of lysis on the final amplification results. Black: Lysis buffer CBV. Red: Lysis buffer OPT. Gray: Lysis buffer SLS.

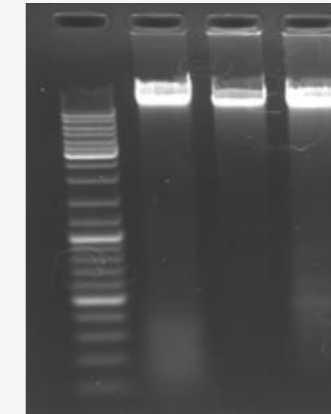
Do you feel helpless when it comes to optimizing downstream cutoffs?

Discover crown sensitivities with a comparatively higher sample input. Because nucleic acid extraction is just a means to an end, the most important asset in this process is a kit users can rely on.

The innuPREP Virus Kits as well as innuPREP Blood DNA Mini Kit allow the input of up to 400 µL of starting material for optimal sample preparation and highly sensitive results.



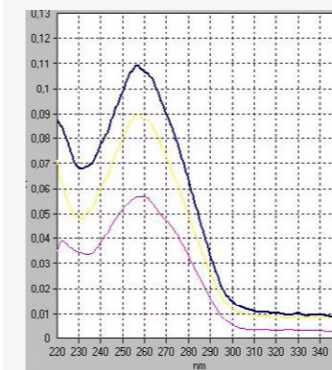
A: Yield of DNA



B: Gel image

Figure 7: 400 µL of whole blood (EDTA) were used for isolating human genomic DNA based on spin filter extraction kits from different suppliers.

7A: Extracted amount of DNA
 7B: Gel Image
 Lane 1: DNA ladder;
 Lane 2: Analytik Jena;
 Lane 3: Competitor 1;
 Lane 4: Competitor 2



C: UV/Vis spectra

	260/280	260/230	Conc. [ng/µL]
Blue (Analytik Jena)	1.81	1.66	53.38
Pink (Comp. 1)	1.79	1.71	28.32
Yellow (Comp. 2)	1.96	2.02	44.01

7C: UV/Vis spectra of eluted DNA and the corresponding determination of yield and quality

The Optimal Solution for Each Application



State-of-the-art automation:
Magnetic particle based extraction



Perfect fit: Automated nucleic acid extraction based on magnetic beads

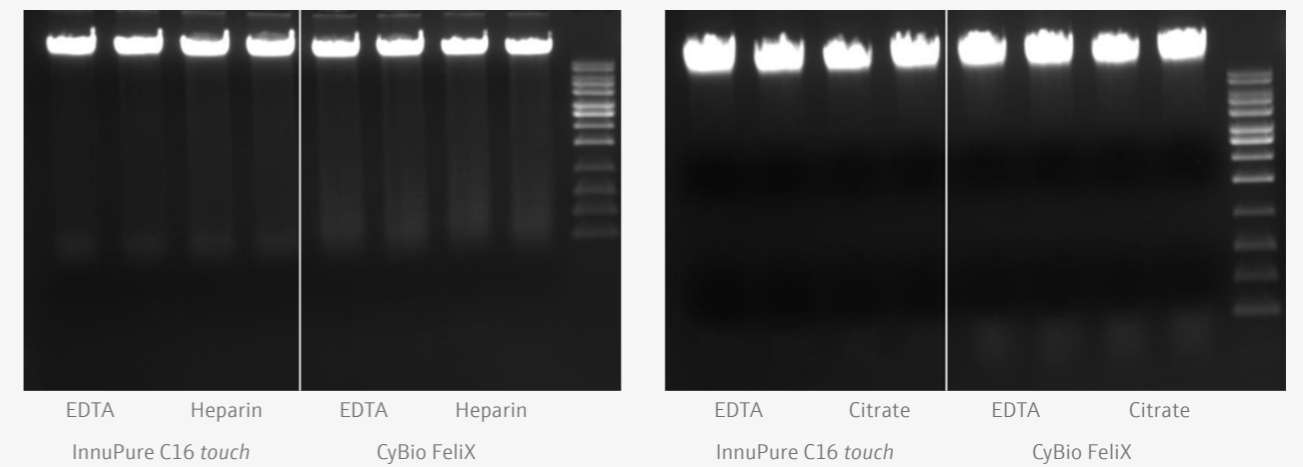
DC-Technology is also suitable for proven magnetic particle separation, with the same outstanding advantages as described for manual Spin Filter nucleic acid extraction. Especially for the InnuPure C16 *touch* and CyBio FeliX, but also for King Fisher® devices a variety of different nucleic acid extraction kits are available. Excellent results with high purity and yield are guaranteed. This ensures the final product to be free of proteins, nucleases and other contaminants and to be used immediately for subsequent applications. All instruments make sure that time is saved significantly and manual interventions are reduced to an absolute minimum. The extraction automats operate all pipetting and mixing steps included in the routine.

Best functionality:
minimal hands-on time for full automation

No two whole blood samples are the same. This makes nucleic acid isolation quite a challenge, especially when it comes to automated solutions. Cell numbers and conditions such as coagulation will vary dramatically. The CyBio FeliX as well as the InnuPure C16 *touch* are high-grade pipetting systems optimized to efficiently isolate DNA from whole blood samples of up to 400 µL.

Both pre-filled, sealed reagent plastics in case of InnuPure C16 *touch* and pre-filling routines by CyBio FeliX reduce manual steps to a minimum. After sample loading the routine for automated nucleic acid extraction can be started via pre-defined protocols.

Figure 8: Genomic DNA from 200 µL of stabilized with EDTA, heparin or citrate were extracted automatically. Independent on the used platform – innuPREP Blood DNA Mini Kit-IPC16 on InnuPure C16 *touch* for medium throughput or innuPREP Blood DNA mini Kit-FX on CyBio FeliX for high throughput applications – the yield and quality of DNA eluates are equal and comparable.



Device	Sample type	Sample volume	260/280	260/230	Yield [µg]
InnuPure C16 <i>touch</i>	EDTA	200 µL	1.82	2.20	8.1
	Heparin	200 µL	1.82	2.41	7.7
CyBio FeliX	EDTA	200 µL	1.82	2.15	7.9
	Heparin	200 µL	1.81	2.19	7.5
InnuPure C16 <i>touch</i>	EDTA	200 µL	1.78	2.20	5.2
	Citrate	200 µL	1.80	2.42	4.6
CyBio FeliX	EDTA	200 µL	1.78	2.06	6.0
	Citrate	200 µL	1.80	2.12	5.7

Reduce contamination:

easy handling of even the most complex matrices

Processed food represents a particular challenge when it comes to isolating nucleic acids. This is down to spices and treatments needed for stabilization. Additionally nucleic acids in those sample materials are often of low concentration and highly degraded.

The combination of InnuPure C16 *touch* and innuPREP Food DNA Kit – IPC16 utilizes high-quality magnetic particle-based DNA extraction from any number of different food samples, ranging from sausages and chocolate bars to potato chips and instant soups.

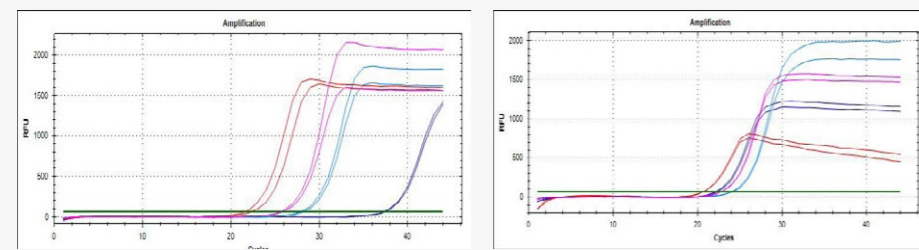


Figure 9: A comparison between DNA that was isolated automatically using InnuPure C16 and DNA isolated using a competing machine and its magnetic particle extraction kits. DNA was isolated from potato chips and instant soup. Finally, a target-specific amplification in real-time was carried out with double determination of the undiluted and 1:10 diluted sample.

A: Spicy potato chips

B: Instant soup

Sample	Kit	Ct value (undiluted)	Ct value (1:10 dilution)
Spicy potato chips	Analytik Jena	21.9	25.7
	Competitor	37.4	28.1
Instant soup	Analytik Jena	20.6	22.8
	Competitor	22.2	24.1

In alignment with the starting material:

three lysis buffer system

Nucleic acid extraction is just a means to an end. Nevertheless, it's a crucial step for all downstream applications. To simplify things, Analytik Jena's

innuPREP Plant DNA Kit – IPC16 contains three different lysis buffers, which enable it to adapt perfectly and simply to any plant material. The result? Ideal DNA yields and quality.

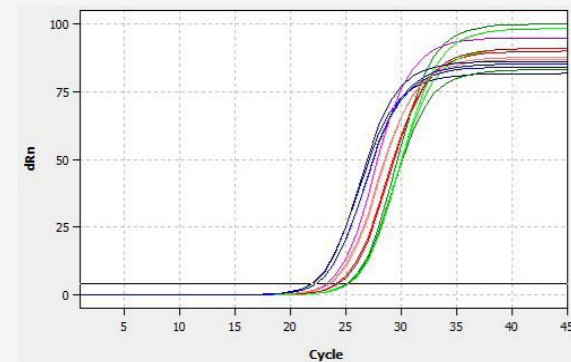
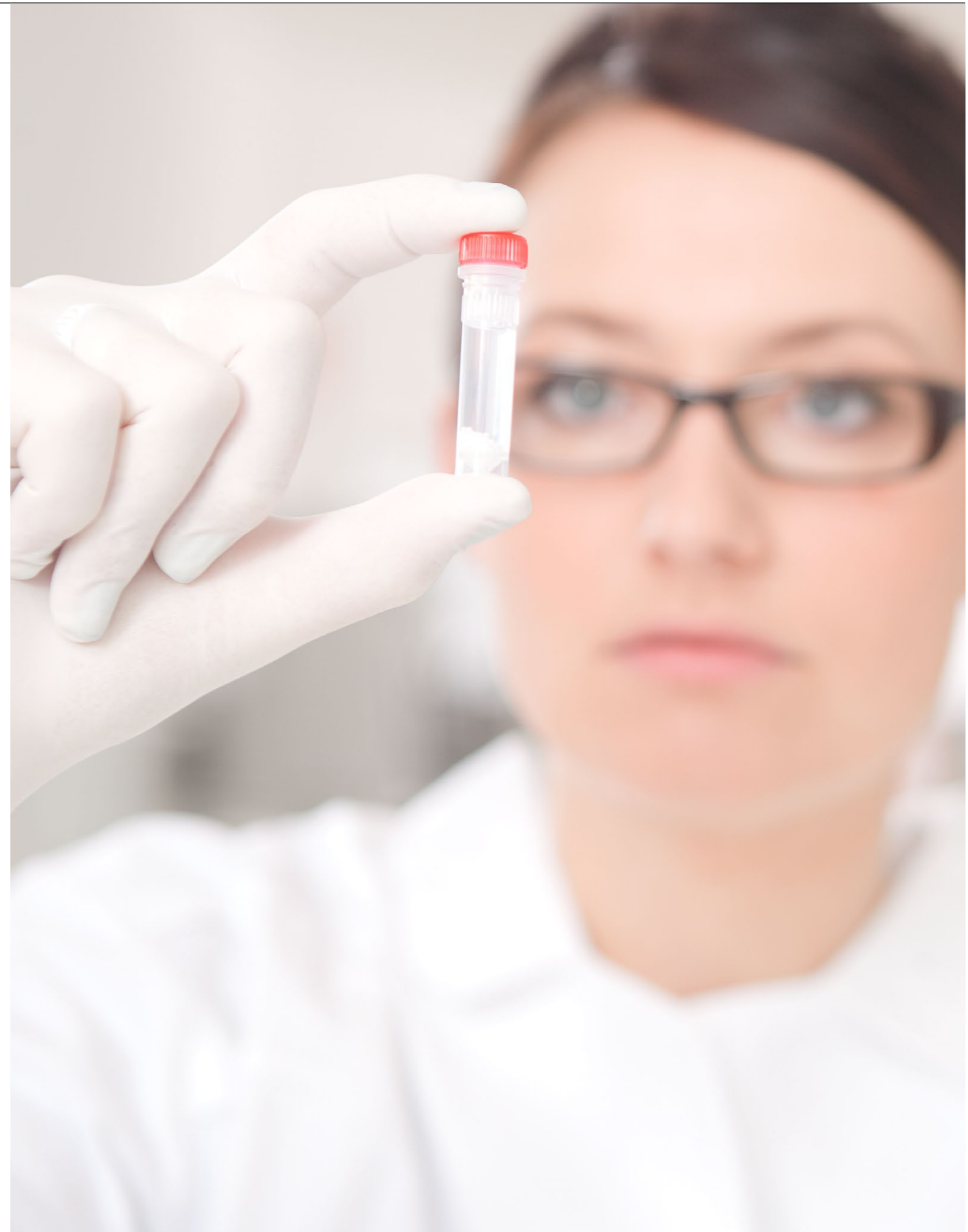


Figure 10: Two different samples of rice grains were lysed using three different lysis buffers for automatic extraction via InnuPure C16 and magnetic particle separation. 9A: Rice-specific amplification plots. Blue: Lysis buffer CBV; Red: Lysis buffer SLS; Green: Lysis puffer OPT

Lysis buffer	Samples	Ct value	Mean Ct	Std. dev. Ct
SLS	Sample 1	24.34	24.25	0.12
	Sample 1	24.16		
	Sample 2	23.53	23.47	0.09
	Sample 2	23.40		
OPT	Sample 1	25.09	25.13	0.05
	Sample 1	25.16		
	Sample 2	25.10	25.17	0.09
	Sample 2	25.23		
CBV	Sample 1	21.86	21.94	0.11
	Sample 1	22.02		
	Sample 2	22.27	22.27	0.01
	Sample 2	22.27		

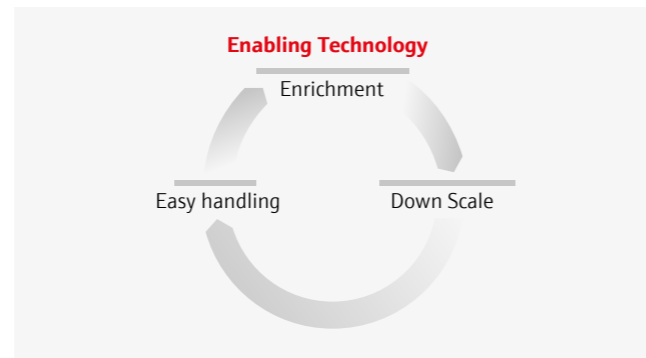


Enrichment

Special-purpose solution: Enabling technologies



New and inventive technologies are needed as additional options to standard methods for isolating nucleic acids. New fields of application are especially in need of innovation. Analytik Jena's product line for enrichment contains unique patented methods that serve as a solution to challenging special requirements.



Enrichment

PME – Polymer-Mediated Enrichment



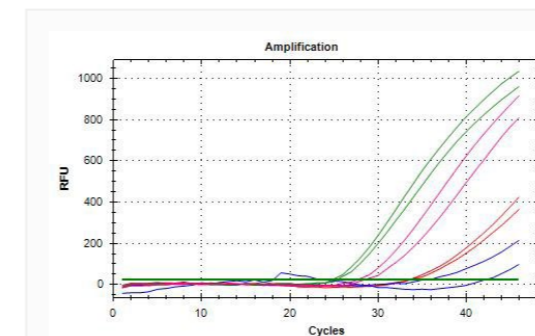
Targeting free-circulating DNA or DNA in elevated sample volumes or complex matrices is a challenging task requiring innovative technology. New approaches for enriching nucleic acids are needed when it comes down to ensure reliable downstream results. Polymer-mediated enrichment (PME) quickly and efficiently captures nucleic acid in a large volume of up to 10 mL of starting material. The polymer/DNA complex is then collected through centrifugation and isolated using either spin filters or magnetic particles, depending on whether the setup is manual or automated.

- Enriches and extracts free-circulating DNA or small amounts of DNA, e.g., for vegan testing
- Works with up to 10 mL of starting material
- Uses an extremely easy-to-handle and time-saving procedure, ca. 30 min
- Offers both a manual version based on spin filter extraction and automated routines by InnuPure C16 and C16 touch

Ideal preparation of challenging samples

The determination of pork DNA in gelatin is a challenge for any nucleic acid isolation method because industrial gelatin production destroys and removes the majority of the DNA.

The unique PME technology allows a fast and effective enrichment of residual DNA for sensitive downstream applications.



A: Amplification plots

Figure 11: One gummy bear was dissolved in 3 mL PBS (1x). Depending on the extraction routine and method, different volumes of the solution were used to isolate the DNA from the gelatin. A pork DNA-specific, real-time amplification was carried out to determine the yield of extracted DNA.

Plot	Extraction	Sample	Kit	Ct value
Green	PME	3 mL	PME Gelatin Kit	25.42
Green	PME	3 mL	PME Gelatin Kit	24.88
Pink	PME	1 mL	PME Gelatin Kit	27.73
Pink	PME	1 mL	PME Gelatin Kit	28.56
Red	MAG beads	400 µL	innuPREP Food DNA Kit – IPC16	33.63
Red	MAG beads	400 µL	innuPREP Food DNA Kit – IPC16	33.70
Blue	Spin filter	200 µL	innuPREP DNA Mini Kit	35.98
Blue	Spin filter	200 µL	innuPREP DNA Mini Kit	42.29

B: Determination of Ct values

High starting volumes and improved sensitivity

In addition to plasma and serum, urine samples can also be processed using the PME free-circulating DNA Extraction Kit. A starting volume of up to 10 mL is used, ensuring that

the final concentration of cell-free DNA will be sufficient for detection carried out in further applications.

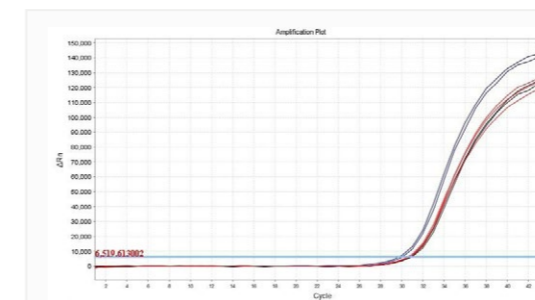



































Figure 12: Free-circulating DNA from human urine samples of 5 and 10 mL was extracted using the PME Free-Circulating DNA Extraction Kit. Subsequently, the cell-free DNA was tested and compared with DNA that had been extracted from a 4 mL urine sample subjected to a competing extraction kit for free-circulating nucleic acids (market leader). Real-time PCR was used by amplifying a human-specific coding gene. The blue and black graphs correspond to extraction from the 10 mL sample and from the 5 mL sample with the PME technology. The red graphs correspond to the 4 mL sample applied to the competitor's product.

RNA

	Manual	Automated
Bacteria	 innuPREP Micro RNA Kit innuPREP DNA/RNA Mini Kit innuPREP RNA Mini Kit 2.0  innuSOLV RNA Reagent	
Blood	 innuPREP Blood RNA Kit	 innuPREP AniPath DNA/RNA Kit – KFFLX
Cell culture supernatant	 innuPREP Virus RNA Kit innuPREP Virus DNA/RNA Kit  innuPREP MP Basic Kit A	 innuPREP Virus DNA/RNA Kit – IPC16 innuPREP RNA Virus Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP Virus RNA PLUS Kit – KFFLX innuPREP AniPath DNA/RNA Kit – KFFLX
Cell-free body fluids	 innuPREP Virus RNA Kit innuPREP Virus DNA/RNA Kit  innuPREP MP Basic Kit A	 innuPREP Virus DNA/RNA Kit – IPC16 innuPREP Virus RNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP RNA Virus PLUS Kit – KFFLX innuPREP AniPath DNA/RNA Kit – KFFLX
Cerebrospinal fluid	 innuPREP Virus RNA Kit innuPREP Virus DNA/RNA Kit  innuPREP MP Basic Kit A	 innuPREP Virus DNA/RNA Kit – IPC16 innuPREP Virus RNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP RNA Virus PLUS Kit – KFFLX innuPREP AniPath DNA/RNA Kit – KFFLX


















	Manual	Automated
Eukaryotic cells	 innuPREP Micro RNA Kit innuPREP DNA/RNA Mini Kit innuPREP RNA Mini Kit 2.0  innuSOLV RNA Reagent	 innuPREP RNA Kit – IPC16
FFPE/ Paraffin samples	 innuPREP FFPE total RNA Kit innuPREP Virus RNA Kit innuPREP Virus DNA/RNA Kit	
Plant material	 innuPREP Plant RNA Kit	
Saliva	 innuPREP MP Basic Kit A	
Stool samples	 innuPREP MP Basic Kit A	 innuPREP Virus DNA/RNA Kit – IPC16 innuPREP Virus RNA Kit – KFml innuPREP RNA Virus PLUS Kit – KFFLX innuPREP DNA/RNA Virus PLUS Kit – KFFLX innuPREP AniPath DNA/RNA Kit – KFFLX
Swabs	 innuPREP Virus RNA Kit innuPREP Virus DNA/RNA Kit  innuPREP MP Basic Kit A	 innuPREP Virus DNA/RNA Kit – IPC16 innuPREP Virus RNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP RNA Virus PLUS Kit – KFFLX innuPREP AniPath DNA/RNA Kit – KFFLX
Ticks	 blackPREP Tick DNA/RNA Kit	

















	Manual	Automated
Tissue/ Biopsies	 innuPREP Micro RNA Kit innuPREP DNA/RNA Mini Kit innuPREP RNA Mini Kit 2.0 innuPREP Virus RNA Kit innuPREP Virus DNA/RNA Kit  innuPREP MP Basic Kit A  innuSOLV RNA Reagent	 innuPREP RNA Kit – IPC16 innuPREP Virus RNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP RNA Virus PLUS Kit – KFFLX innuPREP AniPath DNA/RNA Kit – KFFLX
Viruses	 innuPREP Virus RNA Kit innuPREP Virus DNA/RNA Kit  innuPREP MP Basic Kit A	 innuPREP Virus DNA/RNA Kit – IPC16 innuPREP Virus RNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP RNA Virus PLUS Kit – KFFLX innuPREP AniPath DNA/RNA Kit – KFFLX
Yeast cells	 innuSOLV RNA Reagent	















Plasmid

	Manual	Automated
Bacterial suspension	 innuPREP Plamid Mini Kit 2.0	















DNA and fcDNA







	Manual	Automated
Agarose gels	 innuPREP DOUBLEpure Kit innuPREP GelExtraction Kit	
Bacteria	 innuPREP Bacteria DNA Kit innuPREP DNA/RNA Mini Kit blackPREP Food DNA I Kit  smart DNA prep (m)	 innuPREP Bacteria DNA Kit – IPC16 innuPREP AniPath DNA/RNA Kit – KFFLX  smart DNA prep (a)
Blood	 innuPREP DNA Micro Kit innuPREP Blood DNA Mini Kit innuPREP Blood DNA Midi Kit innuPREP Forensic Kit  smart Blood DNA Midi prep (m)	 innuPREP Blood DNA Mini Kit – IPC16 innuPREP Forensic DNA Kit – IPC16 innuPREP Blood DNA Kit – KFFLX innuPREP AniPath DNA/RNA Kit – KFFLX  smart Blood DNA Midi prep (a) smart Blood DNA Midi direct prep (a)
Cell culture supernatant	 innuPREP Virus DNA Kit innuPREP Virus DNA/RNA Kit  innuPREP MP Basic Kit A  PME free-circulating DNA Extraction Kit	 innuPREP Virus DNA/RNA Kit – IPC16 innuPREP Virus DNA/RNA Kit – KFml innuPREP AniPath DNA/RNA Kit – KFFLX  PME free-circulating DNA Extraction Kit – IPC16
Cerebrospinal fluid	 innuPREP Virus DNA Kit innuPREP Virus DNA/RNA Kit  innuPREP MP Basic Kit A	 innuPREP Virus DNA/RNA Kit – IPC16 innuPREP Virus DNA/RNA Kit – KFml innuPREP AniPath DNA/RNA Kit – KFFLX

	Manual	Automated
Cell-free body fluids	 innuPREP Virus DNA Kit innuPREP Virus DNA/RNA Kit  innuPREP MP Basic Kit A  PME free-circulating DNA Extraction Kit	 innuPREP Virus DNA/RNA Kit – IPC16 innuPREP Virus DNA/RNA Kit – KFml innuPREP AniPath DNA/RNA Kit – KFFLX  PME free-circulating DNA Extraction Kit – IPC16
Eukaryotic cells	 innuPREP DNA Micro Kit innuPREP DNA Mini Kit innuPREP DNA/RNA Mini Kit	 innuPREP DNA Kit – IPC16  smart DNA prep (a)
FFPE/Paraffin samples	 blackPREP FFPE DNA Kit innuPREP DNA Mini Kit innuPREP Virus DNA Kit innuPREP Virus DNA/RNA Kit	 innuPREP FFPE DNA Kit – IPC16
Food/Food after cultivation	 blackPREP Food DNA I Kit	 innuPREP Food DNA Kit – IPC16
Forensic material	 innuPREP Forensic Kit	 innuPREP Forensic DNA Kit – IPC16
Fruits	 innuPREP Plant DNA Kit	 innuPREP Plant DNA I Kit – IPC16

	Manual	Automated
Fungi (fruiting body)	 innuPREP Plant DNA Kit	 innuPREP Plant DNA I Kit – IPC16
Mycoplasma	 innuPREP DNA Mini Kit innuPREP Bacteria DNA Kit	
PCR reactions	 innuPREP DOUBLEpure Kit innuPREP PCRpure Kit	
Plant material	 innuPREP Plant DNA Kit	 innuPREP Plant DNA I Kit – IPC16
Saliva	 innuPREP Forensic Kit  innuPREP MP Basic Kit A	 innuPREP Forensic DNA Kit – IPC16
Seed	 innuPREP Plant DNA Kit	 innuPREP Plant DNA I Kit – IPC16
Soil samples	 innuSPEED Soil DNA Kit	
Stomacher samples	 blackPREP Food DNA I Kit	 smart DNA prep (a)

DNA and fcDNA

	Manual	Automated
Stool samples	 innuPREP Stool DNA Kit  innuPREP MP Basic Kit A	 innuPREP Stool DNA Kit – IPC16 innuPREP Virus DNA/RNA Kit – IPC16 innuPREP AniPath DNA/RNA Kit – KFFLX
Swabs	 blackPREP Swab DNA Kit innuPREP DNA Mini Kit innuPREP Forensic Kit innuPREP Virus DNA Kit innuPREP Virus DNA/RNA Kit  innuPREP MP Basic Kit A	 innuPREP Forensic DNA Kit – IPC16 innuPREP Virus DNA/RNA Kit – IPC16 innuPREP Virus DNA/RNA Kit – KFml innuPREP AniPath DNA/RNA Kit – KFFLX
Ticks	 blackPREP Tick DNA Kit blackPREP Tick DNA/RNA Kit	
Tissue/ Biopsies	 innuPREP DNA Micro Kit innuPREP DNA Mini Kit innuPREP Forensic Kit innuPREP Rodent Tail DNA Kit innuPREP DNA/RNA Mini Kit innuPREP Virus DNA Kit innuPREP Virus DNA/RNA Kit  innuPREP MP Basic Kit A  smart DNA prep (m)	 innuPREP DNA Kit – IPC16 innuPREP Forensic DNA Kit – IPC16 innuPREP Virus DNA/RNA Kit – KFml innuPREP AniPath DNA/RNA Kit – KFFLX  smart DNA prep (a)
Urine/ Urine sediment	 PME free-circulating DNA Extraction Kit	 PME free-circulating DNA Extraction Kit – IPC16

	Manual	Automated
Viruses	 innuPREP Virus DNA Kit innuPREP Virus DNA/RNA Kit  innuPREP MP Basic Kit A	 innuPREP Virus DNA/RNA Kit - IPC16 innuPREP AniPath DNA/RNA Kit – KFFLX
Yeast cells	 smart DNA prep (m)	 innuPREP Bacteria DNA Kit – IPC16  smart DNA prep (a)

How to Choose the Right Extraction Method?

A short technology overview

Nucleic acid extraction is not only a question of choosing the right extraction kit, it is more challenging to find the ideal technology or platform first.

All Analytik Jena extraction kits are ready-to-use and based on patented DC-Technology with all its advantages:

- Based on our own patents
- Combination of chaotropic and antichaotropic chemistry
- Flexible adaptation to different types of starting material
- Low salt and low ionic strength promote activity and the stability of enzymes

- Optimal lysis conditions: fast and powerful, which makes them mild to nucleic acids
- A perfect combination of stringent lysis and unique binding buffer system
- Less extensive washing necessary

	Spin Filter	MAG Beads	SmartExtraction	Enrichment
Brand	innuPREP blackPREP	innuPREP-IPC16 innuPREP-KFml innuPREP-KFFLX	smart prep (a) smart prep (m)	PME
Level of automation	Manual Manual with optimization to homogenization	Automated or manual solutions	Automated or manual solutions	Automated or manual solutions
Compatibility	–	InnuPure systems KingFisher systems	InnuPure C16 <i>touch</i> CyBio Felix CyBio SELMA Other 1 mL pipetting robots	InnuPure C16 <i>touch</i>
Process	Binding of nucleic acids to solid Spin Filter Membranes and processing by centrifugation	Separation of nucleic acids by magnetic particles and processing by pipetting or plungers	Binding of nucleic acids to unique Smart Modified Surfaces and processing by simple pipetting	Efficient recovery of minor DNA components e.g., free-circulating DNA, small DNA fragments or pathogen DNA
Throughput	Low throughput	Medium to high throughput	Medium to high throughput	Low throughput
Time	Ø 20 to 40 min per sample	Ø 40 to 90 min per run (16 – 96 samples)	Ø 20 to 80 min per run (8 – 96 samples)	Ø 40 to 60 min per sample



Spin Filter



Magnetic beads



Smart modified surface

Phenol/
ChlorophormPolymer Mediated
Enrichment

Prep Tubes

Headquarters

Analytik Jena AG
Konrad-Zuse-Str. 1
07745 Jena · Germany

Phone +49 3641 77 70
Fax +49 3641 77 9279
info@analytik-jena.com
www.analytik-jena.com

Pictures: Analytik Jena AG, iStockphoto ©BlackJack3D
Subjects to changes in design and scope of delivery as well as further technical development!