Analytik Jena
Produktübersicht instrumentelle Analytik

Produktkatalog instrumentelle Analytik

analytikjena
An Endress+Hauser Company

Überlegene Technologie aus Jena

Analytik Jena entwickelt und fertigt hochwertige Analysenmesstechnik, Zubehör und Softwarelösungen die allen Ansprüchen der Molekül-, optischen und Massenspektrometrie, Summenparameter und Elementaranalyse gewachsen sind.

Optische und Massenspektrometrie

- novAA® und ZEEnit Serie (LS AAS)
- contrAA® Serie (HR-CS AAS)

S.6

- Zubehöre für die AAS
- mercur – Quecksilberanalysator (AFS)
- TOPwave® – Mikrowellenaufschluss

S.8

- PlasmaQuant® PQ 9000 Serie (ICP-OES)
- PlasmaQuant® MS Serie (ICP-MS)

S.10

- SPECORD® S 600 (UV/Vis)
- SPECORD® PLUS Serie (UV/Vis)
- Vielseitige Zubehöre

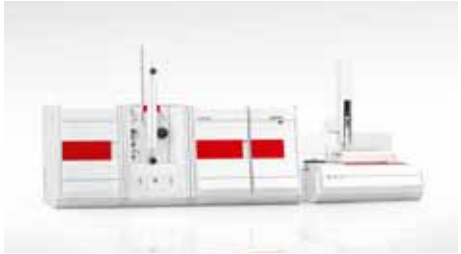
S.12

Summenparameteranalyse

- multi N/C® Serie (TOC/TN_b)
- multi X® 2500 (AOX/TOX/EOX)

S.16

- Zubehör für die TOC-, TN_b-, AOX/TOX-Analyse



Elementaranalyse

- multi EA® 4000 (C, S, Cl)
- compEAct Serie (S, N)
- multi EA® 5000 (C, N, S, Cl)

S.20

Innovation für analytische Lösungen

Analytik Jena steht für high-end Analysenmesstechnik die auf die Bedürfnisse unserer Kunden zugeschnitten ist. In unseren F&E und Produktionsstandorten deutschlandweit entwickeln und fertigen wir innovative Technologien, die mit einer einzigartigen analytischen Performance überzeugen.

Tradition und Innovationskraft

Analytik Jena ist stolz Teil einer langen Tradition der Entwicklung hochwertiger analytischer Präzisionsgeräte in Jena zu sein, die bis auf die Erfindungen von Ernst Abbe und Carl Zeiss vor mehr als 150 Jahren zurückgeht.

In den letzten 25 Jahren hat sich Analytik Jena zu einem der innovativsten Hersteller von Analysenmesstechnik entwickelt, der alle Anforderungen von Routinelaboratorien als auch anspruchsvolle Nischenanwendungen bedient.

Industrien und Anwendungsbereiche:

- Pharma
- Clinical & Forensik
- Kraftwerke & Energie
- Chemie & Polymere
- Geologie, Bergbau, Metalle
- Lebensmittel & Landwirtschaft
- Öl & Gas
- Umwelt
- Akademia

Molekül-, optische und Massenspektrometrie – moderne Technologien für verschiedenste Anwendungen

Die breite Produktpalette spektroskopischer Technologien von Analytik Jena bietet Gerätelösungen für alle applikativen Anforderungen. Zubehöre, Probengeber und ein System für den Mikrowellenaufschluss runden das Angebot ab.

Spektrometerportfolio

Moderne Technologien

Atomabsorptionsspektrometer (AAS)

novAA® | ZEEnit

novAA® 800

ZEEnit 700 P

Eine neue Generation für den gesamten Bereich der AAS

Die AAS-Serien novAA® und ZEEnit kombinieren Leistungsstärke, Vielseitigkeit, Automatisierung, Zuverlässigkeit und Robustheit.

novAA® & ZEEnit auf einen Blick:

- 8fach Lampenwechsler für maximale Automatisierung und höchsten Probendurchsatz
- Vollautomatische Gasbox und automatische Brennerhöhenverstellung
- Ein- und Zweistrahl-Optik
- Integriertes High-End Vision Tool für bestmögliche Beobachtung der Abläufe
- Vollständig automatisierte Optimierungsroutinen
- Analyse flüssiger und fester Proben

novAA® 400 P – Kompaktes AAS für die Flammen-, Hydrid- und Graphitrohrtechnik mit D2-Untergrundkorrektur
novAA® 800 – Neue Generation kompakter AAS für die Flammen-, Hydrid- und Graphitrohrtechnik mit D2-Untergrundkorrektur

Die **ZEEnit P** Serie kombiniert ein einzigartiges Graphitrohrofenkonzept mit der neuesten, leistungsstärksten Generation der Zeemaneffekt-Untergrundkorrektur mit variabler Magnetfeldstärke.

Besondere Eigenschaften:

- 2Feld-Mode – Höchste Empfindlichkeit
- 3Feld-Mode – Erweiterter linearer Arbeitsbereich
- Dynamik-Mode – Automatische Anpassung an unterschiedliche Konzentrationen von Elementen ohne Verdünnung

ZEEnit 650 P – Hochleistungsfähiges Graphitrohr-AAS mit Zeeman- und D2-Untergrundkorrektur
ZEEnit 700 P – Hochleistungsfähiges Tandem-AAS für die Flammen-, Hydrid- und Graphitrohrtechnik mit Zeeman- und D2-Untergrundkorrektur

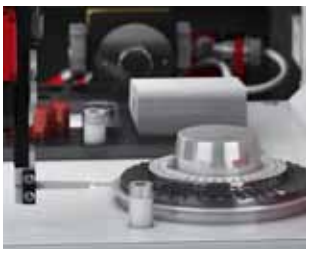
Zubehör Flammen-AAS

Der **Segmented Flow Star** (SFS) für den Fließinjektionsbetrieb vereinfacht die Analyse von Proben mit hohem Salz-, Zucker-, oder Säuregehalt. Er garantiert stabile Messbedingungen durch kontinuierliches Spülen und konstante Flammentemperaturen und ermöglicht die automatische Messung kleinster Probenmengen (µl-Bereich).

Der **„Scraper"**, ein automatisches, softwaregesteuertes Reinigungsgerät für den Lachgas-Brennerkopf, garantiert einen kontinuierlichen und reproduzierbaren Betrieb über einen langen Zeitraum hinweg.

High-Resolution Continuum Source AAS
contrAA®

contrAA® 800



contrAA® 800 F – HR-CS AAS für die Flammen- und Hydridtechnik
contrAA® 800 G – HR-CS AAS für die Graphitrohrtechnik, einschließlich solid AA® und HydrEA
contrAA® 800 D – Das kompakte HR-CS AAS-Allroundsystem für die Flammen-, Hydrid und Graphitrohrtechnik, einschließlich solid AA® und HydrEA.

contrAA® – Eine Vision wird Realität

contrAA® schließt die Lücke zwischen ICP-OES und AAS. Die Systeme der contrAA® 800-Serie, verbinden intelligentes Design mit höchster Funktionalität und überzeugender Leistung:

- Multi Element – Eine Lichtquelle für schnell-sequenzielle und simultane Multielementanalytik
- High-Resolution Optics – Störungsfreie Analyse und höchste Präzision
- HD Spectrum – Hochaufgelöste 3D-Spektrendarstellung für detaillierte spektrale Informationen
- Dynamic Mode – Erweiterter Messbereich über bis zu fünf Größenordnungen

Einfache Methodenentwicklung

Der Anwender kann die optimale Linie für die jeweilige Analyseaufgabe frei wählen. Da die Intensität der Analyselinie und der spektralen Umgebung simultan aufgezeichnet werden, sind Störungen und Interferenzen sofort sichtbar und auswertbar.

Mit nur einer Lichtquelle, der Xenonlampe, misst das Gerät alle Elemente und über den gesamten Wellenlängenbereich von 185 – 900 nm. Die patentierte Spektrometertechnologie ermöglicht einen schnellen Linienwechsel und die Messung der Elemente in optimierten Sequenzen. Die sequentielle Multielementanalytik in der AAS ist so zum Standard geworden.

Erweiterter Anwendungsbereich

Die Auswertung von Atomlinien und Molekülbanden ermöglicht die Analyse zusätzlicher Elemente, z.B. von Nichtmetallen – eine Innovation!

Einzigartige Untergrundkorrektur

Das contrAA® ist das erste AAS, das breitbandige und spektrale Untergrundeffekte trennen kann. Vollautomatische Routinen zur Untergrundkorrektur nutzen vorhandene Referenzpixel und ermöglichen eine simultane Korrektur in Echtzeit.

3D-Spektrum – Eine neue Dimension

Das 3D-Spektrum, Extinktion in Abhängigkeit von Zeit und Wellenlänge, eröffnet ungeahnte Möglichkeiten bei der Parameteroptimierung. Anwender des HR-CS AAS können jetzt den Grund von Interferenzen erkennen und diese nach Bedarf beseitigen.

Module für die AAS

Quecksilber-/Hydridsysteme | solid AA®

Hydridsystem

Probengeber für die direkte Fetstoff-AAS – solid AA®

Vielfältige Lösungen für besondere Herausforderungen

Die modularen Systeme zur Bestimmung hydridbildender Elemente und Quecksilber im Fließinjektions- und Batch-Betrieb garantieren komfortable Handhabung, Präzision und Effizienz bei der Analyse: **traditionell** mittels Atomisierung in der elektrisch beheizten **Quarzküvette** oder **zukunftsweisend** über Hydridbildung mit elektrothermischer Atomisierung im Graphitrohrofen (**HydrEA**).

- Fließinjektions-Betrieb: vollautomatischer Modus mit optimiertem Gas-Flüssig-Separator und Membrantrocknungssystem für hohen Probendurchsatz
- Batch-Betrieb: spezielles Reaktordesign für hohen Probendurchsatz, für schäumende Proben und geringe Elementkonzentrationen
- Anreicherungs-Betrieb: integrierte Goldkollektoreinheit für die Anreicherung von Quecksilber
- Modulbauweise: alle Funktionen sind erweiterbar, das System wächst gemeinsam mit Ihren Laboranforderungen

HS50 – Einfacher Batch-Betrieb, flammenbeheizte Küvette
HS55 – Batch-Betrieb, elektrisch beheizte Küvette
HS60 – Vollautomatisches System mit Fließinjektion und elektrisch beheizter Küvette

solid AA® – direkte Feststoff-AAS

Feste und pastöse Proben, wie Pulver, Cremes oder viskose Öle, können direkt im Graphitrohrofen analysiert werden. Die Zersetzung der Probenmatrix durch einen Säureaufschluss wird bei der direkten Feststoffanalyse durch das Temperaturprogramm des Graphitrohrofens ersetzt.

solid AA® auf einen Blick:

- Analyse der Originalprobe
- Weiter Messbereich – keine Verdünnung notwendig
- Analyse kleiner Probenmengen – solid AA® als Mikromethode
- Verzicht auf schädliche Reagenzien – Chemikalienabfälle werden auf ein Minimum reduziert
- Einfache Handhabung – Proben werden auf den Probenträger gegeben und direkt analysiert
- Schnelle Ergebnisse

Alle Graphitrohr-Systeme von Analytik Jena können mit der solid AA®-Technik aufgerüstet werden.

SSA 6z – Manueller Feststoffprobengeber
SSA 600 – Vollautomatischer Feststoffprobengeber mit integrierter Mikrowaage
Flüssig-Dosiereinheit – Erweiterungsset für automatische Flüssigdosierung am SSA 600

Quecksilber-Analysator
mercur

mercur

Quecksilberanalytik mit höchster Analysesicherheit
Die Atomfluoreszenzspektrometrie (AFS) ermöglicht Spurenanalytik bis in den ng/L-Bereich. Die AAS hingegen bietet Robustheit bei komplexen Probenmatrices.
Die Gerätelösungen der mercur-Serie verbinden die Vorteile beider Techniken für das gesamte Spektrum der Quecksilberanalytik. Verschiedene Konfigurationen ermöglichen die Anpassung an spezifische Applikationen und sichern Konformität mit EPA und EN/ISO.

mercur auf einen Blick:
- Hochautomatisiert und schnell – Fließinjektion mit oder ohne Autosampler und einzigartige FBR-Routine
- Sicher – Bubble-Sensor, speziell optimierte Trockenmembran und Kaskadenanreicherung
- Effektiv – intelligente Gas-Flüssig-Steuerung für minimalen Reagenzienverbrauch und kurze Messzeiten
- Zuverlässig – Self Check System (SCS)

mercur und mercur PLUS* – Kaltdampftechnik mit Atomfluoreszenz (mit oder ohne Anreicherung)
mercur AA und mercur AA PLUS – Kaltdampftechnik mit Atomabsorption (mit oder ohne Anreicherung)
mercur DUO und mercur DUO PLUS* – Tandem-Quecksilberanalysator basierend auf Atomfluoreszenz und Atomabsorption (mit oder ohne Anreicherung)
* Zwei Goldkollektoren für einfache oder Kaskadenanreicherung.

Mikrowellenaufschluss
TOPwave®

TOPwave®

TOPwave® ermöglicht Ihnen eine Vielzahl von Applikationen. Das patentierte Sensorkonzept und das intelligente Design ermöglichen Reaktionskontrolle und Betriebssicherheit auf höchstem Niveau.
Kurze Zykluszeiten und große Kapazitäten sorgen für einen hohen Probendurchsatz und somit eine effektive Probenvorbereitung.
Ein weiterer entscheidender Aspekt ist die Sicherheit. Die Arbeit unter außergewöhnlichen Bedingungen erfordert ein absolut verlässliches System und einen erfahrenen Partner.

TOPwave® auf einen Blick:
- Hoher Probendurchsatz
- Minimale Anzahl an Verbrauchsmaterialien
- Sensorkonzept für die Dokumentation der Aufschlussparameter jeder Probe dank drahtloser optischer Temperaturkontrolle mit RTM, drahtloser optischer Druckkontrolle mit RPM und SMART-Reaktionskontrolle
- Self Check System (SCS)

Aufschlussgefäße für einfache Anwendung ohne Werkzeuge

High-Resolution Array ICP-OES

PlasmaQuant® PQ 9000 / PQ 9000 Elite

PlasmaQuant® PQ 9000 Elite

Beeindruckende analytische Performance

Das einzigartige Auflösungsvermögen, die unerreichte Empfindlichkeit und außergewöhnliche Matrixtoleranz des **PlasmaQuant® PQ 9000 Elite** ermöglichen niedrigste Nachweisgrenzen und höchsten Bedienkomfort bei anspruchsvollen Anwendungen. Dank seiner hohen Präzision ist es DAS System für Labore im Bereich der Materialanalyse hochentwickelter Werkstoffe, in der Forschung sowie der Qualitätskontrolle, die mit komplexen Matrices, wie refraktären-, eisenhaltigen- und hochreinen Metallen, Seltenen Erden oder petrochemischen Proben konfrontiert sind.

Mit einem Fokus auf breite Anwendbarkeit, einfache Bedienung und Wirtschaftlichkeit ist das **PlasmaQuant® PQ 9000** das Multitalent für die Routineanalytik. Dank seiner hervorragenden Plasmaleistung, exzellenter Nachweisgrenzen und hoher Genauigkeit erfüllt es alle Anforderungen der Agrar-, Lebensmittel- und Umweltanalytik und bietet hohe Produktivität bei außergewöhnlichem Bedienkomfort.

PlasmaQuant® PQ 9000 – kostengünstige Analyse ohne Kompromisse
PlasmaQuant® PQ 9000 Elite – die Nummer Eins in spektraler Auflösung und Empfindlichkeit

PlasmaQuant® PQ 9000 / PQ 9000 Elite auf einen Blick:
Mit innovativen Komponenten setzt die PlasmaQuant® PQ 9000-Serie neue Standards in der analytischen Performance:

High-Resolution Optics*
- Doppel-Monochromator-Echelle-Optik für Interferenzfreie Analytik
- HR-CCD-Detektion mit außergewöhnlicher Wellenlängengenauigkeit

V Shuttle Torch
- Aufrechte Plasma-Torch im Shuttle-Design für einen sorgenfreien Betrieb
- Plug-and-Play-Installation mit Präzisions-Auto-Alignment

Dual View PLUS
- 2+2 Plasmabeobachtungsrichtungen für einen erweiterten Arbeitsbereich
- Argon-neutrale Counter-Gas-Technologie für einzigartige Empfindlichkeit

High-Frequency Generator
- Unerreichte Plasmaleistung für die direkte Analyse extremer Matrizes
- Kurze Aufwärmzeiten für hohe Methodenflexibilität und niedrige Betriebskosten

*Nur im PlasmaQuant® PQ 9000 Elite verfügbar

High-Performance ICP-MS
PlasmaQuant® MS / MS Elite

PlasmaQuant® MS Elite

Leistungsstark mit patentierter Technologie
Das PlasmaQuant® MS ist das leistungsstärkste Quadrupol-ICP-MS weltweit mit einer unübertroffenen Empfindlichkeit von 1,5 Mio. Counts/Sekunde/ppb.

Das **PlasmaQuant® MS** ist optimiert für Routineanwendungen in der Umweltanalytik, wie Wasser, Abfall, Böden und Sedimente, Lebensmittel und Agrarwirtschaft, Chemie und Petrochemie ebenso wie für die Qualitätskontrolle in der Halbleiterindustrie, bei der robustes Plasma zur Handhabung komplexer Probenmatrizes von größter Bedeutung ist.

Das **PlasmaQuant® MS Elite** wurde für Forschungszwecke mit maximaler Empfindlichkeit bei möglichst niedrigen Nachweisgrenzen entwickelt. Es misst die kleinsten Nanopartikel und erkennt Spurenelemente aus Medikamenten unterhalb des ppt-Bereichs. Das Elite ist zudem der perfekte Partner für die Laser-Ablationsanalyse, Isotopen-Verhältnismessungen und Chromatographietechniken zur Trennung von Analytspezies.

PlasmaQuant® MS – für die Routineanalyse, mit iCRC und besonders niedrigem Argonverbrauch
PlasmaQuant® MS Elite – für Forschungszwecke, mit Branchenführender Empfindlichkeit und niedrigstem Argonverbrauch

PlasmaQuant® auf einen Blick:
Die Serie bietet unübertroffene Nachweisgrenzen für über 75 Elemente. Schnelle, genaue und präzise Analyse aller Probentypen vom Ultraspurenbereich bis hin zu hohen Konzentrationen in einer einzigen, interferenzfreien Messung.

Eco Plasma
- Robuste Plasmaleistung
- Argonverbrauch auf die Hälfte reduziert

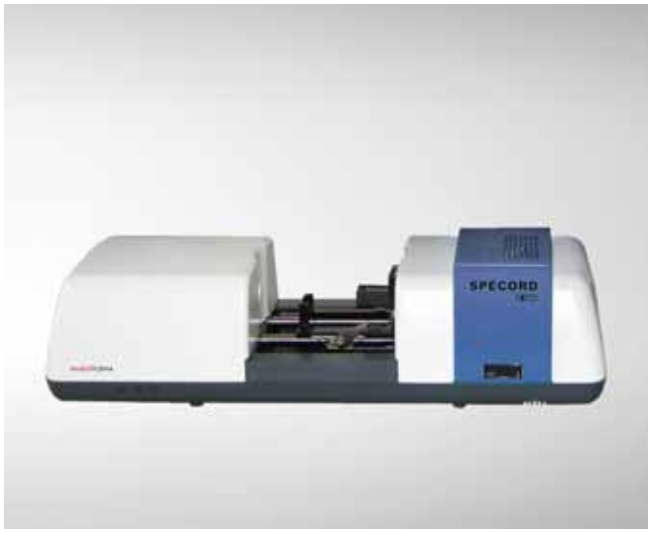
iCRC – integrated Collision Reaction Cell
- Schnelle, einfache, interferenzfreie Analyse
- Mehr Leistung durch neue BOOST-Technologie

ReflexION
- Reflektierender Ionenspiegel mit 3D-Ionen-Fokus
- Höchste Empfindlichkeit im gesamten Massenbereich

HD Quadrupol
- Echter 3MHz Quadrupol mit ausgezeichneter Massentrennung
- Sehr schnelle und präzise Scan-Raten

ADD^{10} – All-Digital Detection System
- Einmalige voll-digitale Signaldetektion
- Linear dynamischer Bereich von 10 Größenordnungen

UV/Vis Spektralphotometer
SPECORD®



SPECORD® S 600

SPECORD® PLUS

Neue Maßstäbe in der UV/Vis-Spektralphotometrie

Die SPECORD®-Familie deckt die gesamte Bandbreite von leistungsfähigen Spektralphotometern mit Split-Beam-Technologie über Zweistrahlspektralphotometer mit Cooled Double Detection bis hin zu Hochleistungs-Diodenarraysystemen für simultane Hochgeschwindigkeits-messungen ab. Die Geräte arbeiten im Spektralbereich von 190 bis 1100 nm, bzw. 185 bis 1200 nm für SPECORD® 210 PLUS. Eine vielseitige Software, spezielle Softwarepakete und eine breite Zubehörpalette garantieren kinderleichte Bedienung flexibles Arbeiten und hohe Effiziens in unterschiedlichsten Anwendungsbereichen.

SPECORD® S 600 – Diodenarray-System

Das SPECORD® S 600 kombiniert die im Labor geforderte Präzision und komfortable Handhabung mit Schnelligkeit, Zuverlässigkeit und herausragender optischer Leistung.

SPECORD® S 600 auf einen Blick:

- Hochpräzises Diodenarraysystem
- Schnelle Messung eines kompletten Spektrums in 12 ms
- Selbstjustierung der photometrischen Linearität, automatische Streulichtkorrektur, offener Probenraum

SPECORD® S 600 – Diodenarray-Spektralphotometer für den UV bis Vis-Bereich (190–1100 nm)

SPECORD® PLUS

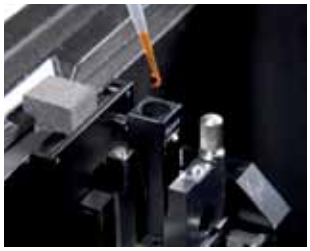
Routineanalyse oder Spezialanwendungen – mit den Zweistrahlphotometern der Serie SPECORD® PLUS sind Sie auf alle Anforderungen bestens vorbereitet.

Die SPECORD® PLUS-Serie auf einen Blick:

- Automatische Zubehörerkennung
- Großer, gut erreichbarer Probenraum
- Umfassende Methodensammlung
- „Device Check"-Software und Self Check System (SCS)

SPECORD® 50 PLUS – Zweistrahlspektralphotometer mit Split-Beam-Technologie
SPECORD® 200 PLUS – Zweistrahlspektralphotometer mit fester spektraler Spaltbreite
SPECORD® 210 PLUS – Zweistrahlspektralphotometer mit 5fach variablem Spalt
SPECORD® 250 PLUS – Zweistrahlspektralphotometer mit 5fach variablem Spalt und Doppelmonochromator

UV/Vis-Spektralphotometer
Umfangreiche Zubehörpalette

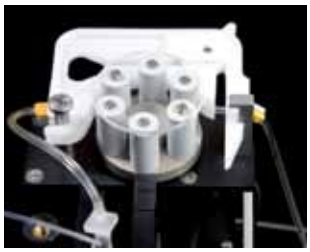


Justierbarer Küvettenhalter mit Ultra-Mikroküvette für kleinste Probenmengen

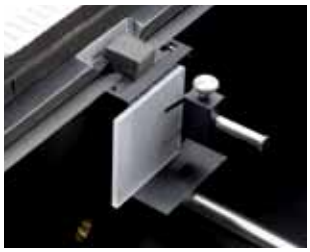
2x8fach-Küvettenwechsler

Reflexionsmesseinsatz mit variablem Winkel

Autosampler für besonders hohen Probendurchsatz



Sipper-System



Feststoffprobenhalter

Integrationskugel

SPECORD® PLUS Dissolution ist voll in die Systemsoftware des Dissolutionanbieters integriert

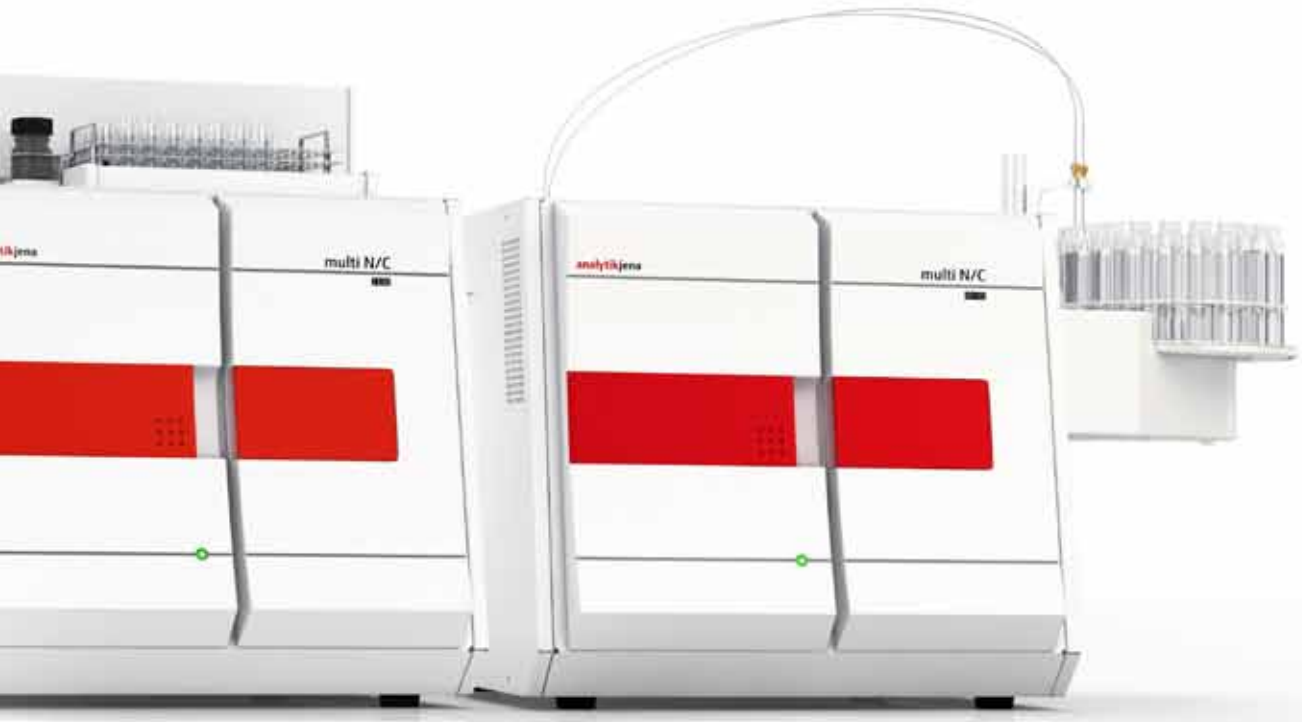
Eine umfangreiche Basissoftware und viele spezielle Tools stellen die perfekte Lösung für unterschiedlichste Anwendungen sicher.

Wasser- und Umweltanalytik leicht gemacht – mit cleveren Lösungen von Analytik Jena

Ob in der Untersuchung von Trink- und Abwässern, pharmazeutisch genutzten Wässern bzw. Reinigungsvalidierung, Oberflächenwässern bis hin zur Feststoffanalyse, z.B. TOC in Böden oder Abfällen, optimierte Lösungen von Analytik Jena machen Summenparameteranalytik einfach und effizient.

Summenparameteranalyse

Clevere Lösungen



TOC-, TN_b-Analysatoren
multi N/C®-Serie

multi N/C® 3100

multi N/C® UV HS

multi N/C® — High Performance TOC-Analysatoren!
Mit den Geräten der multi N/C®-Serie lassen sich die Parameter TOC, NPOC, POC, TC, TIC und TN_b einfach, schnell und ohne Umbau in wässrigen Proben messen. Separate Feststoffmodule, wie Double Furnace oder HT 1300, erlauben den Aufschluss fester Proben bei bis zu 1300 °C im robusten Keramikarbeitsrohr.

Ein abgestuftes Probengeberkonzept bietet mit integrierter Probenhomogenisierung, automatischem Ansäuern und Spülen einen hohen Automatisierungsgrad für verschiedenste Anforderungen bei der TOC-Analyse. Zeitoptimierte Prozesse, wie paralleles Analysieren und Ausblasen im NPOC-Modus, erhöhen den Probendurchsatz.

multi N/C® 2100 – Platzsparender TOC/TN_b-Analysator für die Umweltanalytik (Direktinjektion)
multi N/C® 3100 – Allrounder für alle TOC-Anwendungen mit hohem Probendurchsatz
multi N/C® UV HS – TOC-System mit Oxidationshilfsmittel (Peroxodisulfat) und UV-Strahlungsquelle zur Probenoxidation, bewährt bei komplizierten Matrices
multi N/C® pharma – für pharmazeutische Anwendungen, Probenaufschluss mittels katalytischer Hochtemperaturverbrennung bei bis zu 950 °C oder nasschemischer Oxidation im High Power UV-Reaktor

multi N/C® auf einen Blick:
- Weiter Messbereich – auch ohne Verdünnung der Probe: präzise Bestimmung dank hochwertigem Focus Radiation NDIR Detector® für TOC, Chemolumineszenzdetektor (CLD) oder Solid-State Chemodetektor (ChD) für TN_b
- VITA® Flow Management System: für stabile Geräteleistung und hoch reproduzierbare Analyseresultate
- Easy Cal: einfache Kalibrierung mit nur einem Standard für verschiedenste Anwendungen und hohe Langzeitstabilität
- Auto-Protection: effektive Messgasreinigung und Überwachung schützen hochwertige Systemkomponenten
- Zuverlässige Oxidation: Hochtemperaturverbrennung (bis zu 950 °C) oder High Power UV-Reaktor
- Variable Injektionstechniken: ventilfreie Direktinjektion oder Fließinjektion
- Geeignet zur simultanen TN_b-Bestimmung
- Double-Furnace-Technologie — ideale Kombination für Wasser- und Feststoffproben mit nur einem Ofen
- Self Check System (SCS) – mit automatischer Leckprüfung
- Konform mit den gültigen nationalen sowie internationalen Normen wie ISO, EN, DIN, EPA, ASTM, FDA und den Pharmakopöen

TOC-, TN_b-, AOX/TOX-Analysatoren
Hoher Probendurchsatz

Probengeber für 10 Proben

Probengeber für 52/72/100/146 Proben

HT 1300 – Zufuhr fester Proben

Probengeber für 60/112 Proben

Probenvorbereitungssystem nach Säulenmethode für bis zu 6 Proben simultan

Double-Furnace-Technologie: Probengabe zur Bestimmung von TOC in Feststoffen

AOX/TOX-Analysatoren
multi X® 2500

Ob POX-Bestimmung, schnelle AOX-Routineanalytik im vertikalen Modus oder sichere Bestimmung kleinster EOX-Spurengehalte im horizontalen Betrieb, die Double-Furnace-Technologie des multi X® 2500 ermöglicht die freie Wahl des besten Verbrennungsmodus für jede Applikation.

Die intelligente Software multiWin®, der schnelle Wechsel zwischen Säulen- und Schüttelmethode sowie die nutzerfreundliche Konstruktion gewährleisten außerordentlichen Bedienkomfort. Module zur Probenvorbereitung nach Schüttel- oder Säulen-Methode sowie verschiedene Probengabesysteme sichern Flexibilität und garantieren effizientes Arbeiten.

multi X® 2500 mit autoX 36

Elementaranalyse – in einer neuen Qualität

Innovative Technologien machen die C/N/S/Cl-Elementar-analysatoren von Analytik Jena unvergleichlich flexibel, zuverlässig und einfach zu bedienen. Ob feste, flüssige oder gasförmige Proben: Mit der multi EA®-Serie bewältigen Sie alle Anforderungen mühelos.

Elementaranalyse

Innovative Technologien

C, S, Cl – Feststoffe
multi EA® 4000

multi EA® 4000

Einfache und flexible C-, S-, Cl-Analytik in Feststoffen
Der multi EA® 4000 überzeugt durch seine einfache Bedienung, hohe Stabilität und Präzision in der Geräteperformance. Er ermöglicht eine einzigartige Kombination der bestimmbaren Elemente und Parameter TS, TC, TX, TOC, TIC, EC und AOC und ist daher in der Abfallanalytik unschlagbar. Die modulare Bauweise gestattet die Erweiterung von der Einelement- zur vollautomatischen Multielementanalyse.

multi EA® 4000 auf einen Blick:
- Einfache Bedienung und Flexibilität
- Hohe Präzision und Zuverlässigkeit
- Minimale Betriebskosten und geringer Wartungsaufwand

Vollautomatische TOC-Bestimmung – TIC-Feststoffmodul
Das TIC-Feststoffmodul „automatisch" ermöglicht die automatische Bestimmung des gesamten anorganischen Kohlenstoffs (TIC) in Feststoffproben. Mittels Differenz- oder Direktverfahren kann so auch der gesamte organische Kohlenstoff (TOC) automatisch bestimmt werden. Eine weitere Vorbehandlung der Probe, wie z.B. manuelles Ansäuern, ist nicht nötig.

N, S – Flüssigkeiten/Gase
compEAct N / compEAct S und S^{MPO}

compEAct

Effiziente TS- und TN-Bestimmung in Flüssigkeiten, Gasen und LPGs auf kleinstem Raum
Die Stand-alone-Geräte der compEAct-Serie kombinieren effiziente, katalysatorfreie Hochtemperaturverbrennung mit hochempfindlicher HiPerSens®-Detektion und bieten damit hervorragende analytische Leistungsfähigkeit und Anwendungsflexibilität bei hoher Bedienfreundlichkeit.

- EAsy Fit – Intelligentes Design für effizientes Arbeiten auf kleinstem Raum
- EAsy Touch – Integrierte Systemsteuerung mit intuitiver Touch-Bedienung
- EAsy Protect – Optimaler Schutz durch automatische Überwachung und Optimierung aller Prozessparameter
- HiPerSens® Detektion – Weitester Messbereich ohne Probenvorbehandlung für einzigartige Anwendungsvielfalt

compEAct N – Elementaranalysator für die Stickstoffbestimmung (TN)
compEAct S – Elementaranalysator für die Schwefelbestimmung (TS)
compEAct S^{MPO} – Elementaranalysator für die störungsfreie Schwefelbestimmung (TS) in Kraftstoffen und anderen Raffinerieprodukten

C, N, S, Cl – in allen Probentypen
multi EA® 5000

multi EA® 5000 mit Multi-Matrix-Probengeber und GSS/LPG-Kombimodul

C-, N-, S-, Cl-Spurenanalytik in gasförmigen, festen und flüssigen Proben

Der multi EA® 5000 ist äußerst vielseitig und für verschiedenste Anwendungsfelder geeignet. Er ermöglicht nicht nur die Bestimmung von C, N, S und Cl, sondern auch von TOC, EOX und AOX/TOX. Die weltweit einzigartige Double-Furnace-Technologie erlaubt die schnelle, optimale Adaption an die jeweilige Probenmatrix und den Analysestandard. Dank seinem modularen Prinzip lässt sich der multi EA® 5000 jederzeit individuellen Bedürfnissen und wachsenden Anforderungen anpassen.

Zeitsparender Multi-Matrix-Probengeber für vertikale und horizontale Anwendungen, flüssige und feste Proben

multi EA® 5000 auf einen Blick:

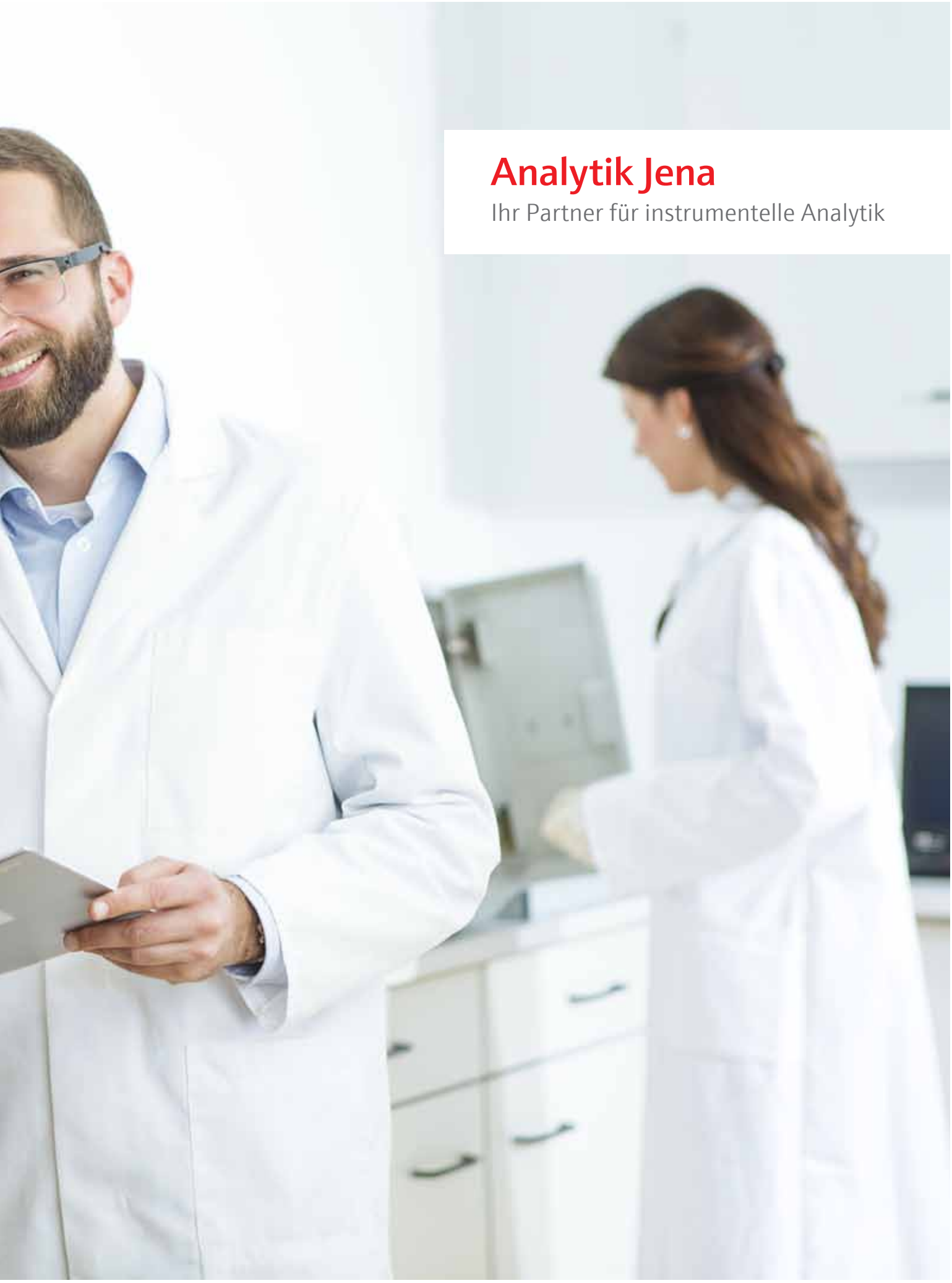
- Vielfältige Anwendung, flüssige, pastöse, feste, gasförmige und LPG-Proben
- Multielement-, C, N, S und Cl sowie TOC, EOX, AOX/TOX und EC/OC Analyse
- Erweiterter Messbereich vom ppb- bis in den Prozent-Bereich
- Voreingestellte Standardmethoden
- Normkonformität, z.B. mit ASTM, EPA, DIN, ISO, EN etc.
- Flammensensortechnologie mit Selbstlern-Funktion für matrixoptimierten Probenaufschluss
- Double-Furnace-Technologie ermöglicht die vertikale und horizontale Verbrennung in nur einem Gerät
- Flow Management System für stabile Geräteperformance und genaue Analyseresultate
- Multi-Purpose-Verbrennungsrohr für alle Standardanwendungen
- Multi-Matrix-Probengeber, für die vollautomatische Bestimmung von festen und flüssigen Proben im senkrechten oder waagerechten Betrieb
- Applikationsoptimierte Probengabesysteme für die sichere und verlässliche Analyse von unter Druck stehenden und nicht unter Druck stehenden Gasen und LPG-Proben
- Self Check System (SCS)

Allumfassender Support

Ein globales Netzwerk von Produkt-, Anwendungs- und Service-Spezialisten arbeitet Hand in Hand, um Sie bei der Erfüllung Ihrer täglichen Anforderungen zu unterstützen.

Wir helfen Ihnen mit:

- Der Auswahl der für Ihre Anwendung optimalen Technologie und Gerätekonfiguration
- Der auf Ihre Anforderungen zugeschnittenen Einrichtung von Geräten, Zubehören und Methoden
- Kontinuierlicher Unterstützung bei Ihren Aufgaben, Serviceleistungen und Schulungen rund um die Technik und deren Anwendung



Analytik Jena

Ihr Partner für instrumentelle Analytik

Hauptsitz

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Förster & Borries GmbH & Co. KG

analytikjena
An Endress+Hauser Company

Analytik Jena
Product Overview Life Science

Product Overview Life Science

analytikjena
An Endress+Hauser Company

We Support you Through the Complete Process of Lab Work

We focus on products that guarantee high quality and reproducibility of your daily laboratory results.

Homogenization

p.6

- SpeedMill PLUS
- Kits and Lysis Tubes for Homogenizers

Manual or Automated Nucleic Acid Isolation

p.7

- DC-Technology®
- Shakers and Thermal Block
- Magnetic Particle Based Separation
- SmartExtraction
- InnuPure® C16 *touch*
- Enabling Technologies

UV/Vis Spectrophotometry

p.11

- ScanDrop²

Liquid Handling and Automation

p.12

- GeneTheatre and CyBio® SELMA
- Plug and Play - Bench-Top Automation
- Full Modular Automation for HTS and uHTS

PCR, Detection and Accessories

p.18

UVP PCR Cabinets and Workstations

Thermal Cycler und Real-Time Thermal Cycler

- SpeedCycler² und FlexCycler²
- Biometra Thermal Cyclers
- qTOWER³ Product Family

Reagents and Accessories

- Target-specific Assays
- Optimized Reagents
- Ideal Consumables

Electrophoresis and BioImaging

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- Electrophoresis, Blotting, Power Supplies
- Easy-to-Use Imaging Systems

Biotechnological Competence from Analytik Jena

Life Science is all about understanding the structures and behavior of living organisms. For Analytik Jena, it is also about understanding the needs of researchers all around the world – and coming up with innovative solutions for a rapidly growing market.

The Life Science product area showcases Analytik Jena AG's biotechnological competence. The Company offers its customers one-stop shopping for all the instruments and consumables they need to obtain fast and reliable results from a sample. The product portfolio encompasses over 500 reagents and kits for all sorts of experiments, including nucleic acid isolation, PCR, and pathogen analyses.

Its more than 150 patents are testament to the Company's innovative potential – the novel DC-Technology® for efficient nucleic acid isolation being just one example.

Bundling Expertise Under One Roof

Analytik Jena is dedicated to providing its customers with powerful systems throughout every phase of analysis. Its range of products includes DNA isolation, robotics, standard and real-time PCR instruments, a variety of detection methods, and molecular diagnostic kits for food, clinical and diagnostic tests. For those special requirements, we offer customized solutions, or we adapt our products exactly to your needs. A number of instruments are defining new standards in their fields and are enjoying considerable prestige among users worldwide.

Product Overview

The Life Science portfolio of Analytik Jena AG includes a wide range of products for automated and overall solutions for molecular biology.

Sample preparation

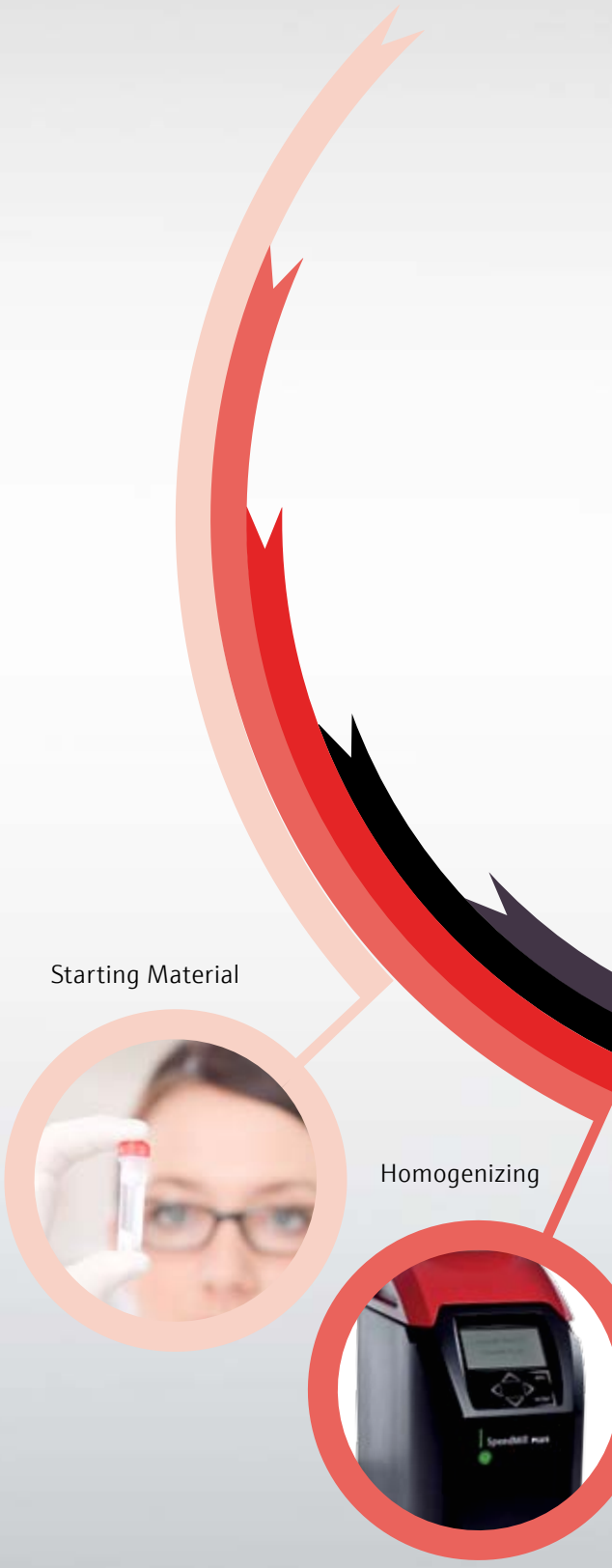
- Innovative solutions for manual and automated nucleic acid extraction
- Patented chemistry and unique technologies
- Powerful thermal shaking and homogenization
- Nano-volume spectral photometer

Liquid handling and easy PCR setup

- Clean environment for opimal PCR and qPCR preparation
- Flexible pipetting robots meet the need of each individual application
- Perfect solutions from low to high throughput

Reliable detection

- More then 30 years experience in PCR thermal cycling
- Patented real-time PCR technology with 10 years long-term warranty
- Modern gel documentation and chemiluminescence
- Full product range with well aligned reagents



All From One Hand

Biotechnological Competence from Analytik Jena

Our products are focused to offer highest quality and reliability of laboratory results. This will surely simplify daily work and speed up time-to-result processes.

Electrophoresis and BioImaging

Real-Time PCR and Target-specific Assays

PCR Devices, Reagents and Consumables

Liquid Handling and Automation

UV/Vis Spectrophotometry

Manual or Automated Nucleic Acid Isolation

Powerful and High Efficient Homogenizer
SpeedMill PLUS

- Complete and reproducible homogenization
- Efficient sample cooling during the whole preparation
- Touch control panel and large display provide considerable operating convenience
- Pre-programmed protocols or user-defined programming with freely selectable parameters
- Compact construction and comparatively quiet operation
- Can easily be operated continuously
- System is easy to upgrade, thanks to the wide product range of Lysis Tubes

The SpeedMill PLUS is the perfect homogenizer for a wide variety of starting materials. Through a patented process, this homogenizer avoids the substantial sample warming that occurs with other homogenizers, allowing the instrument to be operated continuously. The SpeedMill PLUS uses a unique sample holder for efficient sample cooling at different temperatures, which are freely selectable due to the storage down to as low as -80 °C. This makes handling of liquid nitrogen or dry ice a thing of the past. Additionally SpeedMill PLUS convinces by its intuitive handling based on modern touch sensors and the extra-large display. Users can program and save linear or cyclic protocols. SpeedMill PLUS is a small, smart tabletop device for fast preparation of up to 20 samples simultaneously.

Lysis Tubes for Homogenizers

All innuSPEED Lysis Tubes have been optimized to process samples using homogenizers (e.g., SpeedMill PLUS or SpeedMill P12). This means the tubes are designed to allow for the extremely rapid, efficient mechanical disruption of a range of starting materials (e.g., plants, tissues, cells, fungal spores, and yeast).

These Lysis Tubes are all 0.5 or 2.0 ml vessels with a screwed cap. They include beads, which are available in different sizes, grades of hardness and materials.
Generally, it is essential the smaller the sample, the smaller the bead should be.

- Optimal for mechanical disruption of different types of starting materials
- Flexible Lysis Tubes due to variable material and size of beads (e.g. glass, ceramic, circonia, steel...)
- Fast and efficient preparation of resistant samples for isolation of nucleic acids or proteins
- Ideal for use with the SpeedMill or other commercially available homogenizers

It's the Chemistry

DC-Technology® for Efficient Nucleic Acid Isolation

Faster. More efficient. Better.
With its patented Dual-Chemistry-(DC-) Technology®, Analytik Jena offers a novel platform for isolation and purification of nucleic acids. This makes kits from Analytik Jena stand out from competitors' products in a key way – they've just got better chemistry!

At the heart of DC-Technology® is the ability to bind DNA extremely efficiently to a solid phase without needing a high salt concentration. Instead, the technology uses a combination of chaotropic and nonchaotropic salts with low ionic strength. This enables the development of optimized lysis and new binding buffers.

Nothing will change for users when it comes to hardware and work organization. The routines stay the same while the quality and quantity of isolated nucleic acids are optimized.

Analytik Jena offers a wide range of purification and isolation kits for nucleic acids that covers most starting materials. The isolation procedures efficiently bind nucleic acids to mini Spin Filters or to magnetic particles, as well as to unique Smart Modified Surfaces. All methods have been optimized for a number of various starting materials with different amounts or volumes. After the elution of DNA and RNA, you'll have the ideal basis for further downstream applications.

- Products for in-vitro diagnostics
- Genomic and plasmid DNA
- Total and micro RNA
- Viral and bacterial nucleic acids
- Cleanup products for PCR reactions and agarose gels
- Forensic applications
- Custom made products

Mixers, Thermal Mixers and Thermal Block

BioShake, TS1, TSC and TB2

BioShake XP, BioShake iQ, ThermoShaker TSC, ThermoShaker TS1 and Thermoblock TB2

Thermal mixers and block thermostats belong to the basic equipment of most laboratories. Established thermal mixers are models TS1 (heating up 100 °C) and TSC (as TS1 plus cooling till ambient minus 15 °C). They are suitable for sample volumes between 100 µl up to 2 ml. Users looking for mixing of small and smallest volumes of samples find the ideal solution in the BioShake series. Mixing frequencies of up to 3000 rpm are reached. The BioShake mixers convince with an outstanding smooth running behavior by a specific anti-vibration technology and 3D-Shake-Control. The Thermoblock TB2 is a reliable thermostat for incubation of samples in different tube sizes up to 130 °C.

- Choice of models for incubation, shaking and cooling of samples
- Fast shaking and effective mixing of smallest sample volumes up to 3,000 rpm
- For microplates, PCR plates, deep well plates, tubes and glass vials
- Customized adapters for BioShake available on request
- Anti-Vibration-Technology: outstanding smooth running conditions without vibration and noise

Kits for Automated Nucleic Acid Isolation
Magnetic Particle Based Separation

Analytik Jena offers a variety of different nucleic acid extraction kits for the InnuPure® systems and the King Fisher® devices. These kits guarantee excellent results with high purity and yield thanks to the tried-and-true method of separation nucleic acids by binding them to magnetic particles. This ensures a final product that is free of proteins, nucleases or other contaminants and can be used immediately for subsequent applications. Both instruments save time significantly and require only the absolute minimum of manual interventions. The automated extraction systems operate all pipetting and mixing steps, including those that take place during the routine.

- Optimized for magnetic particle–based isolation of nucleic acids
- Includes all necessary reagents and plasticware
- Requires minimal hands-on time

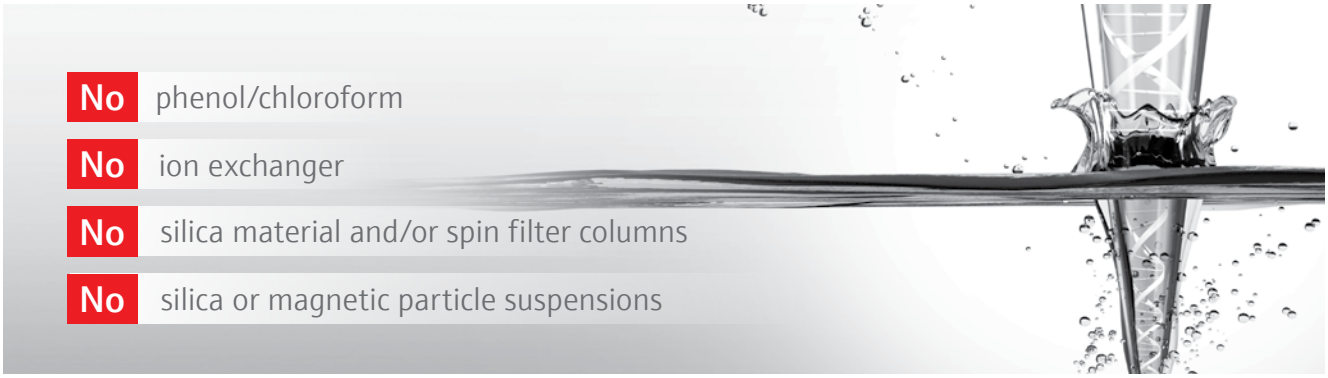
We Change the Way to Prep
SmartExtraction

SmartExtraction simplifies and speeds up the entire nucleic acid isolation workflow while partaking in the trend of process automation. In order to maximize users' choices when it comes to selecting the best tool to meet their needs, the SmartExtraction concept is not tied to any single platform. It can be used on all Analytik Jena pipetting systems (e.g., InnuPure® C16 & C96, CyBio® SELMA, GeneTheatre, CyBio® FeliX). It can also be adapted to any liquid handling system (that has 1 ml pipetting heads). The unique SmartExtraction technology does not only achieve excellent results on automated platforms.

It also simplifies the manual extraction of genomic DNA from various starting materials - requiring less equipment than needed for conventional solutions. SmartExtraction is superior to other technologies in terms of yield, DNA quality and efficiency criteria, as well. In many applications, the technology achieves the following:

- Optimal yields of high-molecular weight DNA
- An enormous reduction in preparation time
- The easy adaptation to 1 ml liquid handling platforms

This is more than optimization. It's a quantum leap.



The New Standard in Automated Extraction

InnuPure® C16 *touch*

InnuPure® C16 *touch*

InnuPure® C16 *touch* combines highly precise liquid handling with automated extraction. Thanks to its walk-away principle, all you have to do is load the samples. After initial start-up, the entire process is fully automated. Ready-to-use Reagent Strips and/or Plates make pipetting errors a thing of the past, while 1 ml pipette tips with aerosol filters prevent contamination of the dispensing unit and samples.
The nucleic acids to be isolated are adsorbed onto magnetic particles whose surfaces have been specially adapted for this purpose. Additionally, the InnuPure® system can be used with Analytik Jena's novel SmartExtraction technology, which is based on Smart Modified Surfaces. The extraction chemistry has been optimized for these applications, allowing users to isolate high yields of extremely pure nucleic acids

- Offers fully automated nucleic acid extraction processes
- Works in combination with magnetic particle separation and unique Smart Modified Surfaces (SmartExtraction)
- Flexible for varying starting materials and volumes
- Features preprogrammed extraction protocols
- Automatic transfer of eluates into separate tubes
- Ensures reliability and efficiency without cross-contamination
- Offers optional UV lamp for easy decontamination
- Features compact design that fits any lab bench
- Ready-to-use purification kits for easy handling
- Extraction of high quality nucleic acids
- Prefilled, sealed reagent plastic requiring minimum hands-on time
- Uses optimized process due to a heated position
- Adjustable elution volumes

InnuPure® C16 *touch*	
Tip volume	Up to 1000 µl
Number of samples	Up to sixteen samples simultaneously and single sample handling
Reagents	Pre-filled Reagent Plates or Strips **Magnetic particle based:** pierced by device **SmartExtraction based:** pierced by using a piercing tool
Plastic transfer	Sample Tray is moved automatically
Device operation	Easy and convenient to use, thanks to 10" tablet PC (Windows 8.1)

Enrichment and Epigenetics
Enabling Technologies

The enrichment and epigenetics product line features a number of fascinating, unique technologies that make new fields of application possibly. Intelligent, easy-to-use kits offer convenient handling with minimum time expenditure and ideal performance. Enrichment routines for low concentrated nucleic acids are available as well as optimized products for bisulfite conversion.

Bisulfite Conversion
innuCONVERT Kits

The innuCONVERT Bisulfite product family allows users to completely convert non-methylated cytosine to uracil in just a few hours. Thereby DNA sample denaturation and bisulfite treatment are combined in the same reaction vessel. The kits contain all necessary reagents and consumables for isolating DNA from a variety of sample materials and for the conversion of cytosine to uracil in genomic DNA.

- Complete conversion of unmethylated cytosine to uracil in just 45 min
- Liquid reagents: Simply storage at room temperature
- Denaturation and conversion reaction combined in a single reaction vessel
- Applicable to a wide variety of sample types

Enrichment
PME – Polymer Mediated Enrichment

Targeting free-circulating DNA or DNA in a food quality control situation (e.g., halal and vegan testing) are challenging tasks 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 acids in a large volume of up to 10 ml of starting material. The polymer/DNA complex is then collected through centrifugation and DNA is isolated using either spin filters or magnetic particles, depending on if the setup is manual or automated.

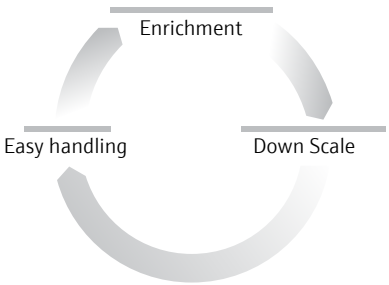
- Enriches and extracts free-circulating DNA or small amounts of DNA, e.g. for vegan testing
- Works with up to 10 ml of starting material
- Uses an extremely easy-to-handle and time-saving procedure, approx. 30 min
- Comes with both manual und automated routines by InnuPure® C16 and C16 *touch*

Enrichment
LOOXSTER® Technology

It can be extraordinarily challenging to analyze bacterial and fungal target DNA in predominantly eukaryotic DNA isolates, especially when low germ counts are present. LOOXSTER® enriches target DNA in eluates obtained from cells, tissues, or body fluids. This effect is achieved thanks to the specific affinity of the LOOXSTER® protein to the non-methylated CpG-dinucleotides present in the target DNA.

- Enriches bacterial or fungal DNA
- Reduces host background DNA
- Improves performance and the sensitivity of downstream protocols

Enabling Technology



Maximum Flexibility in UV/Vis Spectrophotometry

ScanDrop²

- Features easy handling – just pipette the sample and take your measurement
- Designed with rotating mechanism that opens instrument for optimum access and view of the 10" tablet PC
- With interchangeable adapters that prevent contact between samples and the optical system
- Includes a 2D scanning area adaptable to different center heights
- Ensures highly precise measurements with or without consumables
- Applies the walk-away principle to everything from individual to simple series of samples
- Features stand-alone operation from an integrated 10" tablet and/or PC
- Is a highly precise, fibreless optical system combined with a powerful xenon flash lamp

ScanDrop²

The ScanDrop² raises the bar when it comes to design and user friendliness. All you have to do is switch it on and get started with your measurements. Thanks to its long-life xenon flash lamp, the system is ready to go – with no warm-up phase required. Analytik Jena offers a number of measurement adapters to supplement the built-in test position for 10 mm cuvettes: these include an adapter that accommodates the patented CHIPCUVETTE® (with 16 channels for measurements at up to 32 positions), an 8-position cuvette changer for standard cuvettes (up to 10 mm), and a Butterfly Cuvette for testing 9 samples with no consumables needed.

The ability to record the entire spectrum from 220 nm to 1000 nm in only a few seconds makes the system the ideal choice for UV/Vis applications, particularly for protein and nucleic acid determinations.

8-Position Standard Cuvette Changer, CHIPCUVETTE® and Butterfly Cuvette

Simple and Fast Automated Pipetting Routines

GeneTheatre and CyBio® SELMA

GeneTheatre

CyBio® SELMA 96 and 384

Smart Benchtop System for Your Lab

GeneTheatre is a liquid handling platform with 1-8 channels in a volume range of 0.5 µl up to 1000 µl. The GeneTheatre has been designed to fulfil the demand for entry level, affordable and compact robotics within the liquid handling, life sciences and bioengineering communities. Through its compact design and customer swappable pipetting heads, the system can be adapted to a variety of requirements such as PCR setup, gene assembly, master mix preparation, and serial dilution. While designed to be entry level, the GeneTheatre has 12 freely selectable deck positions capable of handling a variety of application based labware like PCR plates and third-party equipment such as shakers and temperature controlled blocks.

- **Go beyond deck limitations**
  12 freely selectable deck positions, handling of any labware and accessories like microplates and tube holders as well as third-party equipment such as magnets and shaker
- **Save valuable lab space**
  Compact benchtop system with smallest dimensions of 642 x 494 x 607 mm (W x H x L)
- **Explore your possibilities**
  Customer swappable pipetting heads to configure GT for different application requirements
- **Optimize your pipetting performance**
  Proven pipetting technology allows users to transfer samples safely, error free without confusion or missing wells

Your Personal Pipetting Assistant

CyBio® SELMA is a semi-automatic electronic pipettor with minimal required space for fast and precise processing of 96- and 384-well microplates without the need for programming. CyBio® SELMA is amazingly easy to operate via touch screen. All manual operating tasks such as tip change and plate change are shown on the display. Microplates of varying heights and well dimensions can be handled easily by CyBio® SELMA – a simple dial adjusts pipetting head position. Any adjustments such as dispense height, volume, and pipetting speed are saved, retrievable, and changeable for regular use anytime.

- **Simplify your pipetting tasks**
  Easy and intuitive operation via touch screen, comfortable selection for pipetting parameters (e.g. volumes), and saving of methods without programming
- **Save your valuable lab space**
  CyBio® SELMA has a compact footprint and fits on any lab bench as well as into most laminar flow hoods
- **Avoid your laborious efforts**
  Automatic tip tightening as well as easy and fast tip changing with ready-to-use CyBio® TipTrays
- **Optimize your pipetting performance**
  CyBio® SELMA enables a safe and error free transfer of 96 or 384 samples in a single step
- **Become more flexible and be prepared for the future**
  Optional integration of various accessories like vacuum or shaker for a range of applications


analytik jena
analytik jena

Plug and Play BenchTop Automation

Transform your manual workflows to automated processes on your benchtop!

CyBio® FeliX

Future-Proof Liquid Handling Automation

CyBio® FeliX

CyBio® FeliX is a liquid handling platform with 1–384 channels in a volume range of 0.5 µl up to 1000 µl. The CyBio® FeliX meets the market demand for advanced, medium-to high-throughput robotics within the liquid handling community. The high-precision parallel transfer in 96 or 384 well format is complemented by pipetting in single wells, as well as pipetting into columns and rows. CyBio® FeliX offers maximum flexibility with minimal space requirements through a unique deck design with twelve positions on two levels. Despite its compact design, CyBio® FeliX provides sufficient space for microplates, tubes, shaker, magnet adapter and gripper. The modular concept of CyBio® FeliX enables customized configurations for a wide variety of applications and can be adapted at any time to suit changing requirements.

- **Free yourself from work-intense and manual pipetting**
  Fully automated pipetting in different formats and integrated tool and tip exchange
- **Increase your reproducibility and save reagent costs**
  CyBio's HTS proven pipetting technology and liquid-specific parameters for highest precision and accuracy
- **Save valuable lab space**
  Maximum performance with minimal dimensions
- **Be prepared for the future**
  Modular concept - CyBio® FeliX system can be adapted at any time

With configurable accessories and interchangeable pipetting heads and tools for 1- to 384-channel pipetting, the CyBio® FeliX can also process tasks that are even more laborious like plate replication, the creation of reaction setups for PCR and Next Generation Sequencing, ELISA and serial dilution. CyBio® FeliX is also available in a version designed for operation in a laminar flow hood. Cellular assays and liquid handling tasks that require a sterile environment can be easily and quickly automated.

Your Next Generation of Benchtop Handling
CyBio® Carry

The CyBio® Carry with its ultracompact benchtop design perfectly suits your requirements for automation within laboratories with limited space. Designed with multi-instrument capability, the Cartesian 3 axis robot can be configured with different rail lengths to accommodate a wide variety of peripheral instruments. For maximum flexibility, CyBio® Carry offers the possibility of using two positions to transport two objects simultaneously. The robot, which was designed with the top technology for safety, can be placed in front of benchtop instruments. And when it detects the slightest unexpected force, the motor power is automatically disabled.

Real-Time PCR meets Automation
qTOWER³ auto

qTOWER³ auto is ideally suited for connecting quantitative real-time PCR with robotic systems. Integration is simply a matter of a moving sample tray for automatically loading and unloading microplates. The silver sample block delivers high heating rates and outstanding control with an accuracy of ± 0.1 °C. The patented fiber-optic shuttle system ensures the homogeneous detection of up to 6 different fluorescent dyes. Like data acquisition, data analysis is also automatic, and it encompasses an exceptionally wide variety of methods, ranging from absolute quantification to multi plate analyses. A variety of export functions and a LIMS transfer file make all important data available for reliable sample tracking and documentation.

CyBio® Carry and qTOWER³ auto

- **Save valuable lab space**
  Ultracompact design that fits on a standard lab bench
- **Feel free and trust the top in lab safety**
  Full accessibility of integrated devices with maximum safety
- **Simplify your benchtop automation**
  Easy set-up with multiple instrument capability
- **Trust your robot**
  Precise motion and accurate plate placement

- Easiest integration into robotic systems
- Decoupled electronic module with 10 m cable for peripheral positioning
- Provides automated plate handling by moveable tray
- Includes extendable filter module system for maximum flexibility
- High quality silver block for maximum thermal conductivity
- Patented fiber-optic system for ideal real-time PCR signals

Full Modular Automation for HTS and uHTS

Raise Your Throughput and Stay Flexible!

CyBio® Well vario

Flexibility and Precision for Highest Throughput

CyBio® Well vario

The CyBio® Well vario is an automated, simultaneous pipetting platform ideal for large and complex test series in the HTS or uHTS range. The CyBio® Well vario base unit provides fast, exact, and secure movement of microplates via a linear plate moving assembly with a three-, four- or five-position carriage. For more complex experimental protocols, the CyBio® Well vario is also available in a disk platform configuration with ten open-access stations in a circular arrangement. The various interchangeable heads and the huge range of tips and capillaries allow for a wide range of applications and possible configurations, which make the CyBio® Well vario a powerful liquid handling platform.
A working volume range of four orders of magnitude allows liquid transfers from 25 nl up to 250 µl with 96 -1536 channels simultaneously.

- **Broaden your applicational horizon**
  Powerful platform with a wide range of configuration opportunities
- **Increase your throughput**
  Simultaneous 96, 384 and 1536 well plate handling
- **Be prepared for all your lab needs**
  Extensive volume range due to interchangeable pipetting heads
- **Save work cost and time**
  Advanced capillary technology for reliable nanoliter pipetting
- **Ensure your sample integrity**
  Unique tip sealing technology enables high-precision, low-volume pipetting

CyBio® QuadStack

Ergonomic and Flexible Plate Storage

CyBio® QuadStack

CyBio® QuadStack is the high-capacity benchtop solution for microplate storage. With four rotating stacks and one transfer position, the CyBio® QuadStack offers a compact setup with a capacity of up to 260 plates. Its high flexibility and modularity comes from its small footprint (370 mm x 380 mm), three different stack heights, and various access modules for versatile operation.

- **Save valuable lab space**
  Most compact design
- **Be flexible and secure**
  Different stack heights and capacities
- **Push your throughput limits**
  Plate presentation in only 2 sec

CyBio® QuadPrint

High Speed and Precise Printing

CyBio® QuadPrint

The CyBio® QuadPrint sets new automation standards for plate labeling. The CyBio® QuadPrint is the most compact print-and-apply system on the market, and it easily achieves efficient and reliable results within a short time. Due to its smart technology, the CyBio® QuadPrint needs less than ten sec for labeling one side of plate.

- **Stay flexible when it comes to plate orientation**
  Label barcode on all four sides of microplate
- **Avoid time consuming manual adjustments**
  Automatically adjustable label height
- **Work with out-of-the-box applications**
  Easy-to-use CyBio® Print Studio (GUI)

Ideal for Sample Preparation
UVP PCR Cabinets and Workstations

UVP PCR³ HEPA Cabinet & Workstation

UVP PCR² Cabinet & Workstation

Analytik Jena offers a complete line of PCR UV hoods. These use shortwave ultraviolet to control the unwanted transfer of nucleic acids. The systems bring UV irradiation together with antimicrobial-coated stainless steel and aluminum to create a dual-attack environment against PCR contamination. Models available include the standard UVP PCR² models and UVP PCR³ HEPA systems with integrated three-stage filters. The equipment provides efficient use of lab space for placement of large instruments on the work area or small items on the removable shelves. Overhead white light brightly illuminates the work area.

- Uses up to three built-in shortwave (254 nm) UV tubes for decontamination between experiments
- Works with a timer that sets UV exposure for up to 12 twelve hours
- Includes automatic safety shut-off switch that turns the UV light off when door is opened
- Comes with keylock to prevents accidental exposure of samples to UV
- Unique, easy-to-clean antimicrobial coating on the stainless steel and aluminum surfaces
- Designed with hinged door that flips up for easy access to the work area
- Includes built-in power outlets for operating of equipment inside the work area
- Has two shelves, allowing for placement of small equipment
- Makrolon® panels to block UV below 400 nm
- Comes either with or without three-stage HEPA filter
- Different sizes: Cabinet or Workstation to meet each individual need

PCR and *rapid*PCR Thermal Cycler
SpeedCycler² and FlexCycler²

SpeedCycler²

FlexCycler²

Ultrahigh-Performing Thermal Cycler

The fastest on the market! The SpeedCycler² combines flexibility and speed for a real *rapid*PCR. Three different models are available so users can find the perfect fit with many different applications. It uses a true heating rate of up to 15 °C/sec and a true cooling rate of up to 10 °C/sec. The SpeedCycler² stands out from other instruments on the market with its smaller footprint, modular design, external control panel, and, last but not least, its ultrahigh performance.

- Functions as a modern thermal cycler for *rapid*PCR
- Ramping rates of up to 15 °C/sec, adjustable in steps of 0.1 °C/sec
- Delivers outstanding heat transfer via self-adapting container (SAC) technology
- Works with Low-Profile-Rapid (LPR) blocks for fastest ramping and lowest dead volume via low profile rapid (LPR) blocks
- Works with 0.2 ml standard consumables via Standard-Profile-Rapid (SPR) blocks
- Optimized for low reagent consumption and reduced running costs
- Controlled by PC or portable user interface HID-Pro 320
- Features thermal blocks made from solid sterling silver with gold layer

Adapts to your Needs

FlexCycler² delivers on its name. This thermal cycler offers the most in flexibility. With its choice of Mono or Twin Blocks and the optional gradient function, it's perfect for any kind of PCR application. Block exchange takes place in a matter of seconds and doesn't need any tools. The thermal blocks are made of an aluminum alloy that optimizes energy transfer. They use High Performance Smart Lids (HPSL), which ensure constant contact pressure, regardless of plastics used. The contact pressure and temperature of the lids are adjustable. In addition, the Twin Blocks make it possible to control both block sides independently. The unit utilizes state-of-the-art ramping rates and has precision temperature accuracy. Its extra large VGA display, user-friendly interface, and comprehensive software functions make operations easy to understand.

- Intuitive operation and extra-large VGA display
- Quick-X-Change with automatic block detection
- Offers Mono and Twin Blocks with and without gradient feature
- Includes Linear Gradient Tool (LGT): a comfortable gradient programming concept
- Features independent controls for Twin Blocks
- High Performance Smart Lid (HPSL) for pressure that is always optimal
- Offers excellent temperature control of up to ± 0.1 °C
- Consumes minimal power and emits very little noise
- Produces GLP compliant documentation of PCR runs
- Offers USB A and USB B ports for easy data exchange

More than 25 Years Experience in PCR
Biometra Thermal Cyclers

Tradition meets innovation: Analytik Jena is proud of its long tradition of developing high-quality analytical systems. The Biometra thermal cyclers come from this tradition, yielding precise, reproducible results with easy-to-use functionality and excellent technical specifications. All cyclers are manufactured with high-quality materials to create robust, long-lasting products that meet even the highest demands.

Choosing a Biometra thermal cycler will guarantee you a relaxed working day. The airflow inside the system has been optimized to keep the maximum noise level of the instruments down to quiet 45 decibels. This also keeps the additional space requirement down to just ten centimeters – much lower than other thermal cyclers.

All cyclers come with a perfect control accuracy of ± 0.1 °C, which ensures optimal results and stress-free experiments. The High-Performance Smart Lid (HPSL) always maintains constant contact pressure, regardless of the shape and height of the plasticware. This provides maximum reproducibility. An add benefit is the instruments' one-touch opening mechanism, which also prevents the lid from dropping down.

The Biometra thermal cyclers are also known for their standout user-friendliness. With features like a protocol wizard, the Linear Gradient Tool, a user-specific quick start, and an ethernet-based control option for a full cycler network, the system will quickly become your favorite PCR device.

Biometra TOne Optimal Amplification Performance	**Biometra TAdvanced** No Compromises in Technology	**Biometra TRIO** Triple Powered PCR
Precise and cost-effective aluminum sample block	High-end Quick-Block-Exchange with first-class silver and well established aluminum sample blocks	Highly flexible triple-block system for different applications and ideal space saving
Linear Gradient Tool (LGT) up to 20 °C	Linear Gradient Tool (LGT) up to 40 °C	Temperature Optimization Tool (TOS) for easy optimization of annealing temperatures
Up to 4 °C/sec ramping	Up to 8 °C/sec ramping	Up to 5 °C/sec ramping
	Protocol wizard and advanced user management	Protocol wizard and advanced user management

Relaxed working day

- Low noise emission (45 dB)
- Outstanding performance for results that are always reliable
- No need to repeat experiments

Experience stress-free experiments

- Perfect control accuracy (± 0.1 °C)
- Prevent sample loss due to HPSL
- Open to different plasticware

Let this PCR system become your favorite

- Modern look and feel
- Easy-to-Use
- Clever software features

Your Way of qPCR
qTOWER³ Product Family

Redefining excellence: The qTOWER³ product family sets new standards of flexibility and precision – for all real-time PCR applications and guarantees well-founded real-time PCR results. It benefits from peerless temperature control precision in the sample block regardless of the number of samples used – which can range from 96 up to 384.
The patented high-performance fiber-optics ensures outstanding homogeneous excitation and illumination of all individual samples. The qTOWER³ product family achieves unique flexibility with its proven filter module equipment, which can be freely configured and expanded at any time and enables up to six-fold multiplexing.

The patented fiber-optic shuttle system with its unique light source, composed of four high-performance LEDs, allows for ideal excitation of known fluorescent dyes up to the deep red range. In the process, the detection module can accept up to six different color filter modules. The retrofitting option ensures that users can also integrate future innovative developments from Analytik Jena.

	qTOWER³	qTOWER³ *touch*	qTOWER³ 84
Sample block	Silver sample block with gold coating	Silver sample block with gold coating	Aluminium block, special alloy
Block capacity	96 well	96 well	384 well
Reaction volume	5 - 80 µl	5 - 80 µl	2 - 30 µl (5 - 20 µl recommended)
Heating	8 °C/sec	8 °C/sec	4 °C/sec
Cooling	6 °C/sec	6 °C/sec	2 °C/sec
Temperature uniformity	55 °C ± 0.15 °C after 15 sec		
Gradient (optional)	0.1 °C - 40 °C over 12 columns	0.1 °C - 40 °C over 12 columns	0.1 °C - 24 °C over 24 columns
Operation	qPCRsoft package for PC	Stand-alone version with 10" touchscreen incl. qPCRsoft package for PC	qPCRsoft package for PC
Filter configuration	Flexible filter configuration, up to 6 positions in the device		

High-quality sample block for optimal thermal conductivity

- **Unrivaled:** Ideal temperature homogeneity and unmatched control precision
- **Precise:** Programming of integer temperatures from column to column of the sample block using the Linear Gradient Tool

Patented fiber-optic system for ideal real-time PCR

- **Efficient:** Minimal scan times of 6 seconds for up to six-fold multiplexing
- **Innovative:** New light source with four long-term stable LEDs (RGBW)
- **Brilliant:** Ideal illumination and excitation of all 96 or either 384 samples with no edge effects

qPCRsoft package for convenient control and operation

- **Convenient:** Stand-alone operation via integrated tablet control (10“) and/or comprehensive PC control
- **Transparent:** No costs for software licenses or updates
- **Universal:** Covers the entire spectrum from a simple representation of Ct values to the ddCt method and multiplate analysis
- **Multilingual:** Available in multiple languages, including German

Expandable filter module system for maximun flexibility

- **Practical:** The twelve color, FRET and protein modules can be retrofitted or exchanged within only a few minutes
- **Future-proof:** Thanks to new filter modules, adaptable to new applications at any time
- **Durable:** 10-year log-term guarantee for high-performance optical compounds


analytikjena

Perfectly Aligned Chemistry

Molecular Diagnostics and Reagents

CHOOSE YOUR PLATFORM
e.g. PCR, Real-Time PCR, Gel Electrophoresis, Lateral Flow Strip

CONSUMABLES
e.g. PCR Plates, Sealing Foils, Tips

HUMAN DIAGNOSTICS
e.g. HBV, HCV, HDV, HIV-1, HCMV, EBV, PVB19, HSV, TB, MRD

FOOD BORNE PATHOGENS
e.g. *Salmonella, Listeria, Shiga Toxins, Campylobacter, E.coli*

ANIMAL SPECIES IDENTIFICATION
e.g. Pork, Beef, Horse, Goat, Turkey, Fish, Chicken, Sheep, Mammal & Bird

TICK PATHOGENS
e.g. Borrelia, Rickettsia, Anaplasma, Babesia, TBE

KITS ON DEMAND
e.g. Customized solutions for Lateral Flow Strips

CONTROL ASSAYS
e.g. Extraction Control, Amplification Control

POLYMERASES
e.g. Standard Taqs, Hot Start, RT-Enzyme

PCR and qPCR MIXES
e.g. PCR Ready-to-use mixes, Intercalating and probe based dyes

NUCLEOTIDES
e.g. dNTPs mix and sets

LADDERS and LOADING DYES
e.g. Standard or Express, Orange G

Perfect Fit
Consumables, Reagents and Accessories

Analytik Jena offers a range of reagents and consumables ideally suited for achieving the best possible results in combination with the instrument technology. All plastic material, sealing films, polymerases and master mixes are optimized to work with Analytik Jena's thermal cyclers and real-time thermal cyclers. Don't compromise when it comes to your data. Choose Analytik Jena consumables, and see how small differences make a huge difference.

Lab plasticware may seem like it's "a dime a dozen," but not all PCR consumables are created equal. The product portfolio of Analytik Jena offers the perfect consumable for each individual block format of PCR or qPCR thermal cyclers. Benefit from our expert knowledge and optimize your data results.

- Optimally amplifies PCR products and improves Ct values
- Doesn't influence running costs
- Includes small changes –that have a huge effect
- DNase-free and RNase-free plastics available

Optimized solutions include ideally aligned reagents: Single Taq Polymerase, ready-to-use master mixes, and solutions for reverse transcription. Each solution fits perfectly with Analytik Jena's instrumentation and guarantees application advantages in handling and performance.

- **innuTaq:** Taq DNA Polymerases for PCR and/or qPCR; fast running times due to 200 bp/sec amplification speed
- **innuSCRIPT:** cDNA synthesis with single enzyme or as One Step RT PCR Kit and improved stability between 42 °C up to 55 °C
- **innuMIX:** ready-to-use master mixes simplify the preparation of a PCR or real-time PCR reactions
- **innuDRY:** lyophilized master mixes for environmentally friendly delivery at room temperature

Ready to Use Solutions
Target-Specific Assays

For Quantitative and Qualitative qPCR

Analytik Jena's portfolio of assays for molecular diagnostics range from qPCR assays for food analysis – including pathogens and animal species identification – to high-end real-time monitoring of hepatitis B/C and D or other viral targets. All assays are based on the TaqMan® principle and allow quantitative and qualitative detection of target DNA or RNA. These systems combine optimized real-time PCR chemistry with preformulated reagents – including lyophilized standards and controls – to ensure convenient handling and precise results.

- Offer universal kit set-up and uniform PCR protocols that allow for combining assays and meanwhile parallel analysis of multiple targets
- Function as complete workflow: combines fast and easy nucleic acid isolation with highly specific analysis
- Ensure you don't have to compromise – outstanding sensitivities due to careful nucleic acid targeting
- Offer flexible application options depending on sample throughput
- Are well suited for automation on platforms in routine diagnostics

PCR Based Kits for Endpoint Detection

The modular structure of this system combines all necessary steps of molecular diagnostics – isolation of DNA and/or RNA, amplification and detection of target nucleic acids. The rapidSTRIPE detection system uses a lateral flow strip (LFS) as a final detection system. This allows for clear qualitative results following conventional PCR, which means it functions independently of expensive equipment. Subsequently, hybridization with sequence-specific antigen-labelled probes forms the basis for visualizing the results on user-friendly, storage-stable LFS with proven high sensitivity.

- Provide compatibility with upstream nucleic acid isolation kits (blackPREP)
- Ensure the fast, efficient and specific diagnosis of tick-borne diseases
- Include all reagents necessary for amplification/ hybridization reaction and final detection on LFS
- Feature sensitivity comparable to that of real-time PCR

Selection of Electrophoresis Devices
Electrophoresis, Blotting, Power Supplies

Analytik Jena offers a comprehensive range of instruments for electrophoresis. Based on more than 30 years of experience, this high-quality product range has been developed for daily laboratory routines.

Horizontal Gel Electrophoresis

The Compact Line features a robust family for agarose electrophoresis of different gel sizes from mini- up to maxi-sized gels. Low sample numbers are run in Compact XS/S. For medium sample numbers, use Compact M or Compact Multi-Wide with a choice of different gel trays. Compact L/XL allows for high-throughput electrophoresis, processing up to 416 samples in a single run.

- Unique plug&cast gel casting systems
- Provides unique lid for space saving storage
- Multichannel pipet compatible combs

Compact Line

The Horizon family comes with three different chamber sizes. Its compact design is a key feature, with a flap lid and high resistance against chemicals. The Horizon 58 is an extremely compact system for running mini-sized gels. A separate buffer chamber allows for easy replacement of the buffer.

- Gel casting in electrophoresis chamber with casting gates
- Buffer recirculation ports

Horizon family

Vertical Gel Electrophoresis

The Eco-Line offers tank-style systems for polyacrylamide gel electrophoresis and tank blotting. The modular concept of this robust line allows for the electrophoresis and blotting of up to four gels (Eco-Mini) or up to two large gels (Eco-Maxi).

- Double gel system
- Cooling option
- Electrophoresis and tank blot modules

Eco-Line

Minigel-Twin, Multigel, Multigel-Long and Maxigel

An alternative concept for vertical gel electrophoresis is offered by the Minigel-Twin, Multigel, Multigel-Long, and Maxigel. These double-gel systems allow for gel casting without any leakage by employing fixed glass spacers and a unique silicone seal.

- Low buffer requirements
- Leak proof casting gel with unique silicone seal
- Cooling option

Semi-Dry Blotting

Electro-blotting is an important method to transfer proteins and nucleic acids from polyacrylamide gels to nitrocellulose or other membranes. The semi-dry blotters Fastblot B43 and B44 ensure a fast, efficient, and homogeneous transfer. They also offer simultaneous blotting of multiple gels. The use of the blotting device is perfectly easy. The blotting sandwich is placed on top of the anode area, and then the cathode is applied by closing the lid. The blotting process can be started directly.

- Maintenance free platinum/titanium electrodes
- Cooling option (B43)
- Transfer of multiple gels possible

Fastblot B43 and B44

Power Supplies

All the different Analytik Jena electrophoresis instruments are compatible with the offered power supply range.
For low-voltage applications, such as horizontal and vertical gel electrophoresis, tank blotting and semi-dry blotting, different models are available from simple versions to the universal power supply for electrophoresis and blotting, P25/P25T.

- Includes output jacks for connecting up to 4 instruments
- Enables automatic crossover
- Designed to be compact and stackable

P25 and P25T

Gel Documentation
Easy-to-Use Imaging Systems

We offer a wide range of high-performing imaging systems designed to meet varied research specifications and satisfy diverse budgets.There is a suitable solution to be found for every laboratory among all the systems offered. All systems are suited for documenting agarose and polyacrylamide gels with fluorescent and visible colored stains.

Laboratories with limited bench space will benefit from the small footprint of the computer-controlled UVP GelTower and the stand-alone system UVP UVsolo *touch*. Both options are high-quality advanced imagers. All systems come with an easy-to-use image acquisition software and powerful software for gel analysis.

UVP GelTower

Simplify and Maximize Precast and Mini Gel Imaging
This compact imaging system offers great versatility for image acquisition. It acquires color and gray scale images up to 17.9 megapixels (MP), features an autofocus or optional manual focus and offers an integrated UV transilluminator. With UV-to-blue and UV-to-white converter plates as well a five-position filter wheel, it works with a wide variety of imaging applications.

- High-resolution DSLR camera for color images
- Ideally designed for mini- and midi-sized gels
- Includes filter wheel and different illumination sources

UVP UVsolo *touch*

Stand-Alone Gel Documentation System
This stand-alone system comes with a sensitive 5 MP monochrome camera, a manual zoom lens and touchscreen operation. Multiuser laboratories will enjoy the self-explanatory imaging software. Images can be stored on a USB flash drive, on the internal instrument memory or via WLAN in a network. When the door opens, the UV light automatically switches off. Two side-access doors and a gel viewer window allow prep work to be carried out on fluorescent gels under maximum UV protection. A UV override switch ensures that users can still turn on the UV light with the front door open. The transilluminator has settings for three different UV intensity levels.

- Choice of two UV filter sizes: 20 cm x 20 cm or 25 cm x 26 cm
- Filter drawer for different emission filters
- Front door with unique Gel Viewer Window

UVP GelStudio PLUS/ UVP GelStudio PLUS *touch*

50 years of experience in imaging makes the UVP GelStudio PLUS gel documentation at its best.

The advanced imaging system is available as a computer-controlled or a stand-alone system with 15.6" multitouch color screen. The 5 MP camera and motorized zoom lens, the sample illumination and the filter settings are all completely controlled via software. Individual settings can be stored in templates for one-button operation. Users can easily fold down the unique "Slide2Hide" door and slide it smoothly under the draw-out transilluminator. A UV protection shield is built into the darkroom and can be pulled down for sample preparation tasks under UV light excitation. The thin-line UV transilluminator with long-life UV lamps has a large filter size with a 25 cm x 26 cm viewing area and a UV intensity switch.

- Ensures fast and direct access to the gel via Slide2Hide door
- Guarantees optimal UV protection through integrated UV protection shield
- Features 5-position filter wheel
- Offers upgrade options for UV and multispectral epi-illumination

UVP VisionWorks® Analysis Software

VisionWorks® analysis software

This powerful software supports different camera models and comes as part of the imaging systems above.
The gel analysis software can be used for fluorescent, colorimetric or chemiluminescent applications and it accepts typical file formats such as JPG, TIF and BMP. The software provides for efficient analysis and generates precise band size calculations. Additionally, Rf, band intensities and area density calculations are possible. Many different functions, such as annotation and display tools, allow for images to be worked on individually.

- Automatic lane and band recognition
- Automatic calculation for size/MW, mass, RF
- Result sheet
- Perform dendrogram analysis
- Colony counting

UVP Transilluminators

Analytik Jena UV transilluminators feature uniform, bright illumination. The high-grade filter glass provides excellent documentation results with low background noise. The superior illumination uniformity allows for the reliable quantification of electrophoretically separated fluorescent samples. The transilluminators can be used as single units or integrated in imaging systems such as the UVP ChemStudio series. Blue light excitation represents a valuable alternative to UV light for fluorescent dyes with excitation maxima around 470 nm. It prevents the risk of user UV exposure and DNA damage. Applying a UV-to-white converter plate or a white light transilluminator allows for the documentation of visible colored stains.

- Filter sizes from 15 cm x 15 cm up to 25 cm x 26 cm or 20 cm x 40 cm
- Can be purchased with optional intensity selectors and different UV wavelength
- Blue and white light transillumination sources
- Freely adjustable UV protection shield for user UV-protection during gel handling

UV and blue light transilluminators, UV-to-white converter plate

Chemiluminescence Systems
UVP ChemStudio Series

The UVP ChemStudio series has been designed for a wide range of imaging applications, ranging from simple gel documentation to advanced, multispectral and multifunctional imaging. Key application possibilities include the high-resolution detection of chemiluminescence, fluorescence and colorimetric samples.

Multifunctional darkrooms

All UVP ChemStudio darkrooms are both 100 % lightproof and extraordinarily user friendly, with a large front door providing easy access to the instrument's interior.
The overhead white light makes it easy to position and focus the sample.

CCD cameras and Lenses

A set of high-quality, cooled CCD cameras is available with a variety of lenses. This allows for recording a wide variety of signals. In comparison to other detection methods, cooled CCD cameras have been found superior in terms of sensitivity, accuracy, dynamic range, speed and ease of handling.

UVP ChemStudio SA²	UVP ChemStudio	UVP ChemStudio PLUS
Stand-alone system with integrated tablet and 15.6" color touchscreen	Simple, standard darkroom	High-end darkroom for a variety of imaging applications
▪ Simple, intuitive software user interface ▪ USB ports, wired and wireless networking capabilities for saving images	Cost-effective alternative to other chemiluminescence systems	With motorized platform lift
5-position emission filter wheel	4-position emission filter wheel	5-position emission filter wheel
Fully automatic control: illumination, camera, lens and filter wheel	▪ Manually controlled illumination and filter wheel ▪ Camera and lens controlled manually or via software	Fully automatic control: illumination, camera, lens and filter wheel
▪ Stand-alone software: acquisition, multilingual ▪ VisionWorks® software: image analysis (requires external computer)	VisionWorks® software: image acquisition and analysis	VisionWorks® software: image acquisition and analysis

Please also check our homepage for latest product launches!

- Imagers for chemiluminescence, fluorescence and colorimetry
- Upgradeable for NIR/multiplexing imaging applications
- Selection of highly sensitive, cooled CCD cameras with fixed-focal-length or zoom lenses (motorized or manual zoom)
- Light-tight darkrooms with large front door and unique UV-safe gel viewer window
- Available as either a PC-operated unit or as a stand-alone instrument with an integrated color touchscreen
- Includes Ethidium Bromide emission filter in an filter insert with to up to five positions
- Integrated overhead (EPI) white light for optimum illumination and focusing
- Chemi tray for optimum sample placement on the black, non-reflective surface
- Telescoping tray provides easy access to the UV transilluminators
- VisionWorks® Acquisition & Analysis Software, with comprehensive features, image acquisition and analysis

Overall Support

A global network of product, application and service specialists work hand-in-hand to help you fulfill your daily demands.

We support you with:

- Choosing the best technique and instrumental configuration for your application
- Setting up instruments, accessories and methods to meet your individual needs
- Offering ongoing support, trainingand service worldwide

Analytik Jena

Your Partner in Life Science

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Subjects to changes in design and scope of delivery as well as further technical development!

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An Endress+Hauser Company

The Perfect Fit

Reagents and Consumables for PCR & qPCR

Reagents and Consumables for PCR & qPCR

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It's the Details That Matter

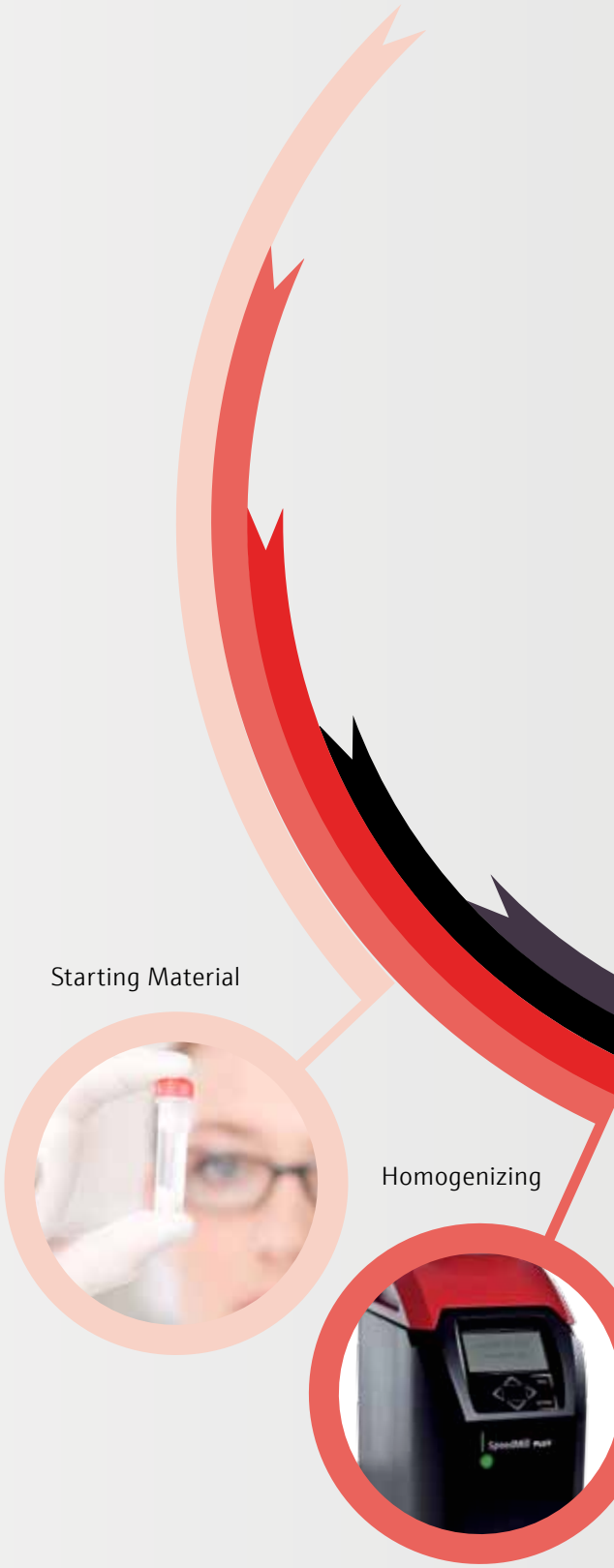
Analytik Jena provides a comprehensive range of consumables and instruments for PCR and qPCR. We aim to offer time-saving processes, long-lasting equipment, and an easy-to-use user interface.

Our thermal cycler portfolio fulfills these promises with its intuitive products that come with advanced extras as standard and are built with the highest-quality materials. PCR is one of the most established methods in molecular biology. qPCR offers the additional advantages of monitoring the amplification in real-time and the final quantitative evaluation of data. Even so, using the wrong consumable can limit the specificity and performance of your assay.

This is why Analytik Jena also offers a range of reagents and consumables to always ensure the best possible results. All plastic material, sealing films, polymerases, and master mixes are optimized to work with our thermal cyclers and real-time thermal cyclers. In addition, our expert teams provide excellent application and service support.

Take our word for it

- **Save time, costs, and hassle:**
  Ideally prepared enzymes, solutions, and additives
- **Find solutions that are a perfect fit for your application:**
  A wide range of single components or ready-to-use master mixes
- **Achieve reproducible results:**
  Perfectly optimized PCR and qPCR plastics as well as sealing foils



The Perfect Fit

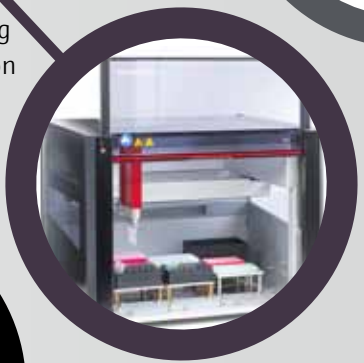
Reagents and Consumables for PCR & qPCR

Don’t compromise when it comes to your data. Choose Analytik Jena consumables and see how small details make a huge difference.

Electrophoresis and BioImaging

Real-Time PCR and Target-Specific Assays

PCR Devices, Reagents and Consumables



Liquid Handling and Automation

UV/Vis Spectro-photometry

Manual or Automated Nucleic Acid Isolation

The Importance of Lab Plasticware

Lab plasticware may seem like it's a dime a dozen, but not all PCR consumables are created equal. Analytik Jena offers the perfect consumable for each individual block format of PCR or qPCR thermal cyclers. Benefit from our expert knowledge and optimize your data results.

An accurate fit is essential for performance

Consumables vary widely by dimension. This is a result of the production speed, the specifics of the tool used, and the quality of the basis material. If the plastic material does not fit the geometry of the thermal block exactly, air gaps between the plastic and the block occur. This negatively affects heat transfer and the sample's final temperature.

All plasticware provided by Analytik Jena is adapted to the thermal cyclers' blocks. In addition to exemplifying optimal geometry, our consumables also have particularly thin walls, which enhances the effect of quick temperature transfers and leads to 100 % reliable amplification results.

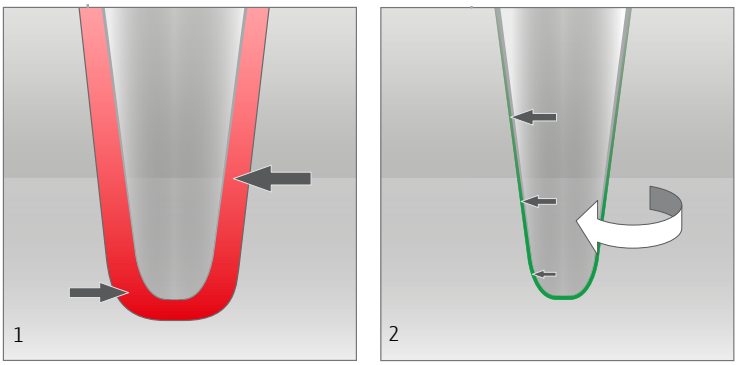
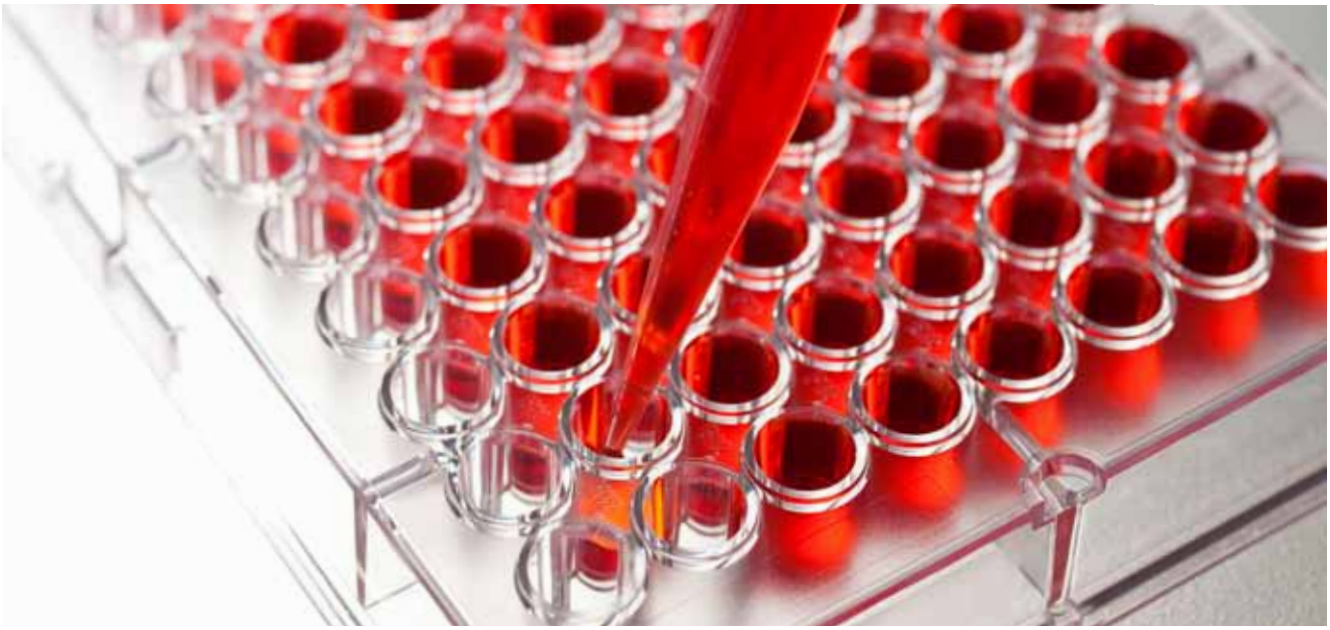


Figure 1: If the plastic is not an exact fit, air gaps occur between the well and the sample block. This inhibits a quick temperature transfer to the sample, which results in non-uniform temperatures and decreasing specificities.

Figure 2: When the wells fit the geometry of the thermal block exactly and have thin walls, quick temperature changes can occur, resulting in specific PCR products accelerated processes.



Comparison of real-time signals using white or clear microplates

It might seem like the well color in qPCR plasticware is a trivial detail. This is not the case! Microplates are commonly available in standard clear, opaque black and white. Although clear plates are easier to use because the well walls offer better visibility of liquids and although black plates ensure the lowest background readings, white microplates provide the most outstanding performance. Clear plates create problems with light scattering through the plastic, which then results in a loss of intensity. Thanks to the light reflection that occurs in the wells of white plates, signal intensity is reinforced, and Ct values for real-time assays are enhanced.

Customer Benefits

- Optimally amplifies products and improves Ct values
- Enhances intensities for ideal end point analysis
- Offers best reproducibility of detected fluorescence
- Doesn't influence running costs
- Includes small changes that have a huge effect
- DNase-free and RNase-free plastics available

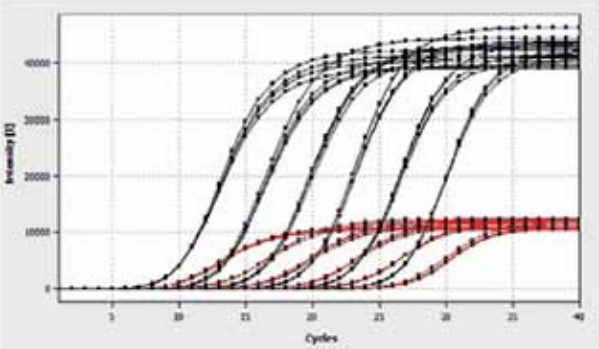


Figure 3: Comparison of white and clear microplates used in the amplification of the actin gene in a serial dilution (10x), from 10^6 to 10^1 of tobacco gDNA using innuMIX qPCR MasterMix SyGreen. The use of white microplates in real-time PCR experiments leads to total fluorescence intensities, which are more than four times higher than when using transparent plastic ware.

No.	Copies	Clear	Ct values	
			White	ΔCt
Std 1	10^6	10.74	8.77	1.97
Std 2	10^5	14.67	12.06	2.61
Std 3	10^4	17.59	15.30	2.29
Std 4	10^3	20.73	18.50	2.23
Std 5	10^2	24.13	21.95	2.18
Std 6	10^1	28.07	25.61	2.46

Amplification plots (black): White microplate, $R^2 = 0.99943$, efficiency = 0.99
Amplification plots (red): Transparent microplate, $R^2 = 0.99931$, efficiency = 0.98

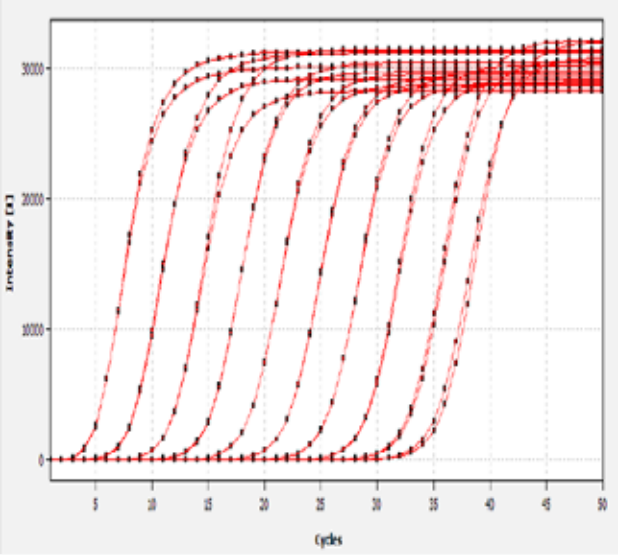
Enzymes and Master Mixes

Analytik Jena offers optimized solutions. Our reagents are ideally adapted to our corresponding technology. Combining the optimized device with the best-suited consumable ensures that data will be monitored under ideal conditions, which, in turn, promises a reliable basis for downstream analysis and result evaluation.

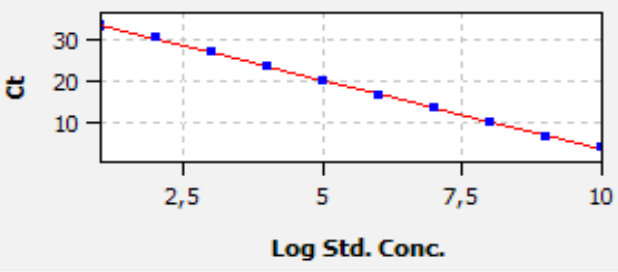
PCR and qPCR amplifications by using thermal and real-time thermal cyclers is state-of-the art and not a challenge in principle. Nevertheless applications down to the dectection limit as well as high concentrated samples can become difficult especially in case device and chemsitry are not ideal balanced. Analytik Jena reponse to the daily application requirements are optimized components and master mixes for PCR and real-time PCR, that exactly fits to the described needs.

Customer Benefits

- Creates ideal reaction conditions for usage with Analytik Jena thermal cycler and real-time thermal cycler
- Offers quick preparation and intuitive procedures
- Promises excellent result reproducibility
- Provides a wide choice of complementary systems



A: Amplification plot linear view



C: Amplification plot logarithmic view

No.	Mean Ct value	Δ Ct value
Standard 1	3.76	-
Standard 2	6.55	2.79
Standard 3	9.97	3.42
Standard 4	13.11	3.14
Standard 5	16.44	3.33
Standard 6	19.92	3.48
Standard 7	23.27	3.35
Standard 8	26.74	3.47
Standard 9	30.41	3.67
Standard 10	33.60	3.19

B: Determination of Ct values

Figure 4: The amplification in a high dynamic range was tested by 10 dilution steps in a serial dilution (10x) by using innuMIX qPCR SyGreen MasterMix. The difference determined between the single concentrations with approximately 3.33 cycles fits ideally with the target range of ΔCt 3.3 to 3.6 cycles. Additionally, all replicates were added to a standard line with the result of $R^2 = 0.999$ and a PCR efficiency of 1.

Polymerase for PCR and qPCR: innuTaq enzymes

When used in combination with innuTaq DNA polymerase, Analytik Jena's thermal cyclers demonstrate unrivaled amplification performance. Amplified products are free of unspecific products and primer dimers. This results in highly specific and clear bands.

Customer Benefits

- Offers extreme thermal stability of enzymes
- Provides products for standard, hot start, real-time, and *rapid*PCR
- Delivers optimized 10x PCR buffers and $MgCl_2$ solution
- Works with a high amplification speed of up to 200 bp/sec

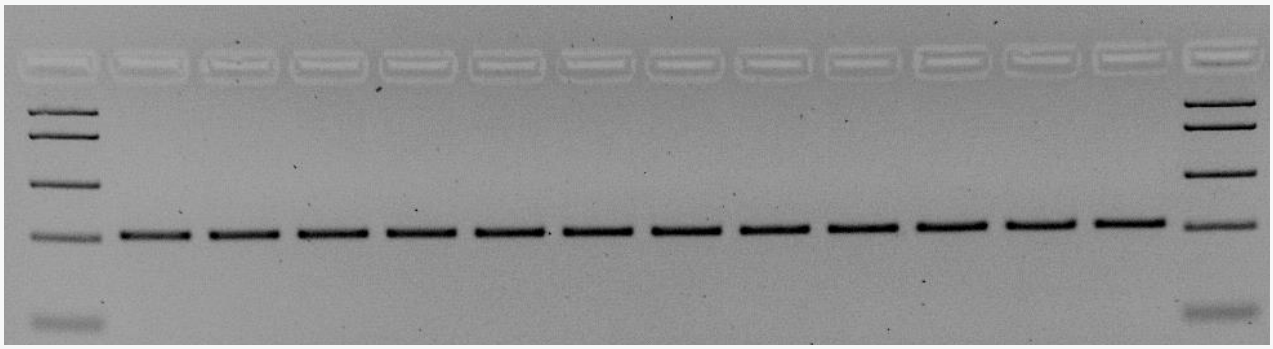


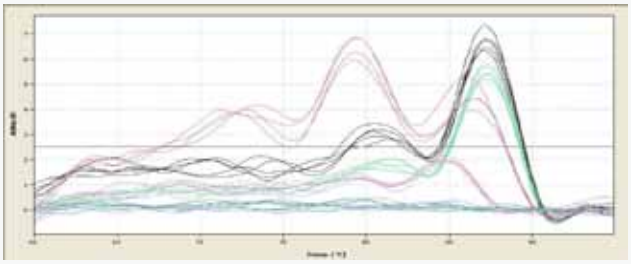
Figure 5: A 210-bp fragment of the β-Globin gene was amplified using innuTaq Hot-A DNA polymerase. All bands showed identical intensity over 12 technical replicates. This stems from the perfect alignment between thermal block, plasticware, and chemistry. Lane 1 and 14: DNA ladder; Lane 2–13: 210 bp fragment of β-Globin

Ready-to-Use master mixes for PCR & qPCR: innuMIX and innuDRY kits

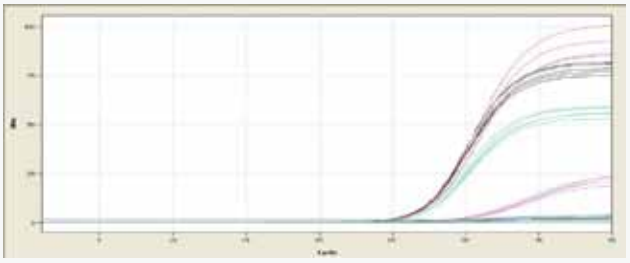
Whether you're working with intercalating dyes or probe assays, innuMIX master mixes are the ideal amplification reagents for a variety of real-time PCR applications. The concentration of these mixes has doubled. This simplifies setup enormously, reduces hands-on steps significantly, and minimizes sources of error. In addition, the innuDRY mixes come lyophilized, which means they can be delivered and stored at room temperature – an added bonus for the environment.

Customer Benefits

- 2x master mixes, including a specific Taq DNA polymerase, high-quality dNTPs, and an optimized buffer system
- Also available with gel loading and intercalating dyes
- Promises high reproducibility and PCR efficiency
- Is easy to use for fast qPCR or PCR preparation
- Added bonus: innuDRY Mixes are lyophilized, utilizing environmentally friendly delivery at room temperature



A: Melting curves



B: Amplification plots

PCR UV Cabinets and Workstations

For reliable and reproducible results when working with and handling DNA, a contamination-free environment is essential. Especially for master mix preparation in PCR or real-time qPCR, it is vital to strictly avoid any possible influence of unwanted nucleic acids.

Analytik Jenas UVP PCR UV Cabinets and Workstations offer ideal conditions to control potential PCR contamination with built-in 254 nm UV tubes for inactivation of DNA and RNA between experiments. UV irradiation acts as a genotoxic agent and generates DNA photoproducts like dimeric pyrimidine.Because its native structure is destroyed, DNA consisting of photoproducts cannot be amplified. Using UV irradiation as a standard laboratory practice will help reduce surface and airborne contaminants in the chamber, as well as maintaining a clean work area to save time and reduce unnecessary repeat experiments.

Customer Benefits

- Safe decontamination without additional reagents
- Integrated timer for defined, measured irradiation treatment
- Up to three short-wave UV light sources included
- Three-stage filter available consisting of pre-filter, activated carbon filter and HEPA filter
- UV air circulator and chamber UV lamps for additional decontamination

Application

254 nm UV light was irradiated to human DNA (0.1 ng/ml on parafoil) for 0 min, 30 min and 60 min. After, a real-time PCR system was used to determine the SRY-gene of human DNA and monitor the influence on the amplification. Only 60 minutes of UV irradiation is needed to destroy the native structure of human DNA with a spot concentration of 0.1 ng/ml. The outstanding performance of the UVP PCR Cabinets and Workstations makes contamination-free work between different experiments both simple and very reliable. No additional reagents and thus costs are necessary, as UV light at 254 nm offers a perfect solution for ideal decontamination.

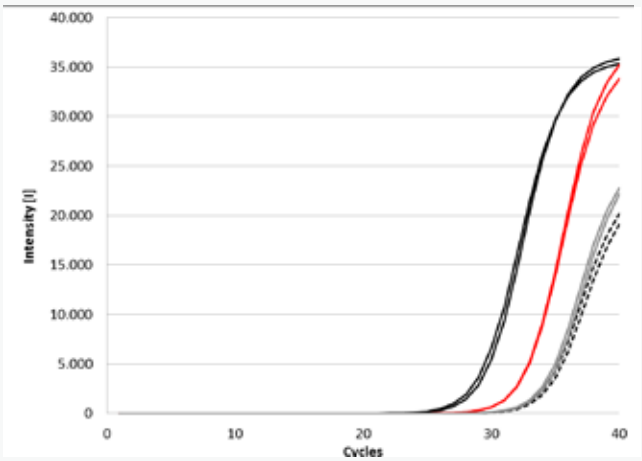


Fig.10: The amplification plots show a shift of mean Ct values from 25.9 before UV to 29.3 after 30 min UV and to 30.9 after 60 min UV. The Ct value of NTC's is 31.4.
Black: 0 min irradiation;
Red: 30 min irradiation;
Grey: 60 min irradiation;
Black (scattered): NTC

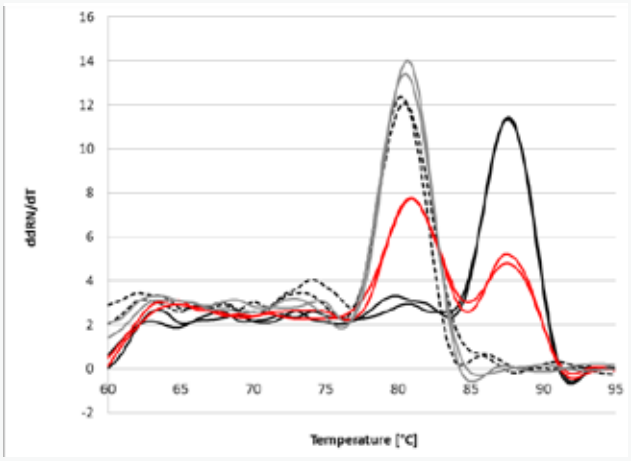


Fig. 11: Melting temperatures of the PCR products differ significantly between the different UV irradiation times. Without UV treatment, the Tm is 87.6 °C, the specific Tm of the PCR product. After 30 min UV irradiation, the melting curve shows two peaks at 87.6 °C and 80.4 °C. The Tm of NTC's and PCR products after 60 min decontamination is shifted to 80.4 °C. This peak results from the generation of unspecific primer dimers.

Order Information

PCR

Polymerases and master mixes

Order number	Description/Quantity	
845-EZ-1000500	innuTaq DNA Polymerase - 500 Units	Thermostable DNA Polymerase
845-EZ-3000500	innuTaq HOT-A DNA Polymerase - 500 Units	Hot-start DNA Polymerase
845-AS-1400100	innuMIX Green PCR MasterMiX – 100 reactions	Ready-to-use master mix including loading dye
845-AS-1400200	innuMIX Green PCR MasterMiX – 200 reactions	Ready-to-use master mix including loading dye
845-AS-1700100	innuMIX Standard PCR MasterMix – 100 reactions	Ready-to-use master mix
845-AS-1700200	innuMIX Standard PCR MasterMix – 200 reactions	Ready-to-use master mix
845-AS-2100100	innuDRY Standard PCR MasterMix - 100 reactions	Lyophilized master mix for PCR
845-AS-2100200	innuDRY Standard PCR MasterMix - 200 reactions	Lyophilized master mix for PCR

Selection Chart - Plastic ware PCR

Order number	Description/Quantity	Biometra TOne	Biometra TAdvanced	
		96 / 96 G	60 / 60 G	96 / 96 G / 96 SG
Plastic ware (Single tubes)				
844-70016-0	0.2ml thin-walled tube, clear - 1,000 pieces	✔	✔	✔
844-70017-0	0.5 ml thin-walled tube, clear - 1,000 pieces		✔	
844-70084-0	8 Well Strip (0.2 ml; High Profile), transparent with lid (flat) - 120 pieces	✔		
844-70085-0	8 Well Strip (0.2 ml; Low Profile), transparent with lid (flat) - 120 pieces	✔		✔
844-70033-0	96 Well PCR Plate (0.2 ml; High Profile), non-skirted, clear - 100 pieces	✔		✔
844-70034-0	96 Well PCR Plate (0.2 ml; High Profile), half-skirted, clear - 100 pieces	✔		✔
844-70035-0	96 Well PCR Plate (0.2 ml; Low Profile), full-skirted, clear - 100 pieces	✔		✔
844-70043-0	Sealing foil (77 x 140 mm), adhesive, transparent, peeling - 100 pieces	✔		✔
844-70044-0	Sealing foil (77 x 140 mm), adhesive, aluminum, piercing and peeling - 100 pieces	✔		✔
844-70060-0	8 Well Strip (20 µl), clear - 125 pieces			
844-70080-0	Sealing foil Strip (65 x 10 mm), adhesive, transparent, peeling - 125 pieces			
844-70050-0	96 Well Microplate LP (20 µl), clear - 25 pieces			
844-70070-0	Sealing foil (74 x 40 mm), adhesive, Aluminium, piercing and peeling - 25 pieces			
844-70075-0	Sealing folie (74 x 40 mm), adhesive, transparent, peeling - 25 pieces			
Laboratory notebook				
844-MA205-2	Laboratory Notebook			
844-MA205-4	Laboratory Notebook - 12 pieces			

dNTP's, DNA ladders, buffers and additives

Order number	Description/Quantity	
845-AS-1100250	inNucleotide Set (100 mM), - 4x 0.25 ml	Ready-to-use nucleotide mix
845-AS-9000100	50x inNucleotide Mix (12.5 mM) - 2x 0.5 ml	Set of 4 separate dNTP solutions
845-ST-1010100	innuSTAR 100 bp DNA Ladder Express - 500 µl	DNA ladder from 100- 1000 bp
845-ST-1010500	innuSTAR 100 bp DNA Ladder Express – 5x 500 µl	DNA ladder from 100- 1000 bp
845-ST-1020100	innuSTAR 1 kb DNA Ladder Express - 500 µl	DNA ladder from 300-10,000 bp
845-ST-1020500	innuSTAR 1 kb DNA Ladder Express – 5x 500 µl	DNA ladder from 300-10,000 bp
845-ST-3010006	6x Loading Dye Bromphenolblue - 6 x 1.0 ml	Ready-to-use loading dye
845-ST-4010006	6x Loading Dye Orange G - 6 x 1.0 ml	Ready-to-use loading dye

Biometra TRIO			FlexCycler²				SpeedCycler²	
30	48	Combi	96 / 96 G	Twin 48 / 48 G	Twin 30	Twin Combi	96 LPR	96 SP / SPR
	✔	✔	✔	✔		✔		✔
✔		✔			✔	✔		
	✔	✔	✔	✔		✔		✔
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Order Information

Real-time PCR

Master mixes

Order number	Description/Quantity	
845-AS-1300100	innuMIX qPCR MasterMix SyGreen - 100 reactions	Master mix for real-time PCR including intercalating dye SyGreen
845-AS-1300200	innuMIX qPCR MasterMix SyGreen - 200 reactions	Master mix for real-time PCR including intercalating dye SyGreen
845-AS-1900100	innuDRY qPCR MasterMix Probe - 100 reactions	Lyophilized master mix for real-time PCR
845-AS-1900200	innuDRY qPCR MasterMix Probe - 200 reactions	Lyophilized master mix for real-time PCR
845-AS-1200100	innuMIX qPCR MasterMix Probe - 100 reactions	Master mix for real-time PCR
845-AS-1200200	innuMIX qPCR MasterMix Probe - 200 reactions	Master mix for real-time PCR
845-AS-1201000	innuMIX qPCR MasterMix Probe - 1000 reactions	Master mix for real-time PCR
845-AS-1300100	innuMIX qPCR MasterMix SyGreen - 100 reactions	Master mix for real-time PCR including intercalating dye SyGreen

Selection Chart - Plastic ware real-time PCR

Order number	Description/Quantity	qTOWER³ Family 96 / 96 G
Plastic ware		
847-0501000602	RoboStrip® 8 well strip low profile (0.1 ml) polypropylene white - 125 Strips	✔
847-0501001102	RoboStrip® 8 well strip low profile (0.1 ml) polypropylene white incl. sealing foil - 125 Strips	✔
844-70086-0	8 Well Strip (0.2 ml; High Profile), white without lid - 120 pieces	✔
844-70087-0	Optical 8 Well Lid Chain, transparent, flat - 120 pieces	✔
844-70036-0	96 Well PCR Plate (0.2 ml; High Profile), non-skirted, white - 100 pieces	✔
844-70037-0	96 Well PCR Plate (0.2 ml; High Profile), half-skirted, white - 100 pieces	✔
844-70038-0	96 Well PCR Plate (0.2 ml; Low Profile), full-skirted, white - 100 pieces	✔
844-70045-0	Optical sealing foil (77 x 140 mm), transparent, peeling - 100 pieces	✔
846-050-258	Optical sealing foil (77 x 140 mm), adhesive, transparent, peeling able - 100 pieces	✔
Laboratory notebook		
844-MA205-2	Laboratory Notebook	
844-MA205-4	Laboratory Notebook - 12 pieces	


qTOWER³

Overall Support

A global network of product, application and service specialists work hand-in-hand to help you fulfill your daily demands.

We support you with:

- Choosing the best technique and instrumental configuration for your application
- Setting up instruments, accessories and methods to meet your individual needs
- Offering ongoing support, trainingand service worldwide

Analytik Jena

Your Partner in Life Science

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Sample Preparation Made Easy.
Comprehensive Solutions for Nucleic Acid Extraction

Nucleic Acid Extraction/Enabling Technologies

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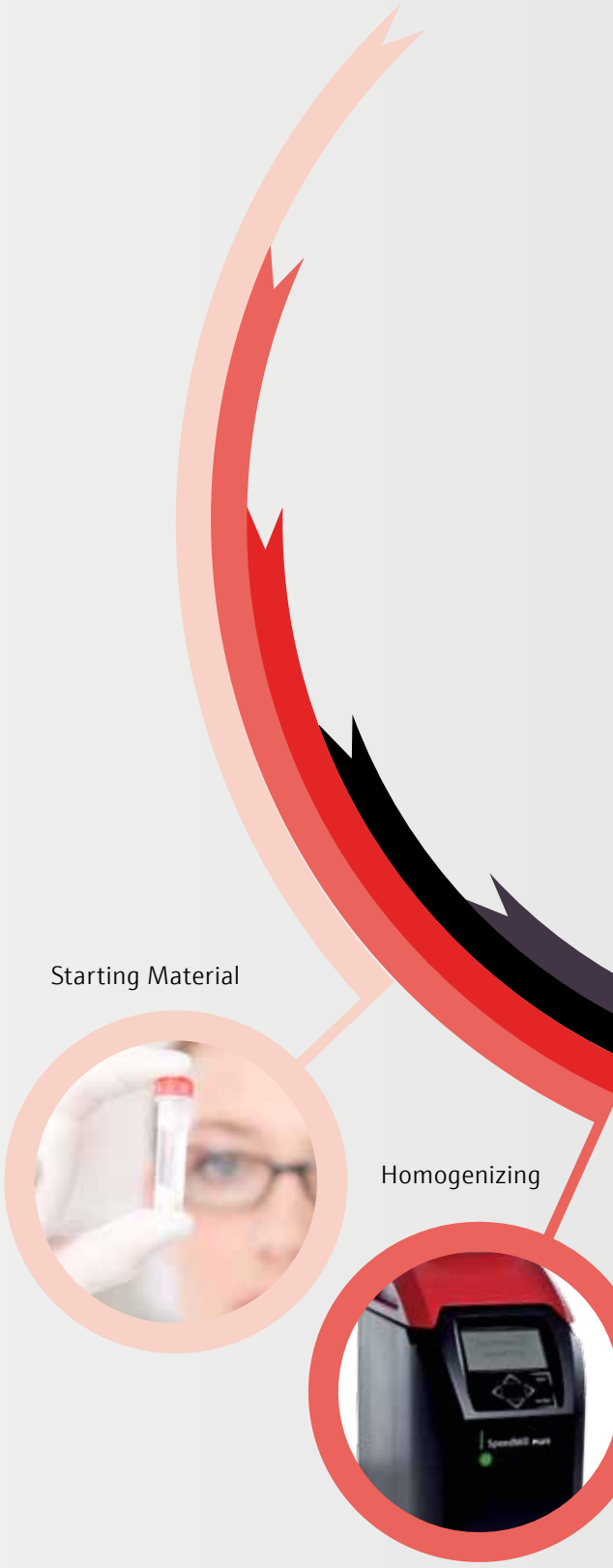
Nucleic Acid Extraction and Enabling Technologies

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

Don’t waste your time and samples – trust in Analytik Jena’s long-term experience.

Special extras of each product will ease up your work and guarantee for reliable downstream, applications.

We Change the Way to Prep
SmartExtraction

More than 35 years after silica-based DNA and RNA isolation was first scientifically documented[1] 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 all of Analytik Jena's pipetting systems, including InnuPure® C16 & C96, CyBio® SELMA, GeneTheatre, and CyBio® FeliX, and is simple to adapt for use with any liquid handling system[2].

[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

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 time 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.

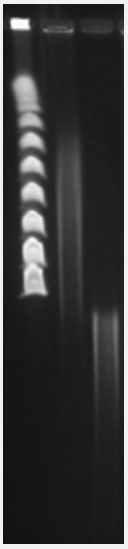


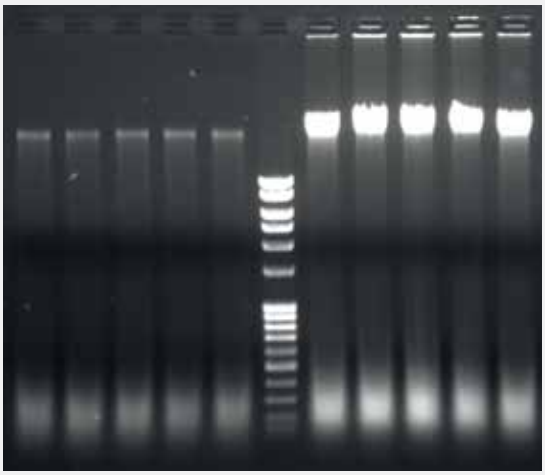
Figure 1: A comparison between manual nucleic acid extraction using an anion exchanger and SmartExtraction with the InnuPure® C16. The Rotaphor system (PFGE – pulsed field gel electrophoresis) was used to determine the molecular weight of isolated DNA.

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

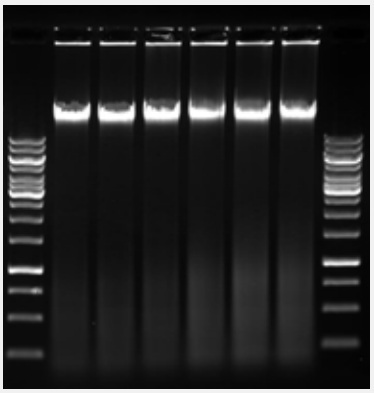
Figure 2: A comparison between DNA isolation based on magnetic particle separation and on SmartExtraction. Tissue samples of 80 mg chicken meat each were used. In contrast to the magnetic particle isolation, the yield of DNA more than doubles when using SmartExtraction while simultaneously cutting prep 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.

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

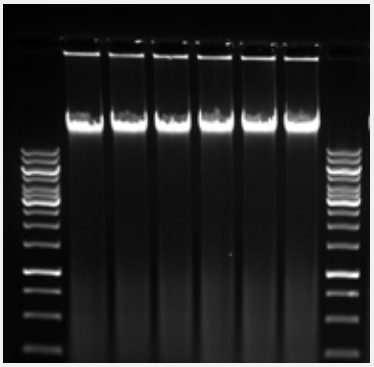
Automation made easy: platform independent technology

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.



A: CyBio® FeliX and CyBio® SELMA



B: GeneTheatre and InnuPure® C16

Lane	Device	A260:A280	A260:A230	Yield [µg]
2	CyBio® FeliX	1.93	1.78	33.79
3		1.93	1.74	30.35
4		1.93	1.66	33.88
5	CyBio® SELMA	1.94	1.79	36.91
6		1.97	2.07	39.40
7		1.95	1.93	39.91
10	GeneTheatre	1.94	1.82	34.08
11		1.94	1.89	35.00
12		1.96	2.00	31.88
13	InnuPure® C16	1.93	2.08	34.58
14		1.93	1.84	32.00
15		1.92	1.90	32.93

Figure 3: Meat of pork muscle each sample with 50 mg was used to extract high molecular weight DNA based on SmartExtraction technology. Independent on the used platform – InnuPure® C16 *touch* as standard isolation system, CyBio® FeliX and GeneTheatre as benchtop liquid handlers or even CyBio® SELMA as semi-automated system – the yield (30 – 39 µg) and quality (1.9) of DNA is equal and comparable.

It's the Chemistry
DC-Technology®

Faster. More efficient. Just plain better. The well-established platform of Analytik Jena's nucleic acid extraction has always been the patented Dual Chemistry (DC)-Technology®. This means the differences between Analytik Jena DNA/RNA isolation kits and competitor products are not just superficial ones. It's a question of sophisticated chemistry!

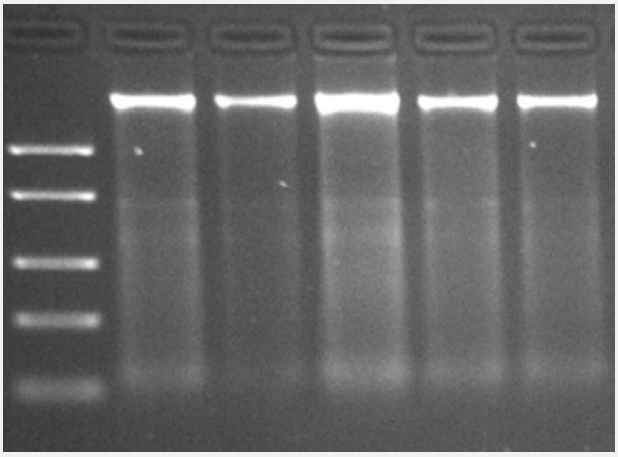
At the heart of DC-Technology® is the ability to bind DNA extremely efficiently to a solid phase without needing a high salt concentration. Instead, the technology uses a combination of chaotropic and non-chaotropic salts with low ionic strength. This enables the development of optimized lysis and new binding buffers.

DC-Technology® has even more benefits beyond forming the basis of SmartExtraction. It also allows for the high performance of manual nucleic acid extraction when using spin filters. So, nothing will change for users when it comes to hardware and work organization. The routine stays the same. However, the improvements in quality, preparation time, and downstream results are satisfying. The more complex the starting materials are, the more you'll find this to be the case.

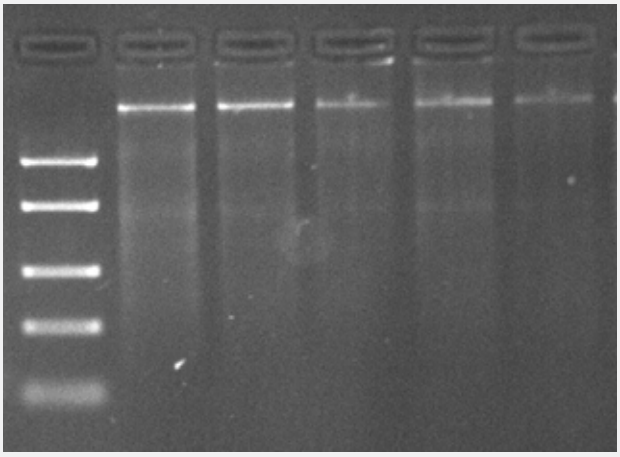
With DC-Technology® and spin filter columns, you'll finally get solutions to those longtime questions you've had.

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.



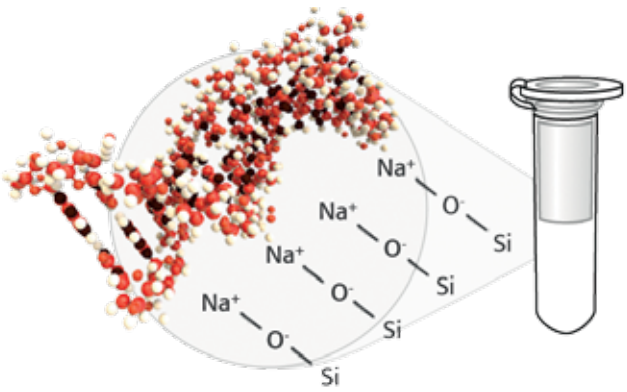
A: Analytik Jena



B: Competition

No.	Kit	A260:280	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 the competitor's, while both kits produce equal quality.



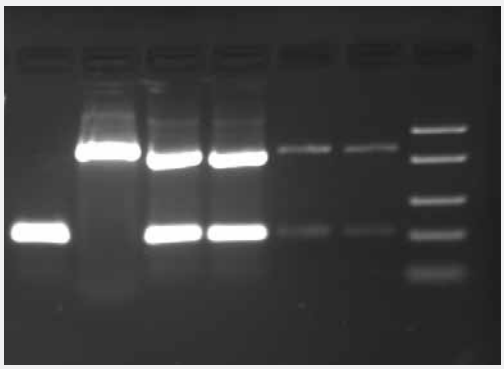
The need of flexible and versatile ready-to-use kits is growing more and more. The fast, easy and secure handling of DC-Technology® perfectly meets those requirements.

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

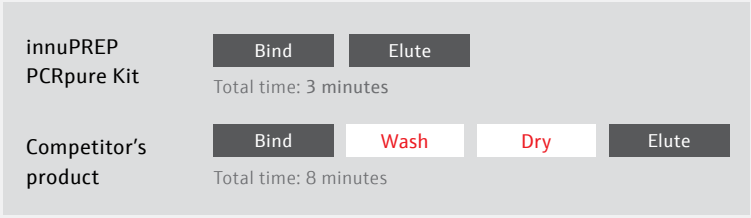
Does your kit require four steps to clean up PCR products?

Discover comprehensive cleanup with minimized handling. Everyone loves a shortcut that doesn't 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).



A: Gel image

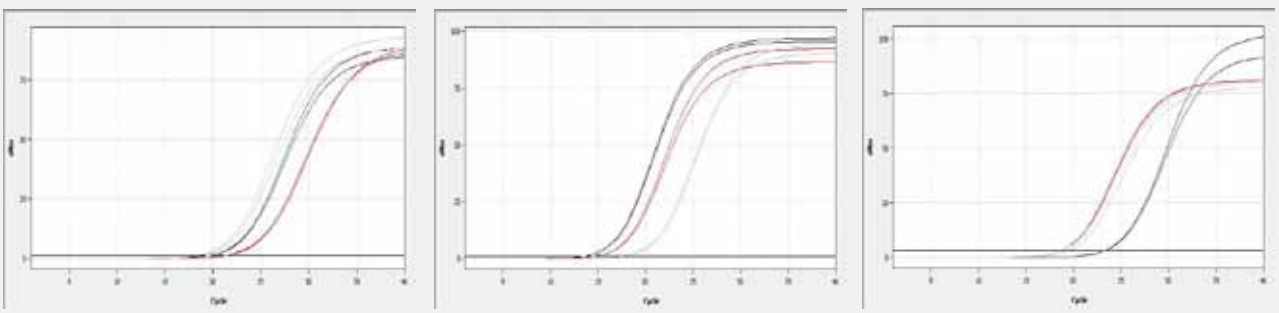


B: Comparison of hands-on time

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.



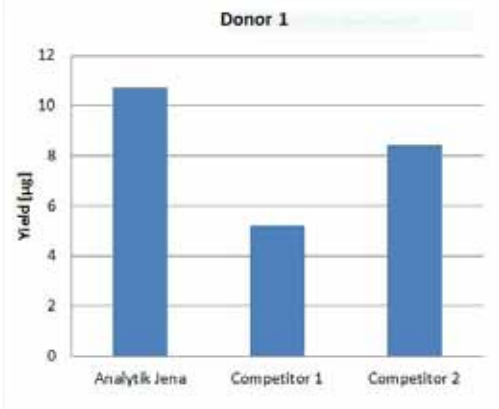
A: Oil palm leaf B: Papaya leaf C: Black bean seed

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.

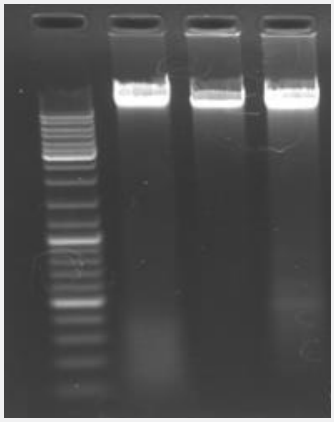
Do you feel helpless when it comes to optimizing downstream cutoffs?

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.



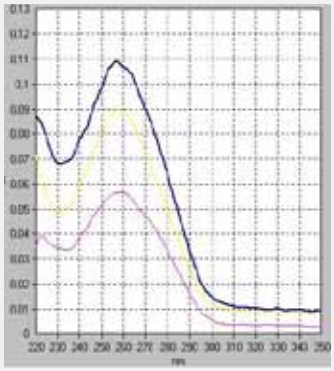
A: Yield of DNA



B: Gel image

Figure 7: 400 µl of whole blood (EDTA) was 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

DC-Technology® is also suitable for proven magnetic particle separation and offers the same outstanding advantages as it does for manual spin filter nucleic acid extraction. A variety of different nucleic acid extraction kits are available, in particular for the InnuPure® systems and King Fisher® devices. Using these kits guarantees excellent results with high purity and yield. This ensures that the final product will be free of proteins, nucleases, and other contaminants, so it can be used immediately in subsequent applications. Both instruments save signficant time and reduce manual interventions to the absolute minimum. The automated extraction system operates alle necessary steps based on optimized, pre-installed routines.

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 InnuPure® C16 and C16 *touch* are high-grade pipetting systems optimized to efficiently isolate DNA from whole blood samples of up to 400 µl. Just load the sample to the prefilled, sealed reagent plastics and start the routine. The extraction process will now run completely automatically. No further manual steps are necessary.

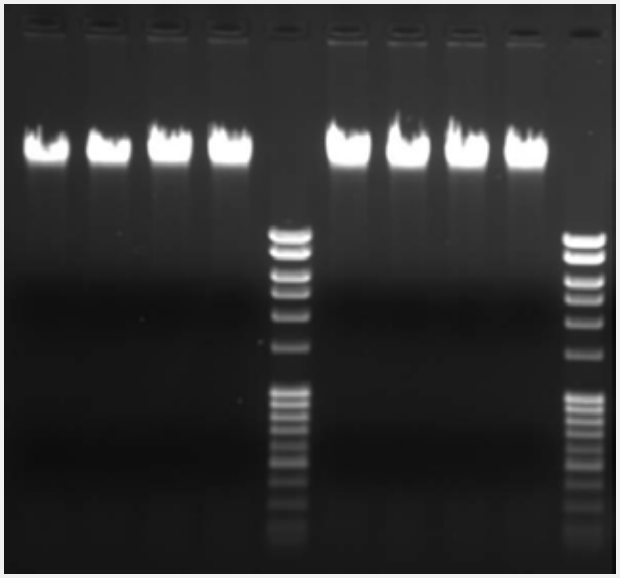


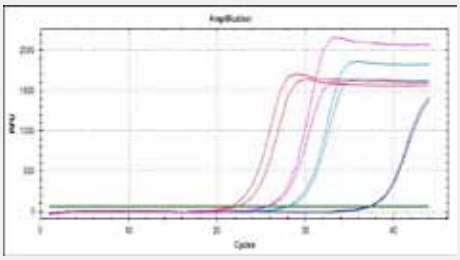
Figure 8: In combination with innuPREP Blood DNA Mini Kit – IPC16 different whole blood samples of 400 µl each were used for automated DNA isolation with InnuPure® C16 and InnuPure® C16 *touch*. Lane 1–4: DNA from whole blood processed with InnuPure® C16; Lane 5 and 10: DNA ladder; Lane 6–9: DNA from whole blood processed with InnuPure® C16 *touch*

Lane	Device	A_{260}:A_{280}	A_{260}:A_{230}	Concentration [ng/µl]	Yield [ng/µl]
1	InnuPure® C16	1.81	2.14	30.0	4.5
2	InnuPure® C16	1.85	2.17	32.5	4.9
3	InnuPure® C16	1.82	2.07	40.5	6.1
4	InnuPure® C16	1.81	1.95	40.0	6.0
5	DNA Ladder				
6	InnuPure® C16 *touch*	1.80	2.19	46.0	6.9
7	InnuPure® C16 *touch*	1.82	2.10	41.0	6.2
8	InnuPure® C16 *touch*	1.84	2.44	41.5	6.2
9	InnuPure® C16 *touch*	1.81	2.30	38.0	5.7
10	DNA Ladder				

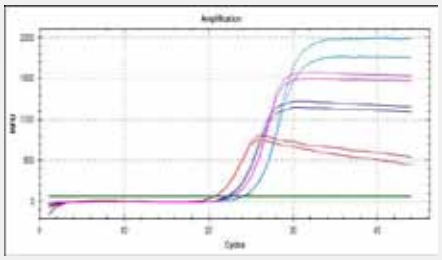
Reduce contamination: easy handling of even the most complex matrices

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

The combination of InnuPure® C16 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.



A: Spicy potato chips



B: Instant soup

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 in potato chips and an instant soup. Finally, a target-specific amplification in real-time was carried out with double determination of the undiluted and 1:10 diluted sample.

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.

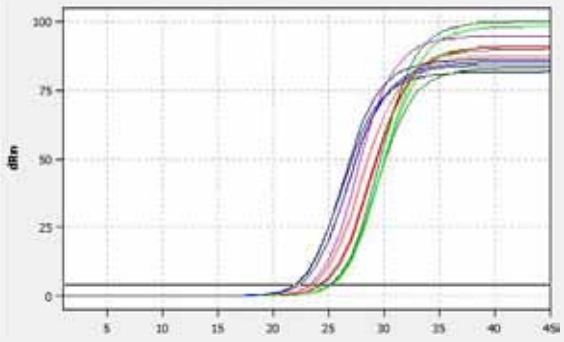


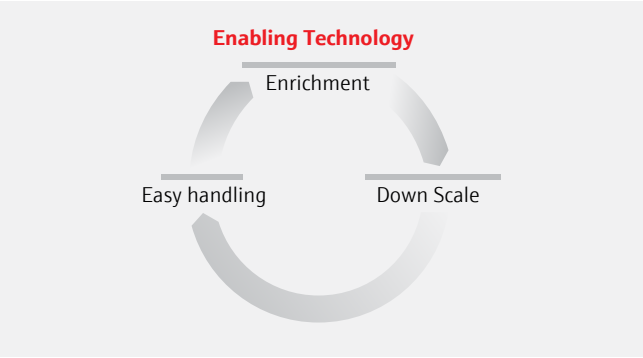
Figure 10: Two different samples of rice grains were lysed using three different lysis buffers for automatic extraction via InnuPure® C16 and magnetic particle separation. 9A: Rice-specific amplification plots. Blue: Lysis buffer CBV; Red: Lysis buffer SLS; Green: Lysis puffer OPT

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 and Epigenetics

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 and epigenetics contains a number of unique patented methods that serve as a solution to challenging special requirements.



Enrichment

PME – Polymer-Mediated Enrichment

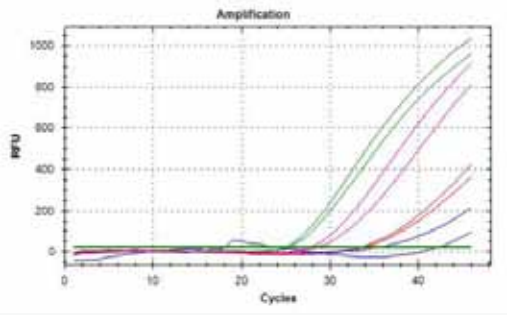
Targeting free-circulating DNA or DNA in a food quality control situation (e.g., halal and vegan testing) are challenging tasks requiring innovative technology. New approaches for enriching nucleic acids are needed when it comes down to ensure reliable downstream results. Polymer-mediated enrichment (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 if 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.

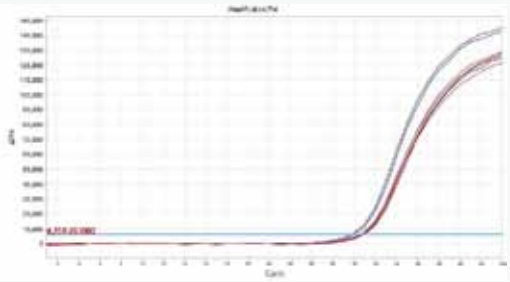


Figure 12: Free-circulating DNA from human urine samples of 5 and 10 ml was extracted using the PME Free-Circulating DNA Extraction Kit. Subsequently, the cell-free DNA was tested and compared with DNA that had been extracted from a 4 ml urine sample subjected to a competing extraction kit for free-circulating 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.

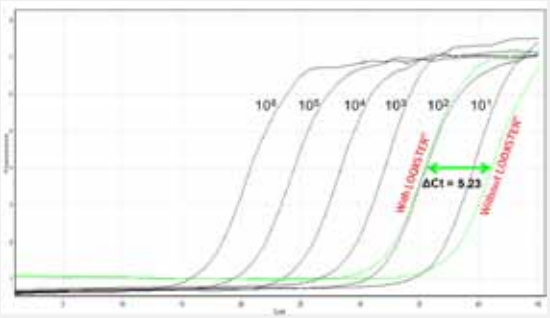
Enrichment
LOOXSTER® Technology

LOOXSTER® is an enabling technology that reduces the mammalian background of a DNA eluate to enrich pathogen DNA in a sample. The LOOXSTER® magnetic particles are coated with a protein to specifically bind the nonmethylated CpG-dinucleotides. This method allows the easy and highly efficient separation of bacterial and fungal nucleic acids from mammalian DNA. More than 95% of higher eucaryotic DNA can be removed with a maximum of 300 µg input DNA.

- Efficiently enriches bacterial or fungal DNA
- Reduces host background DNA by up to 95%
- Improves performance and the sensitivity of downstream protocols

How can LOOXSTER® improve downstream testing?

When working with qPCR target DNA, application is crucial for reliable and sensitive analyses. The process of reducing the mammalian background and thus enriching bacterial and fungal nucleic acids creates an enormous improvement of real-time PCR applications for pathogen detection.



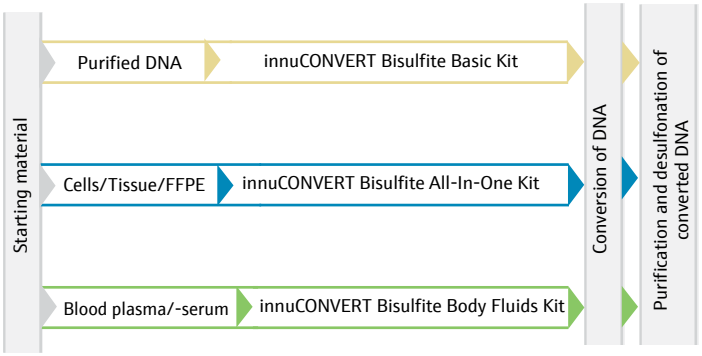
Amplification plots

Figure 13: To demonstrate the LOOXSTER® effect, 50 µg of human genomic DNA that had been isolated from an EDTA whole blood sample was spiked with 10^3 copies of *E.coli* DNA. 200 ng of LOOXSTER®-treated and untreated template DNA was used for real-time PCR. The comparative qPCR shows a ΔCt of 5.23. This amounts to an increase of 37.5 times in target DNA concentration in the LOOXSTER® sample when compared to the untreated counterpart.

Bisulfite Conversion
innuCONVERT Kits

The innuCONVERT bisulfite product family lets users completely convert nonmethylated cytosine to uracil in just a few hours. For best functionality, the DNA sample denaturation and bisulfite treatment are combined in the same reaction vessel. After a total reaction time of approximately 2.5 hours, the converted DNA is isolated, desulfonated, and finally eluted. Subsequently, high-purity nucleic acids become available for immediate downstream applications (e.g., PCR, sequencing).

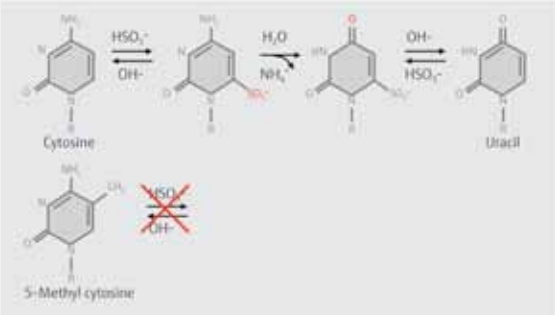
- Completely converts nonmethylated cytosine to uracil in just 45 min
- Enables easy storage of liquid reagents at room temperature
- Combines denaturation and conversion reaction in a single vessel
- Provides multifunctionality with a wide variety of sample types



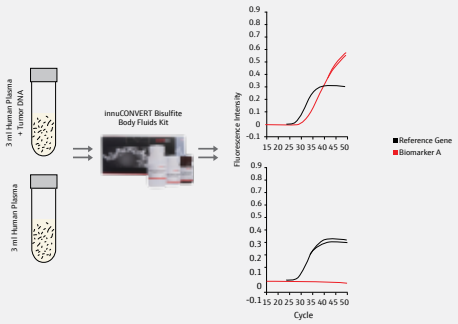
innuCONVERT product family

Save time with fast Bisulfite Conversion

The only effective way to combat a disease like cancer is to understand it. The analysis of DNA methylation has come to play an increasingly important role by providing more meaningful information on tumorigenesis, tumor progression, and metastasis. Most methods for determining DNA methylation are based on a prior bisulfite DNA conversion step that deaminates nonmethylated cytosine to form uracil and leaves methyl cytosine unchanged. This new process transforms epigenetic information into sequences that can be measured using standard methods such as PCR.



A: How bisulfite conversion works



B: Bisulfite conversion of cell-free DNA from large volumes of human plasma

Figure 14: The innuCONVERT Bisulfite Body Fluids Kit was used for processing human blood plasma and human plasma containing DNA from a colorectal tumor cell line (positive for cancer-specific biomarker 14B). The total yield of cell-free DNA and of tumor-specific biomarker A was determined using qPCR. The kit lets users perform bisulfite conversion on cell-free DNA from large volumes of human plasma. This is followed by a purification step. The bisulfite-converted DNA is suitable for use in sensitive tests for DNA methylation tumor markers.

RNA

	Manual	Automated
Bacteria	innuPREP Micro RNA Kit innuPREP DNA/RNA Mini Kit innuPREP RNA Mini Kit innuSPEED Bacteria/Fungi RNA Kit innuPREP RNA MIDI Direct Kit innuSOLV RNA Reagent	
Blood	innuPREP Blood RNA Kit innuPREP Blood RNA MIDI Direct 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 Virus DNA/RNA Kit – IPC96 innuPREP RNA Virus Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP Virus RNA PLUS Kit – KFFLX innuPREP DNA/RNA Virus 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 DNA/RNA Kit – IPC96 innuPREP Virus RNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP RNA Virus PLUS Kit – KFFLX innuPREP DNA/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 DNA/RNA Kit – IPC96 innuPREP Virus RNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP RNA Virus PLUS Kit – KFFLX innuPREP DNA/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 innuPREP RNA MIDI Direct Kit innuSOLV RNA Reagent	innuPREP RNA Kit – IPC16
FFPE/ Paraffin samples	innuPREP FFPE total RNA Kit innuPREP Virus RNA Kit innuPREP Virus DNA/RNA Kit	
Fungal spores	innuSPEED Bacteria/Fungi 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 DNA/RNA Kit – IPC96 innuPREP Virus RNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP RNA Virus PLUS Kit – KFFLX innuPREP DNA/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 innuSPEED Tissue RNA Kit innuPREP RNA MIDI Direct Kit 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 DNA/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 DNA/RNA Kit – IPC96 innuPREP Virus RNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP RNA Virus PLUS Kit – KFFLX innuPREP DNA/RNA Virus PLUS Kit – KFFLX innuPREP AniPath DNA/RNA Kit - KFFLX
Yeast cells	innuSPEED Bacteria/Fungi RNA Kit innuSOLV RNA Reagent	

Plasmid

	Manual	Automated
Bacterial suspension	innuPREP Plamid Mini Kit innuPREP Plasmid Mini Kit Plus innuPREP Plasmid MIDI Direct Kit innuPREP Plasmid Rapid Kit innuPREP Plasmid Small Kit	

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 innuSPEED Bacteria/Fungi DNA Kit smart Bacteria DNA prep (m)	innuPREP Bacteria DNA Kit – IPC16 innuPREP AniPath DNA/RNA Kit – KFFLX smart Bacteria DNA prep (a)
Blood	innuPREP DNA Micro Kit innuPREP Blood DNA Mini Kit innuPREP Blood DNA Midi Kit innuPREP Forensic Kit innuPREP Blood DNA MIDI Direct Kit smart Blood DNA Midi prep (m) innuEASY Direct Amplification Kit A	innuPREP Blood DNA Mini Kit – IPC16 innuPREP Blood DNA Midi Kit – IPC16 innuPREP Blood DNA Mini Kit – IPC96 innuPREP Forensic DNA Kit – IPC16 innuPREP Blood DNA Kit – KFFLX innuPREP Blood DNA Midi Kit – KFFLX innuPREP DNA I Kit – KFml innuPREP AniPath DNA/RNA Kit – KFFLX smart Blood DNA Midi prep (a) LOOXSTER® Blood & Tissue DNA Kit – KFFLX
Bronchoalvolar lavage	innuPREP Mycobacteria DNA Kit	innuPREP Mycobacteria DNA Kit – IPC16
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 – IPC96 innuPREP Virus DNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP DNA/RNA Virus PLUS Kit – KFFLX innuPREP AniPath DNA/RNA Kit – KFFLX PME free-circulating DNA Extraction Kit – IPC 16
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 – IPC96 innuPREP Virus DNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP DNA/RNA Virus PLUS Kit – KFFLX 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 innuCONVERT Bisulfite Body Fluids Kit	innuPREP Virus DNA/RNA Kit – IPC16 innuPREP Virus DNA/RNA Kit – IPC96 innuPREP Virus DNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP DNA/RNA Virus PLUS Kit – KFFLX innuPREP AniPath DNA/RNA Kit – KFFLX PME free-circulating DNA Extraction Kit – IPC16
DNA eluate	LOOXSTER® Enrichment Kit	
Epigenetics	innuuCONVERT Bisulfite-All-in-One Kit innuCONVERT Bisulfite Body Fluids Kit innuCONVERT Bisulfite Basic Kit	
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 innuCONVERT Bisulfite All-in-One Kit	innuPREP FFPE DNA Kit – IPC16
Food/ Food after cultivation	blackPREP Food DNA I Kit	innuPREP Food DNA Kit – IPC16
Forensic material	inuuPREP Forensic Kit	innuPREP Forensic DNA Kit – IPC16
Fruits	innuPREP Plant DNA Kit	innuPREP Plant DNA I Kit – IPC16
Fungal spores	innuSPEED Bacteria/Fungi DNA Kit	

	Manual	Automated
Fungi (fruiting body)	innuPREP Plant DNA Kit	innuPREP Plant DNA I Kit – IPC16 innuPREP Plant DNA I Kit – IPC96
Mycobacteria	innuPREP Mycobacteria DNA Kit	innuPREP Mycobacteria DNA Kit – IPC16
Mycoplasma	innuPREP DNA Mini Kit innuPREP Bacteria DNA Kit	
PCR reactions	innuPREP DOUBLEpure Kit innuPREP DYEpure Kit innuPREP PCRpure Kit innuPREP PCRpure 96 Kit	
Plant material	innuPREP Plant DNA Kit	innuPREP Plant DNA I Kit – IPC16 innuPREP Plant DNA I Kit – IPC96 innuPREP Plant DNA Kit – KFFLX
Saliva	innuPREP Forensic Kit innuPREP MP Basic Kit A innuEASY Direct Amplification Kit A	innuPREP Forensic DNA Kit – IPC16
Seed	innuPREP Plant DNA Kit	innuPREP Plant DNA I Kit – IPC16 innuPREP Plant DNA I Kit – IPC96
Soil samples	innuSPEED Soil DNA Kit	
Sputum	innuPREP Mycobacteria DNA innuCONVERT Bisulfite All-in-One Kit	innuPREP Mycobacteria DNA Kit – IPC16
Stomacher samples	blackPREP Food DNA I Kit	smart Bacteria 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 DNA/RNA Virus PLUS Kit – KFFLX innuPREP AniPath DNA/RNA Kit – KFFLX innuPREP Stool DNA Kit – KF96 & 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 innuEASY Direct Amplification Kit A innuCONVERT Bisulfite All-in-One Kit	innuPREP Swab DNA Kit – IPC16 innuPREP Forensic DNA Kit – IPC16 innuPREP DNA I Kit - KFml innuPREP Virus DNA/RNA Kit – IPC16 innuPREP Virus DNA/RNA Kit – IPC96 innuPREP Virus DNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP DNA/RNA Virus PLUS Kit – KFFLX 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 Mycobacteria DNA Kit innuSPEED Tissue DNA Kit innuPREP MP Basic Kit A smart DNA prep (m) innuCONVERT Bisulfite All-in-One Kit	innuPREP DNA Kit – IPC16 innuPREP Forensic DNA Kit – IPC16 innuPREP Mycobacteria DNA Kit – IPC16 innuPREP Virus DNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP Tissue DNA Kit – KF96 & KFFLX innuPREP DNA I Kit – KFml innuPREP DNA/RNA Virus PLUS Kit – KFFLX innuPREP AniPath DNA/RNA Kit – KFFLX smart DNA prep (a) LOOXSTER® Blood & Tissue DNA Kit – KFFLX
Urine/Urine sediment	PME free-circulating DNA Extraction Kit innuCONVERT Bisulfite All-in-One Kit innuCONVERT Bisulfite Body Fluids 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 Virus DNA/RNA Kit – IPC96 innuPREP Virus DNA Kit – KFml innuPREP Virus DNA/RNA Kit – KFml innuPREP DNA/RNA Virus PLUS Kit – KFFLX innuPREP AniPath DNA/RNA Kit – KFFLX
Yeast cells	innuSPEED Bacteria/Fungi DNA Kit	innuPREP Bacteria DNA Kit – IPC16 smart Yeast 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 themmild 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 innuSPEED blackPREP	innuPREP-IPC16 innuPREP-IPC96 innuPREP-KFml innuPREP-KFFLX	smart prep (a) smart prep (m)	PME LOOXSTER®
Level of automation	Manual Manual with optimization to homogenization	Automated or manual solutions	Automated or manual solutions	Automated (only PME) or manual solutions
Compatibility	–	InnuPure® systems KingFisher systems	InnuPure® systems CyBio® FeliX GeneTheatre CyBio® SELMA Other 1 ml pipetting robots	InnuPure® C16 and C16 *touch* (only PME)
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


LOOXSTER®


Phenol/ Chlorophorm


Polymer Mediated Enrichment


Prep Tubes

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Subjects to changes in design and scope of delivery as well as further technical development!

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