Quality is the difference
High-Performance Analytical Instrumentation

Product Guide
Tradition with innovative power

Analytik Jena has a long history and tradition in developing high quality and precision analytical systems which dates back to the inventions made by Ernst Abbe and Carl Zeiss over 150 years ago. Within the last 20 years our company group has grown to become one of the most innovative manufacturers of analytical measuring technology worldwide.

Technology competence

Analytik Jena has excellent competencies in the fields of optical spectroscopy, sum parameter and elemental analysis. We develop and manufacture premium instruments for:

- Atomic Absorption Spectroscopy (AAS)
- High-Resolution Continuum Source Atomic Absorption Spectroscopy (HR-CS AAS)
- Mercury analysis
- UV/Vis/NIR spectroscopy
- TOC/TN analysis, AOX/EOX/TOX/POX analysis
- C/N/S/Cl elemental analysis
- Determination of the antioxidant capacity

Along with comprehensive laboratory software solutions, the company’s broad product range consists of device-specific accessories and consumables for laboratories.

Premium Quality „Made in Germany“

The name Analytik Jena stands for highest standards of quality. Various R&D and production sites throughout Germany ensure reliable state-of-the-art technology, continuous improvement and development for highly efficient and practical analysis systems.

Our aim is to provide the most comfortable and reliable instruments for diverse analytical tasks. The use of selected, certified components guarantees the absolute precision and outstanding analytical performance, the robustness and durability of Analytik Jena instruments.
Analytik Jena – Outstanding Customer Support

Networked worldwide

Satisfying our customers’ demands and needs is our top priority. We offer round-the-clock dedicated customer care and support services, enabling you to exploit the full potential of our high-quality products.

Wherever you are – technical service and international sales support on site are a matter of course. Our worldwide service network guarantees close proximity to our customers, fast response times, short travel times and low costs to you.

Always by your side

Whatever your requirements are – you can count on our expertise. We will also support you in the qualification procedures and the system validation for compliance with specific standards and guidelines in your business.

Our well-trained, globally active specialists offer excellent training programs, be it individualized hands-on user training or on-site workshops or seminars, road shows and webinars on specific topics.

Application development and support

We provide comprehensive advice on various analytical methods and support you in the selection of the appropriate technology. We are on your side, ready to assist you in your projects with our experience and know-how in analytics. We support you in carrying out special applications. In close collaboration with you, we also develop analytical method packages which are explicitly tailored to your requirements.

Analytik Jena has established competence centers all over the world – certainly also in your vicinity. Fully equipped laboratories allow for comprehensive support on technical and application issues and intensive training possibilities on our analytical instruments.

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Atomic Absorption Spectrometer (AAS)

**novAA® | ZEEnit®**

A new generation for the whole range of AAS

The AAS series novAA® & ZEEnit® combine high performance, versatility, automation, reliability and robustness.

**novAA® & ZEEnit® at a glance:**
- 8 lamp changer for maximum automation and sample throughput
- Fully automatic gas box and automatic burner height adjustment
- Single and double beam optics
- Integrated highend vision tool for best observation of the operations
- Fully automated optimization routines
- Analysis of liquid and solid samples

**novAA® 350** – Fully automated AAS for flame and hydride technique with D₂ background correction  
**novAA® 400 P** – Compact AAS for flame, hydride and graphite technique with D₂ background correction

The ZEEnit® P series combines an outstanding graphite furnace concept with the most powerful and latest generation of Zeeman effect background correction with variable magnetic field strength.

**This is unique:**
- 2Field Mode – maximum sensitivity
- 3Field Mode – expansion of the linear working range
- Dynamic Mode – automatic adaptation to varying element concentrations without dilution

The strongest Zeeman-AAS on the market!

**ZEEnit® 650 P** – High-performance graphite furnace AAS with Zeeman- and D₂ background correction  
**ZEEnit® 700 P** – High-performance tandem AAS for flame, hydride and graphite technique with Zeeman- and D₂ background correction
A vision becomes reality

contrAA® series is the start of a new generation in AAS, which finally closes the gap between ICP-OES and AAS. All systems, contrAA® 300, contrAA® 600 and contrAA® 700, combine intelligent design with premium functionality and convincing performance:

- Just one light source for all elements
- Simultaneous, powerful background correction
- Fast, easy, economical

With only one light source, the Xenon lamp, the instrument is ready to measure all elements and at all available wavelengths from 185 – 900 nm.

Previously the single method measurement predominated, now the sequential multi-element routine in AAS has become standard. Patented technology enables the spectrometer to change rapidly from line to line and measure the elements in optimized measurement sequences.

Expanded application range

Evaluation of atom lines and molecular bands allows the analysis of additional elements like non-metals. That is a further innovation.

Unique background correction

The contrAA® is the first AAS capable of separating broadband and spectral background effects. Fully automatic background correction routines use the available reference pixels and enable realtime simultaneous correction.

3D Spectra – a new dimension

The 3D Spectra, absorbance versus time and wavelength, offers unimagined possibilities for parameter optimization. The HR-CS AAS user can now identify the cause of interferences and eliminate them, as required.
Mercury/Hydride Systems

Multiple solutions for special challenges

The combination of flow injection and batch mode at the various automation levels guarantees convenient handling and precision as well as efficiency during the analysis of hydride forming elements and mercury with the cold vapor technique.

The traditional way – atomization in the electrically heated quartz cell!
The future-oriented way – hydride formation coupled with electro-thermal atomization in the graphite tube (HydrEA)!

- Flow Injection Mode: fully automated mode with optimized gas/liquid separator and membrane drying system ensures high sample throughput
- Batch Mode: special designed reactors for large sample volumes, for foaming samples and low element concentrations
- Enrichment Mode: integrated gold collector unit for the enrichment of mercury

HS50 – Simple Batch Mode, flame heated cell
HS55 – Batch Mode, electrically heated cell (with or without enrichment unit)
HS60 – Fully automated system with Flow Injection and Batch Mode, electrically heated cell (with or without enrichment unit)

Direct Solid AAS

solid AA®

Intelligent solution for direct solid analysis

Solid and paste like samples, as powders, cream or viscous oils can be analyzed directly in the graphite furnace.

In direct solids analysis, the decomposition of the sample matrix by means of an acid digestion is replaced by the temperature program of the graphite furnace.

solid AA® at a glance:

- Analysis of the original sample
- Wide measurement range – no dilution required
- Analysis of small sample quantities – solid AA® is a micro-method
- Avoiding harmful reagents – chemical waste kept to a minimum
- Simple handling – samples are simply placed on the sample carrier and analyzed directly
- Fast results

All graphite furnace systems by Analytik Jena can be upgraded with the solid AA® technology:

SSA 6 — Manual solid sampler
SSA 600 — Fully automated solid sampler with integrated microbalance
Liquid dosing unit — Upgrade kit for dosing liquids automatically on the SSA 600

SSA 6

Liquid dosing unit
Intelligent AAS Accessories

More than just automatic dosing!

Flexibility and efficiency are provided by intelligent autosamplers:

- Fully automatic routine analysis of standards and samples
- Unique intelligent dilution functions
- Clean control to prevent contamination of subsequent sample
- Automatic dosing of modifiers
- Automatic depth adjustment

Intelligent accessories for flame analysis

The Segmented Flow Star (SFS) for injection mode operation convinces by:

- Easy operation of samples with high salt, high sugar or acid content
- Stable burner conditions guaranteed by continuous rinsing and constant flame temperatures
- Automatic metering of smallest sample volumes (µl range)

The „Scraper“, an automatic, software-controlled cleaning device for the nitrous oxide burner head, guarantees a continuous and reproducible operation over a long period.

Our instruments for optical spectroscopy combine proven Carl Zeiss technology with modern, innovative solutions.

We are the only company that provides a long-term warranty of 10 years for the high-performance optics.
Mercury Analysis

mercur

Trace analysis with best analytical certainty

Thanks to its excellent detection limit and its wide linear measuring range, atomic fluorescence spectrometry is the method of choice in mercury analysis up to ng/L level. Using the advantages of the cold vapor technique to separate the analyte from the matrix and of atomic fluorescence as powerful detection method, interferences and matrix effects are almost completely eliminated.

AAS has the advantages of a greater degree of robustness with complex reagent mixtures. mercur DUO makes it possible to integrate the techniques of AAS and AFS into a single instrument and to adapt specific application tasks.

mercur at a glance:

- Highly automated and fast – thanks to continuous flow injection with or without autosampler and the unique FBR routine (Fast Baseline Return)
- Safe – due to use of a bubble sensor, a specially optimized drying membrane and cascade enrichment
- Efficient – due to automated, intelligent gas-liquid control, ensuring minimum reagent consumption and short measurement times
- Self Check System (SCS)

Various configurations and detection techniques are available for the whole range of mercury analysis compliant with EPA and EN/ISO norms.

mercur and mercur PLUS* – Mercury analyzer based on cold vapour technique using Atomic Fluorescence (with or without enrichment)
mercur AA and mercur AA PLUS – Mercury analyzer based on cold vapour technique using Atomic Absorption (with or without enrichment)
mercur DUO and mercur DUO PLUS* – Tandem mercury analyzer based on Atomic Fluorescence and Atomic Absorption (with or without enrichment)

* Two gold collectors are available for single or cascade enrichment.

Microwave Digestion System

TOPwave®

TOPwave® provides a wide range of applications. Its patented sensor concept and intelligent design enable reaction control and operating safety at the highest level. Effective sample preparation is achieved by facilitating high sample throughput through short cycle times and high capacities. Another crucial factor is safety. Working under exceptional conditions requires an absolutely reliable system and an experienced partner.

- High sample throughput
- Minimum number of consumables
- Sensor concept which documents all digestion parameters of each sample thanks to wireless optical temperature control with RTM, wireless optical pressure control with RPM and SMART reaction control
- Self Check System (SCS)
Getting the antioxidant picture

PHOTOCHEM®

PHOTOCHEM® offers a simple, rapid and accurate method for the determination of lipid and water soluble antioxidant capacities using photochemiluminescence.

The method combines the very fast photochemical generation of free radicals with the highly sensitive detection in nmol range.

PHOTOCHEM® at a glance:

- Determination of lipid and water soluble antioxidant capacities on a single system
- The method “photochemiluminescence” is characterized by high sensitivity, speed and accuracy
- Intuitive software navigation and easy operation
- Extremely short measuring times (20 sec - 3 min)
- Independent of pH and temperatures
- Needs only a few µl of the sample
- Ready-to-use kits
- Simple handling: sampling, measurement and rinse cycles are automatic
- Compact ergonomic design with a small footprint
UV/Vis Spectrophotometer

SPECORD® | SPEKOL®

UV/Visible spectrophotometer series set new standards

The SPECORD®/SPEKOL® series covers the range from low budget-priced, single-beam to high-performance real double-beam instruments with Cooled Double Detection. They also include high power diode-array systems for simultaneous high-speed measurement and spectrophotometer using Split-Beam-Technology. All our powerful spectrophotometers operate in the spectral range of 190-1100 nm. A versatile software provides maximum efficiency and offers specific tailor-made software packages. The extensive range of accessories enables flexible and convenient operation in various fields of application.

SPECORD® 50 PLUS – Double-beam spectrophotometer with Split-Beam-Technology (SBT)
SPECORD® 200 PLUS – Double-beam spectrophotometer with fixed spectral bandwidth
SPECORD® 210 PLUS – Double-beam spectrophotometer with 5 variable spectral bandwidths
SPECORD® 250 PLUS – Double-beam spectrophotometer with 5 variable spectral bandwidths and double monochromator

SPECORD® PLUS

Routine analysis or special applications – with the double beam spectrophotometers of the SPECORD® PLUS series you are well prepared for all requirements.

SPECORD® PLUS series at a glance:

- Automatic accessory recognition
- Large, easily accessible sample compartment
- Comprehensive software including numerous specific tools for individual applications
- Extensive method collection
- "Device Check" software – a diagnostic tool
- Self Check System (SCS)
**SPECORD® S**
Diode Array Systems

SPECORD® S 600 combines the precision and convenient handling needed in laboratories with speed, reliability and superior optical performance.

**SPECORD® S 600 at a glance:**
- High precision diode array systems
- Excellent spectral properties, fast measurement of complete spectra in less than 12 milliseconds
- High throughput cell carousel with 52 positions available
- Self-adjusting photometric linearity, automatic stray light correction, open sample compartment

**SPEKOL®**

SPEKOL® combines simple operation with extensive application options. A compact construction and few moving parts ensure a high level of operational availability. As a single-beam the photometer meet a wide range of demands. Thanks to preprogrammed methods, the SPEKOL® instrument is especially capable of mastering routine tasks.

**SPEKOL® at a glance:**
- Low maintenance requirements
- Compact and space-saving
- Robust and durable
- Self Check System (SCS)

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**SPECORD® S 600**
Diode array spectrophotometer for UV to NIR range (190-1100 nm)

**SPEKOL® 1500**
Single-beam spectrophotometer with graphical display
multi N/C® — High Performance TOC Analyzer!

The multi N/C® series offers the optimum solution for every application. The parameters TOC, NPOC, POC, TC, TIC and TN$_b$ can be measured quickly, easily and without any conversion in liquid and solid samples.

Working with multi N/C® series analyzers guarantees compliance with the valid national and international standards, such as: ISO, EN, DIN, EPA, ASTM, FDA and pharmacopoeias.

multi N/C® at a glance:

- Wide measurement range – also without sample dilution: precise detection due to high-quality Focus Radiation NDIR-Detector® for TOC, the chemiluminescence-detector (CLD) or the solid state chemodetector (ChD) for TN$_b$
- VITA® Flow Management System: for stable device performance and highly reproducible analysis results
- Easy Cal®: easy calibration with just one standard for the most different applications, including long-term stability
- Auto-protection: cleaning of effective measuring gas and monitoring protect valuable system components
- Reliable oxidation: high-temperature combustion (up to 950°C) or High Power UV reactor
- Variable injection techniques and volumes: valve-free direct injection or flow injection
- Suitable for simultaneous TN$_b$ determination
- Double furnace technology – the ideal combination for water and solid samples without the need of an additional furnace
- Self Check System (SCS)
multi X® – AOX/TOX Analyzer

Whether fastest AOX routine analysis in vertical operation mode or reliable determination of the smallest EOX trace concentrations in horizontal operation mode, the double furnace technology of the multi X® 2500 allows you to select the best combustion mode for your application.

The intelligent software multiWin®, the fast changeover between column and batch method, and the user-friendly design ensure outstanding ease of use and efficiency. Diverse automatic sampling systems offer convenient and uniquely flexible operation. The system greatly minimizes idle time and increases the throughput of AOX samples – you remain flexible and cost-effective.

multi N/C® – High sample throughput

The available autosamplers with integrated sample homogenization (stirring) – offer automatic acidification and purging features for diverse requirements in TOC analysis. Time-optimized processes, such as parallel analyzing and purging, increase the sample throughput.

Solid analysis at the highest level

With the separate solids module HT 1300, solid samples can be digested at up to 1300°C. Using additional substances, even higher temperatures up to 1800°C are possible.
Determining carbon, sulfur, and chlorine from solid samples is not a problem! The multi EA® 4000 convinces with its ease of use, analysis flexibility, and particularly excellent instrument stability and precision.

The parameters TS, TC, TX, TOC, TIC, EC, and BOC are determined quickly and easily in organic and inorganic solids. Minimum maintenance effort, maximum operating time, low operating costs and an absolutely reliable analyzing and measuring technique ensure each process step is as effective and efficient as possible.

Unbeatable in waste analysis

multi EA® 4000 offers a unique combination of elements and parameters to be analyzed. Therefore it is unchallenged in waste analysis! The modular design of the device also allows expanding of the application options from one element to fully automated multi-element analysis.

Fully automated TOC determination – TIC Solids Module

Quicker and easier than ever before — TOC and TIC parameters determination from one single sample in one analysis step only! The TIC Solids Module “automatic” enables the automatic determination of Total Inorganic Carbon (TIC) in solid samples. This way it is also possible to automate determination of Total Organic Carbon (TOC) either by difference or direct method. Additional sample pretreatment like acidification is not necessary!

multi EA® 4000 at a glance:

- It is the ideal partner for your solids analysis
- Offering ease of use and flexibility
- Enhanced analysis precision and reliability
- Minimal operating costs and low maintenance effort
multi EA® 5000 – C, N, S, Cl trace analysis in gaseous, solid and liquid samples

The multi EA® 5000 is an universal talent to be used in various fields of application for the determination of C, N, S, Cl and also TOC, EOX and AOX/TOX. The globally unique double furnace technology offers fast and optimum adaptation to the sample matrix and analysis standard with minimal effort.

Its unique modular principle allows an individual configuration of the system. You are able to adapt the multi EA® 5000 to your needs and requirements.

multi EA® 5000 at a glance:

- Multi-application, liquid, paste-like, solid, gaseous and LPG samples
- Multi-element, C, N, S and Cl as well as TOC, EOX and AOX/TOX
- Extended measuring range from ppb to the percentage range
- Preset standard methods
- Conformity of standards such as ASTM, EPA, DIN, ISO, EN etc.
- Flame sensor technology with self-learning function for matrix-optimized sample decomposition
- Double furnace technology vertical and horizontal mode in a single instrument
- Flow Management System for stable instrument performance and accurate analysis results
- Multi-purpose combustion tube for all standard applications
- Multi-matrix autosampler for the fully automatic determination of solid and liquid samples in vertical or horizontal furnace mode
- Application-optimized sampling systems for safe and reliable analysis of pressurized and none pressurized gases and LPG samples
- Self Check System (SCS)
Subject to changes in design and scope of delivery as well as further technical development!
Life Science Product Guide

Kits and Reagents
Nucleic Acid Extraction
Molecular Diagnostics
Mobile Diagnostics
Instruments
Consumables/Accessories
Isolation and purification of nucleic acids

Analytik Jena offers an extraordinary wide range of purification and isolation kits for nucleic acids, all made in Germany. Those are based on own technologies and patents. It ranges from manual to automated solutions for DNA/RNA extraction of most starting materials. Therefore the isolation procedure combines a very fast lysis step with a high efficient binding of the nucleic acids either to mini and MIDI Spin Filters or to magnetic particles. All methods are optimized to accordant type of starting material with different amounts and result in elution of high quality DNA and/or RNA.

- Products for in-vitro diagnostics (CE-IVD marked)
- Genomic DNA
- Total and micro RNA
- Viral and bacterial nucleic acids
- Plasmid DNA
- Cleanup products for PCR reactions and agarose gels
- Forensic applications
- Custom made products

**Procedure:**
1. Lyse the starting material
2. Bind the nucleic acids to the Spin Filter
3. Wash the bound nucleic acids
4. Elute the nucleic acids

**Kits for manual nucleic acid extraction**

**innuPREP Kits**
- Standardized nucleic acid purification
- Reliable, efficient Spin Filter technology
- Extractions and purification systems for universal use
- DNA/RNA isolation, PCR cleanup and plasmid extraction
- For each material the right solution: tissue, whole blood, cells, swabs, forensic samples, plants, bacteria, virus, stool samples...

**blackPREP Kits**
- Extraction kits for complex starting materials
- Fast, effective isolation of DNA and/or RNA
- Specially adapted products for a particular starting material
- High quality and yield of final nucleic acids
- Simplified and optimized protocols for e.g. pieces of rodent tails, swabs, food, powder, spores...
Automized nucleic acid extraction using InnuPure® systems

**InnuPure® C16 and InnuPure® C96**

The InnuPure® devices are flexible and efficient extraction systems for fully automated isolation and purification of nucleic acids. The instruments, which were developed and manufactured in Germany, can process a wide range of different starting materials and amounts. Both are founded on a unique liquid handling method and the proven principles of purification based on magnetic particles. Labor-intensive sample lysis steps are no longer necessary, as they are now incorporated into the automated extraction process in keeping with the starting material. The nucleic acids to be isolated are then adsorbed onto magnetic or paramagnetic particles whose surfaces have been specially adapted for this purpose. The required extraction chemistry has been optimized for the application at hand, allowing users to isolate high yields of very pure nucleic acids.

- Fully automated nucleic acid extraction
- Based on proven magnetic particle separation
- Flexible and efficient for varying starting materials and volumes
- Pre-programmed extraction protocols for optimal reproducibility
- Automatic transfer of eluates into separate elution vessels for direct storage
- Fast, reliable and efficient without cross-contamination
- Optional available: UV lamp for easy decontamination of sample room
- Tight desktop devices for any lab bench
- Extraction of high quality nucleic acids
- Pre-filled, sealed reagent plastic for minimum hands on time
- Optimized lysis and efficient removal of residual ethanol due to heated position
- Adjustable elution volumes
- No carryover of magnetic beads

### Kits for automated nucleic acid isolation

For the InnuPure® systems a variety of different nucleic acid extraction kits are available. Based on the proven separation of nucleic acids bound to magnetic particles, excellent results with high purity and yield are guaranteed. This ensures the final product to be free of proteins, nucleases and other contaminants and to be used immediately for subsequent applications. Both instruments make sure that time is saved significantly and manual interventions are reduced to an absolute minimum. The extraction automats operate all pipetting and mixing steps including in the routine.

<table>
<thead>
<tr>
<th>InnuPure® C16</th>
<th>InnuPure® C96</th>
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<tbody>
<tr>
<td>Tip volume</td>
<td>1000 µl</td>
</tr>
<tr>
<td>Number of samples</td>
<td>Up to sixteen samples in parallel and single sample handling</td>
</tr>
<tr>
<td>Reagents</td>
<td>Pre-filled Reagent Plates or Strips are pierced by device</td>
</tr>
<tr>
<td>Plastic transfer</td>
<td>Sample Tray is moved automatically</td>
</tr>
<tr>
<td>Device operation</td>
<td>Easy and convenient to use thanks to the portable HiD-Pro 320 user interface</td>
</tr>
</tbody>
</table>

- Optimized to magnetic particle based isolation of nucleic acids
- Including all needed reagents and plastic ware for direct extraction
- Minimal hands-on time required
Homogenization

SpeedMill PLUS | Powerful and high efficient homogenizer

SpeedMill PLUS is the perfect homogenizer for various starting materials. Through the patented process, the substantial sample warming that occurs with other homogenizers is prevented. So the instrument can be operated continuously. For the novel sample holder different temperature ratings for efficient sample cooling are freely selectable due to the storage down to –40 °C. The often problematic handling of liquid nitrogen or dry ice is thus a thing of the past. Additionally the SpeedMill PLUS convinces through intuitive handling by modern touch sensors and the extra large display. Linear or cyclic protocols can be freely programmed and saved. SpeedMill PLUS is a small and smart tabletop device for fast preparation of up to 12 samples.

- 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
- Wide product range of Lysis Tubes allow individual upgrade of the system

Kits and Lysis Tubes for homogenizers

All innuSPEED Kits are optimally adapted for sample processing using homogenizers (e.g. SpeedMill PLUS or SpeedMill P12) and hence, permit extremely rapid and very efficient nucleic acid isolation from various starting materials. These kits contain special Lysis Tubes with application specific beads, which are used for mechanical disruption of the sample, as well as for proteolytic lysis. Following the DNA or RNA is bound to a Spin Filter membrane, washed and finally eluted. Both the yield and quality of the isolated nucleic acids are excellent. The different innuSPEED Lysis Tubes are additionally available as single tubes for direct application using all common standard homogenizers. Those Lysis Tubes are all 0.5 or 2.0 ml screwed-cap vessels containing beads, which are different in size, grade of hardness and properties of material.

Generally it is essential:
the smaller the sample, the smaller the bead.
BioShake series | High-Speed mixer and thermal mixer

- Fast shaking and effective mixing of smallest samples with up to 3,000 rpm
- For microplates, PCR plates, deep well plates, tubes and glass vials
- Customized adapters available on request
- Vortex and Short-mix function
- 3D-Shake-Control: rapid and gentle mixing in orbits for sensitive samples
- Anti-Spill-Technology: controlled planar mixing
- Anti-Vibration-Technology: outstanding smooth running conditions without vibration and noise
- Compact and lightweight aluminium design

The BioShakes are ultra-fast micro mixers with patented 3D-Shake-Control and Anti-Vibration-Technology. This supports accurate control of a wide range of SBS-sized 96, 384 and 1536 well microplates, tubes and glass vials.

The BioShake XP allows for the first time very precise and efficient mixing on a microliter scale for a large range of applications. Assays in microplates or reaction tubes can be realized fast, save and automatically. Additionally the mixing speed can be adjusted from 200 up to 3,000 rpm. Using direct control keys eases up the programming of the BioShake XP.

ScanDrop® | Nano-volume spectrophotometer

- Measurement of microliter volumes down to 0.3 µl
- 16 channels per CHIPCUVETTE® with fully automated measuring of up to 32 positions at path lengths of 0.1 and 1.0 mm, respectively
- Automated sample positioning (CHIPCUVETTE®)
- Measuring position for 10 mm standard cuvettes
- Usage of TrayCell®: single measurements of small samples at path length of 0.2 mm or 1.0 mm
- No evaporation, no cross-contamination and no carryover effects (even for recovery of samples)
- High-precision optics with aberration-corrected grating and Split-Beam-Technology

The ScanDrop® combines easy measurement of microliter volumes down to 0.3 µl with a standard measuring position for 10 mm cuvettes. The modular system is available as a single instrument for small sample volumes, as a standard 10 mm position instrument or as a combination of both. Unlike other systems, no warm up time is necessary. The instrument is ready to use almost as soon as it is switched on thanks to a long-life xenon flash lamp. Furthermore the Split-Beam-Technology provides high stable and reproducible measurement results. One additional highlight is the portable HID-Pro 320 user interface with a 5.7” color touchscreen, which turns the ScanDrop® into a fully functional and space-saving stand-alone system. Next to the 10 mm standard position the CHIPCUVETTE® is convenient and easy to use due to fully automatic movement. Up to 32 measurements can be performed during one run at which a double determination of one sample at two different path lengths becomes possible. This feature offers a matchless advantage especially if sample concentrations are unknown.
### GeneTheatre | Automated pipetting routines: simple and fast

The use of Analytik Jena’s GeneTheatre greatly simplifies all pending pipetting and dispensing tasks in a laboratory and allows for full automation. In addition to microplate handling, these highly flexible workstation also accommodates the use of strips, single vessels and glass slides. Users may choose from any of 12 desk positions in the standard format 96 well SBS, making it easy to adjust the systems to any conceivable application.

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<tr>
<th>Application data</th>
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<tr>
<td><strong>Volume range</strong></td>
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<tr>
<td><strong>Pipettes</strong></td>
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<tr>
<td><strong>Desk positions</strong></td>
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<tr>
<td><strong>Max. tube height</strong></td>
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<table>
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<tr>
<th>Specials</th>
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<tbody>
<tr>
<td>Users may select from different waste box systems for used tips</td>
</tr>
<tr>
<td>Integrated UV lamp provides ideal protection from contamination</td>
</tr>
<tr>
<td>Accommodates use of external equipment, such as mixers, thermal mixers or vacuum chambers</td>
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<tr>
<th>Examples of application</th>
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<tr>
<td>Preparing whole PCR and real-time PCR batches</td>
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<tr>
<td>Reformating microplates in the 96, 384 and 1536 format</td>
</tr>
<tr>
<td>Dispensing or distributing reagents</td>
</tr>
<tr>
<td>Running microarray applications with freely selectable spot layouts and dots (starting at 0.5 µl)</td>
</tr>
<tr>
<td>Performing mother-daughter plate transfers and single-tube transfers (0.2 – 2.0 ml)</td>
</tr>
<tr>
<td>Dilution series and sample pooling</td>
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</table>

### SELMA 96/384 | Semi-automated pipetting system

- Universal & flexible liquid handling desktop system
- Modern servomotors provide fast and quiet operation
- Highly consistent and reproducible results
- Free definable sample configuration within 96 well, 384 well or 1536 well microplates, other grids applicable as well
- Pipetting, dispensing and mixing functions
- Closed, robust plexiglass housing with a front door for easy cleaning
- Piercing function
- Intelligent waste box system
- Soft Touch Adapter ensures trouble free and precise dry pipetting

| SELMA 96/384 | Semi-automated pipetting system |
|------------------|
| Semi-automatic 96- or 384-channel instrument with a minimal footprint |
| Available in various volume ranges from 0.5 µl up to 1000 µl |
| TipTray technology: Proven, patented tip sealing concept makes changing tips easy and secure |
| Touchscreen for easy, intuitive operation |
| External equipment such as mixers, heating and cooling adapters, vacuum chambers, etc. can be used |
| Error-free, reproducible results with 96 or 384 parallel working pistons with automatic positioning to different heights |
| Two working positions for microplates and reservoirs |

Constantly moving your thumbs up and down to pipette solutions is the defining feature of day-to-day lab work - along with arm and joint pain. The SELMA 96/384 are semi-automated pipetting systems, which process liquid handling steps fast, precise and with a high reproducibility. Equipped with 96 or 384 tips working in parallel, 96 and 384 well microplates can be filled in the twinkling of an eye. Making painful tendonitis a thing of the past. All movements and processes, which are important for high precision as well as for reproducibility, are achieved by reliable motors. This ensures always excellent and constant results.
Standard and rapid PCR thermal cycler

**SpeedCycler² | Ultra high-performance thermal cycler**

- Modern thermal cycler for rapid PCR
- Ramping rates of up to 15 °C/sec, adjustable in steps of 0.1 °C/sec
- SAC (Self-Adapting-Container) technology delivers outstanding heat transfer
- Low-Profile-Rapid (LPR) blocks for fastest ramping and lowest dead volume
- Standard-Profile-Rapid (SPR) blocks for 0.2 ml standard consumables
- Optimized for low reagent consumption and reduced running costs
- Controlled by PC or portable user interface HID-Pro 320
- Thermal blocks made of massive sterling silver with a gold layer

Fastest on the market! The SpeedCycler² combines flexibility and speed for a real rapid PCR. Three different models are available for best adaption to the accordant application. True heating and cooling rates of up to 15 °C/sec and up to 10 °C/sec, respectively, are realized. A smaller footprint, the modular design, the external control panel and, last but not least, ultra high-performance distinguishes the SpeedCycler² from other available instruments.

**FlexCycler² | Adapts to your requirements**

- Intuitive operation and extra-large VGA display for easiest programming
- Quick-X-Change of thermal blocks with automatic block detection
- Mono and Twin Blocks available with and w/o gradient feature
- New, comfortable gradient programming concept (linear gradient)
- Twin blocks are controlled independently
- High Performance Smart Lid (HPSL) for always optimal pressure
- Excellent temperature homogeneity of up to ± 0.2 °C
- Very low power consumption (max. 600 W) and noise emission
- GLP compliant documentation of PCR runs
- USB A and USB B ports for easy data exchange and PC control respectively

FlexCycler² – the flexibility is the unique selling proposition of this thermal cycler. With its choice of Mono or Twin Blocks and the optional gradient function, it’s perfect for any kind of PCR application. Block exchange is a matter of seconds without any tool needed. The thermal blocks are made of an aluminium alloy that optimizes energy transfer and contains High Performance Smart Lids (HPSL), which ensure a constant contact pressure independent of used plastics. To meet each individual requirement, 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 high temperature accuracy. Its extra-large VGA display, user-friendly interface and comprehensive software functions make operations easy to understand.
qTOWER | Quantitative real-time rapidPCR

The real-time thermal cycler qTOWER sets new standards for speed on the qPCR market. Based on the established rapidPCR, the qTOWER is up to 10 times faster than commonly available systems, achieving heating rates of up to 12 °C/sec and cooling rates of up to 8 °C/sec. Complete quantitative PCR runs can be performed in less than 25 min. The significant reduction of reaction volumes (down to 5 µl) is yet another highlight, as is the exceptional savings (up to 75%) of expensive real-time reagents. Consumables have been optimized, making batches up to 20 µl possible and completely matching comparable instruments with its maximum capacity of 96 samples. The patented fibre-optic system at the heart of qTOWER guarantees detection of homogenous fluorescence signals across the whole microplate. The qTOWER can be equipped with up to four different measuring channels, which makes the device very flexible and adaptable for various applications. Therefore user can choose from ten high-resolution Color and FRET modules.

qTOWER 2.0/2.2 | Definition of a new standard

- Quantitative real-time PCR in proven 96 well SBS standard format
- State-of-the-art ramping rates of up to 5.5 °C/sec
- Optimized for volumes of 10 – 60 µl
- Available with or without gradient function (max. temperature gradient span of 40 °C)
- Individual configuration with up to 6 different measurement channels
- Choice amongst 11 high-resolution, retrofittable Color or FRET modules
- Wide variety of different evaluation methods

Featuring a striking, modern design, this system allows quantitative PCR in an established 96 well SBS standard format. The qTOWER 2.0 and 2.2 offer an open platform for any kind of real-time PCR plastic materials, such as 0.2 ml single tubes, 8 well strips or 96 well microplates. The high quality silver block ensures an outstanding level of temperature homogeneity of 0.2 °C along the whole block and is therefore ideally suited for all real-time PCR applications. In combination with the optional gradient function, different assays can be optimized with minimum effort. The qTOWER 2.0 and 2.2 are equipped with a patented, fibre-optic shuttle system for the best possible excitation and detection of a variety of known fluorescence dyes.
UV Cabinets and Workstations

PCR UV Cabinets and Workstations | Ideal for your sample preparation

- Up to three built-in shortwave (254 nm) UV tubes for decontamination between experiments
- Timer sets UV exposure up to 12 h
- Safety shut-off switch automatically turns the UV light off when door is opened
- Keylock prevents accidental exposure of samples to UV
- Unique, easy-clean antimicrobial coating on the stainless steel and aluminum surfaces
- Hinged door flips up for easy access to the work area
- Built-in power outlets for operation of equipment inside the work area
- Two shelves allow placement of small equipment
- Makrolon® panels block UV below 400 nm
- With or without three-stage HEPA filter
- Different sizes: Cabinet or Workstation to meet each individual need

Analytik Jena offers a complete line of PCR UV hoods, which use shortwave ultraviolet to control unwanted transfers of nucleic acids. The systems bring together UV irradiation, antimicrobial-coated stainless steel and aluminum to create a dual-attack environment against PCR contamination.

In addition to standard PCR UV² models, PCR UV³ HEPA systems with integrated three-stage filters are available. 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.

Two styles are available:
The standard PCR UV and the PCR UV HEPA systems.

Two sizes are available:
The cabinet features a smaller work area than the workstation.

Makrolon® is a registered trademark of Bayer AG
Mobile diagnostics

MobiLab | Your Lab to go

- All in one analysis platform
- Combines nucleic acid extraction, thermal mixer, rapidPCR thermal cycler and detection unit
- Robust casing and up-to-date touchpad are optimized for outdoor use and allow easy cleaning and disinfection of the device
- Indoor use on a surface of a sheet of DIN A4 paper possible as well to replace an entire laboratory
- 4-line display provides user-friendly application wizard
- Ready-to-use kits for simplest handling
- Including battery pack for real mobile analysis

MobiLab for pathogen detection on-site: Simple, robust and mobile are the key words for the entire design concept. The device combines a fully equipped laboratory, including nucleic acid extraction, high-speed thermal mixer, PCR thermal cycler and detection in a suitcase. Based on the rapidPCR technology complete pathogen diagnostics are realized in just one hour. Consequently the MobiLab is unique in terms of flexibility and also in relation to the speed in which the results are achieved. Special plus: It already enables even persons with a non biological background to work on molecular diagnostic questions.

Kits for MobiLab

- Quick and easy on-site detection
- All inclusive: DNA extraction, amplification/hybridization and final detection on a lateral flow strip (LFS)
- Highly specific and sensitive detection
- Ready-to-use assays with optimized, wizard-based protocol and step-by-step instructions on MobiLab

Developed for performing mobile, on-site testings, all MobiLab assays give users a a fast, highly specific tool for human diagnostics, for detecting food pathogens and for environmental analysis. This easy-to-use kits completely eliminates the need not only for additional equipment and consumables, but also for quantitative pipetting. The kits contains nucleic acid extraction reagents and all PCR components in a preformulated, stable form. Also included are novel reaction cartridges in which the entire amplification/hybridization and detection processes occur. Final detection is highly sensitive and takes place on a test strip within the reaction cartridge. Because whole process is performed in a closed system, operator error and contamination during the testing can be reduced to an absolute minimum.

Reaction cartridge left:
one band (control line) = the sample tested negative

Reaction cartridge right:
two bands (control and test lines) = the sample tested positive
Mobile diagnostics

**ePaTOX II | Fast, sensitive, chip-based detection of toxins and pathogens**

- Identification and quantification of toxins and pathogens
- Fully automated, stable, electrochemical detection on microarrays
- Plug & play operation using disposable one way chipsticks
- User-friendly operation and data analysis, incl. alarm feature
- Robust housing for mobile NBC detection systems
- Samples are easy to handle

The ePaTOX II is a versatile instrument for highly sensitive, chip-based detection of proteins, toxins, nucleic acids and other biomolecules in a wide range of samples. Suitable for use in the laboratory, this instrument can also be integrated into mobile detection systems. Operators are able to use the instrument after only a brief introduction thanks to uncomplicated, ready-to-use kits and user-friendly control/analysis software. Full detection of nucleic acids or proteins typically takes 8 or 20 minutes, respectively. Furthermore, the modern electrochemical detection principle allows a high sensitive analysis and the resulting detection system is immune to the effects of turbidity and other sources of optical interference.

**Kits for ePaTOX II**

- Lowest limit of detection (approx. 0.5 ng/mL)
- Ready-to-Use Kits including chipsticks and reagents for easy and fast detection
- Multiplex analysis of toxins or pathogens within one sample
- Automated signal detection and result analysis by user-friendly software

Simultaneous analysis of multiple electrode positions is the test principle underlying an array-based, electrical biochip. For detection to occur, the target molecules must bind to specific receptor molecules immobilized on the chip, thereby enabling detection of multiple biomolecules in parallel within a single sample. The ePaTOX Kits offers extensive, group-specific detection options for toxins (e.g. ricin, staphylococcus enterotoxin B and botulinum toxin A, B and E) and can be used to analyse pathogens after appropriate DNA extraction and PCR (e.g. Bacillus anthracis, Yersinia pestis, Francisella tularensis and Orthopoxvirus). One special feature is the high tolerance to a variety of different sample matrices (such as water, milk, starch, flour, juice, soil, aerosols, etc.).
**ChemStudio product line** | Highly sensitive chemiluminescence systems

<table>
<thead>
<tr>
<th>ChemStudio</th>
<th>ChemStudio SA</th>
<th>ChemStudio PLUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Simple, standard darkroom</td>
<td>* Stand-alone system with integrated PC and 15.6” color touchscreen</td>
<td>* High-end darkroom for a variety of imaging applications</td>
</tr>
<tr>
<td>* Cost-effective alternative to other chemiluminescence systems</td>
<td>* Simple, intuitive software user interface</td>
<td>* Motorized or manual platform lift available</td>
</tr>
<tr>
<td>* 4-position emission filter wheel</td>
<td>* USB ports, wired and wireless networking capabilities for saving images</td>
<td>* 5-position emission filter wheel</td>
</tr>
<tr>
<td>* Manually controlled illumination and filter wheel</td>
<td>* 5-position emission filter wheel</td>
<td>* Fully automatic control: illumination, camera, lens and filter wheel</td>
</tr>
<tr>
<td>* Camera and lens controlled manually or via software</td>
<td>* Fully automatic control: illumination, camera, lens and filter wheel</td>
<td></td>
</tr>
<tr>
<td>* VisionWorksLS software: image acquisition and analysis</td>
<td>* VisionWorksLS software: acquisition, multilingual</td>
<td>* VisionWorksLS software: image acquisition and analysis</td>
</tr>
<tr>
<td></td>
<td>* VisionWorksLS software: image analysis (requires external computer)</td>
<td></td>
</tr>
</tbody>
</table>
The ChemStudio product line has been designed for a wide range of imaging applications. Depending on the system configuration, applications range from simple gel documentation to advanced, multispectral and multifunctional imaging. The most significant applications include high-resolution detection of chemiluminescence, fluorescence and colorimetric samples. ChemStudio can be used to meet countless BioImaging needs, both in the field of proteomics as well as genomics, with VisionWorksLS software automating image acquisition and analysis. In addition to comprehensive image acquisition features, the software provides extensive detailed image analysis tools, such as 1D analysis, surface density, colony counting, plant imaging, molecular weight standards, protein quantification, quantitative analysis of PCR products, western blot densitometry, GFP expression tracking, multiplexing and more.

- Imager 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 easily accessible filter insert with 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
- VisionWorksLS Acquisition & Analysis Software, with comprehensive features, image acquisition and analysis

### Multifunctional darkrooms
All ChemStudio darkrooms are absolutely light tight and extraordinarily user friendly, with the large front door providing easy access to the instrument interior. The overhead white light supports sample positioning and focusing.

### A winning combination: CCD cameras and lenses
In order to meet the requirements for recording different types of signals, a set of high-quality, cooled CCD cameras is available with a variety of lenses. When compared directly to other detection methods, cooled CCD cameras have been found to be superior in terms of sensitivity, accuracy, dynamic range, speed and ease of handling.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>CCD Camera 810</th>
<th>CCD Camera 610*</th>
<th>CCD Camera 510</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grayscale</td>
<td>65,536</td>
<td>65,536</td>
<td>65,536</td>
</tr>
<tr>
<td>Megapixels</td>
<td>8.1, may be expanded to 16.2</td>
<td>3.2, may be expanded to 9.6</td>
<td>2.1, may be expanded to 7.4</td>
</tr>
<tr>
<td>Cooling</td>
<td>RT – 35 °C Peltier cooling</td>
<td>RT – 50 °C Peltier cooling</td>
<td>RT – 35 °C Peltier cooling</td>
</tr>
<tr>
<td>Lenses</td>
<td>50 mm f/1.2, 30 mm f/1.4</td>
<td>50 mm f/1.2, 30 mm f/1.4</td>
<td>12.5 – 75 mm f/1.2 zoom lens</td>
</tr>
</tbody>
</table>

* Only for ChemStudio and ChemStudio PLUS
Consumables and accessories

Ranging from PCR plates in 36, 96 and 384 well format, the product portfolio not only covers the requirements of standard and rapidPCR, but also includes white plates and sealing foils for optical read-out in real-time PCR. Additional single tubes are offered as well as 8 well strips.

Also high-precision tips for FasTrans, GeneTheatre and SELMA can be ordered. Those are available with or w/o filter in dependence on the application.

Analytik Jena | Life Science: Instruments, reagents and plastic ware – All from one hand

Life Science unlimited
Molecular diagnostics and reagents

**CHOOSE YOUR PLATFORM**
e.g. PCR, rapidPCR, real-time PCR, real-time rapidPCR, endpoint detection, gel-electrophoresis, Lateral Flow Strip

**KITS ON DEMAND**
e.g. Customized solutions

**ENVIRONMENTAL ANALYSIS**
e.g. Mycoplasma, Listeria, Salmonella

**FOOD ANALYSIS**
e.g. Salmonella, Listeria, E.coli, Campylobacter, EHEC, Shigella Toxin II

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

**HUMAN DIAGNOSTICS**
e.g. Influenza, H1N1, H5N1, Bordetella, Pertussis, HBV, HCV, HDV, HIV-1, HCMV, EBV, PVB19, HSV, TB, MRD, multidrug resistance, tumor research

**INTERNAL CONTROL**
e.g. Assays for internal DNA/RNA real-time control

**EXTERNAL CONTROL**
e.g. Nucleic acid extraction (Food, Ticks)

**POLYMERASES**
e.g. Standard Taq’s, Hot Start, TITAN, Speed Taq’s, Long Range, RT-Enzyme

**PCR BUFFERS**
e.g. Ammonium, KCl, Magnesium

**LOADING DYES**
e.g. Bromophenolblue, Orange G

**NUCLEOTIDES**
e.g. Mix or Set

**PCR MIXES**
e.g. PCR and rapidPCR ready mixes, master mixes for qPCR and rapid qPCR

**LADDERS**
e.g. Standard or Express
Molecular diagnostics and reagents

Detection kits, PCR and real-time PCR reagents, polymerases and more

For standard PCR, rapidPCR as well as real-time PCR and real-time rapidPCR, Analytik Jena offers suitable polymerases, ready-to-use master mixes or direct molecular detection kits and a lot more of typically needed reagents. We can provide you with high quality dNTP’s, ladders and gel loading buffers for the final detection of PCR products by gel electrophoresis, with PCR buffers, magnesium solutions and other additives. Due to the wide variety of available analysis platforms, Analytik Jena’s assays for molecular diagnostics range from simple endpoint detection till high-end real-time monitoring. Kits are available for human diagnostics, environmental and food analysis, as well as for tick pathogens.

Real-time PCR based kits for online detection

The so-called innuDETECT kits are ready-to-use detection assays for real-time and real-time rapidPCR, based on a patented probe system. The Rehybridization Probes allow a high specific quantitative and qualitative analysis of the amplification results. Due to ideal concerted components the final determination of pathogens is highly sensitive. In addition the included positive control, as well as the Primer/Probe Mix and ready-to-use Master Mix guarantee for most convenient handling.

Procedure
1. Denaturation: All DNA molecules in the sample are present in their single-stranded form.
2. Annealing/elongation: The exonuclease activity of the enzyme amplifies the target DNA and breaks down the probe.
3. Probe rehybridization: Intact probes are rehybridized and fluorescence is measured.

Example: innuDETECT dilution series based on real-time PCR using Rehybridization Probes

All RoboGene® Assays are based on TaqMan® techniques and allow a quantitative and qualitative detection of target DNA/RNA. Plastics for direct quantification and detection are coated with standards and internal control using companies own patented technology. This tubes, as well as included lyophilized reagent mixes are stable for at least two years and could be shipped at room temperature. The final results show an outstanding analytical and diagnostic specificity.

Procedure
1. Denaturation: All DNA molecules in the sample are present in their single-stranded form.
2. Annealing/elongation: The exonuclease activity of the enzyme amplifies the target DNA and breaks down the probe. The fluorescence of free reporter dye is measured.

Example: RoboGene® standards and amplification plots based on TaqMan® real-time PCR

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Cell/initial probe</th>
<th>Cell/PCR batch</th>
<th>Ct value 1</th>
<th>Ct value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$10^7$</td>
<td>$10^6$</td>
<td>19.76</td>
<td>20.6</td>
</tr>
<tr>
<td>2</td>
<td>$10^6$</td>
<td>$10^5$</td>
<td>23.98</td>
<td>23.81</td>
</tr>
<tr>
<td>3</td>
<td>$10^5$</td>
<td>$10^4$</td>
<td>27.79</td>
<td>27.55</td>
</tr>
<tr>
<td>4</td>
<td>$10^4$</td>
<td>100</td>
<td>31.75</td>
<td>31.85</td>
</tr>
<tr>
<td>5</td>
<td>$10^3$</td>
<td>10</td>
<td>35.11</td>
<td>35.27</td>
</tr>
<tr>
<td>6</td>
<td>100</td>
<td>1</td>
<td>No Ct</td>
<td>No Ct</td>
</tr>
<tr>
<td>7</td>
<td>NTC</td>
<td>NTC</td>
<td>No Ct</td>
<td>No Ct</td>
</tr>
</tbody>
</table>

Blue: standards 1, 3, 5 - 8, Rose: 1000 IU/ml
Molecular diagnostics and reagents

PCR based kits for endpoint detection

The rapidSTRIPE detection system is developed as a diagnostic platform for very fast, efficient and specific detection of microbial pathogens, like bacteria, protozoa or viruses. The modular structure of this system combines all steps of molecular diagnostics – isolation of DNA and/or RNA, amplification and detection of target nucleic acids. The results are visualized on user-friendly, storage stable Lateral Flow Strips, which convince by high sensitivity.

Procedure
1. Standard or rapidPCR with tag-marked primer
2. Hybridization with sequence-specific antigen-marked probe
3. Detection on a lateral flow strip (LFS) via an antigen-antibody interaction

Example: Dilution series on Lateral Flow Strips (LFS)

<table>
<thead>
<tr>
<th>Strip</th>
<th>Dilution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Undiluted</td>
</tr>
<tr>
<td>2</td>
<td>1:10</td>
</tr>
<tr>
<td>3</td>
<td>1:100</td>
</tr>
<tr>
<td>4</td>
<td>1:1000</td>
</tr>
<tr>
<td>5</td>
<td>1:10,000</td>
</tr>
<tr>
<td>6</td>
<td>Negative control</td>
</tr>
</tbody>
</table>

Polymerases, cDNA synthesis and master mixes

innuTaq covers a wide product range of different Taq DNA Polymerases for PCR and/or qPCR. Thereby all enzymes are delivered with optimized 10x buffers and MgCl₂ for best adaption to each application. Amplification speeds of up to 200 bp/sec offers the matchless advantage of fast running times.

Example: Amplification of a 5.3 kb DNA fragment

Lane 1: DNA ladder, lane 2 – 4: innuTaq

For cDNA synthesis innuScript reverse transcriptase is available either as single enzyme or as One Step RT PCR Kit. The products offer an advanced activity during RT-PCR and improved stability in an enlarged temperature range (42 °C up to 55 °C).

Additionally the innuMIX ready-to-use master mixes simplify the preparation of a PCR or real-time PCR batch enormously. All innuMIX kits are 2 times concentrated and combine a specific Taq DNA Polymerase with high quality dNTP’s, an optimized buffer system and application depending additives (e.g. intercalating dyes, dyes for direct gel loading...).

Example: Amplification of a human specific gene sequence

Strip 1: Undiluted Stripl 4: Dilution 1:1,000
Strip 2: Dilution 1:10 Stripl 5: Dilution 1:10,000
Strip 3: Dilution 1:100 Stripl 6: Negative control
VYOO® | Multiplex PCR pathogen detection (Sepsis)

VYOO® is a multiplex PCR assay containing a mechanical lysis step for whole blood, automated totalDNA extraction and a unique patented pathogen DNA enrichment technology that rapidly identifies sepsis causing bacteria, fungi and antibiotic resistances with high sensitivity and specificity.

- Fast proprietary sample preparation from whole blood
- Covers 99% of all sepsis relevant pathogens: 34 bacteria, 7 fungi, 5 resistances
- Enrichment of pathogenic DNA with LOOXSTER® for high sensitivity
- Internal process control
- Pathogen identification within 7 hours

VYOO® is approved for In-Vitro Diagnostic use according to IVD Directive 98/79/EC.
VYOO® is registered trademark of SIRS-Lab.

The challenges in sepsis diagnostics

Life-threatening bacterial and fungal infections and their outcome sepsis and consecutive organ failure are one of the most frequent causes of death in the ICU. Initiation of an adequate antibiotic treatment within the first few hours of infection is a crucial step for an effective therapy. Today’s gold standard technique for pathogen detection relies on blood culture and needs 2 to 3 days to obtain results. In addition, blood culture fails to detect non-cultivable pathogens and is sensitive to antibiotic treatment prior to sample withdrawal thereby remaining negative in 80-90% of all sepsis incidents.

Early information for targeted antibiotic therapy

[Diagram showing blood culture and therapy with time labels]
Molecular diagnostics and enabling technology

LOOXSTER® | Enabling technology for bacterial and fungal nucleic acid detection

- Enrichment of bacterial or fungal DNA
- Reduction of host background DNA
- Improvement of performance and sensitivity of downstream protocols

Description
LOOXSTER® is an enabling technology allowing reduction of the mammalian DNA content in DNA isolates thus improving the performance and sensitivity of nucleic acid based pathogen diagnostics.

Principle
LOOXSTER® is a pre-analytic tool for the enrichment of bacterial and fungal desoxyribonucleic acids in DNA-extracts obtained from mammalian cells, tissues and body fluids. The enrichment effect of LOOXSTER® is achieved by means of the specific affinity of its active component, the LOOXSTER®-protein, a derivative of the human CGBP-protein, for non-methylated CpG-dinucleotides.

VYOO®
Innovative add-on to conventional blood culture, delivering early pathogen identification and overcoming deficiencies of culture based methods.

- Covers 99% of sepsis relevant species plus major resistances
- Unaffected by antibiotic pre-treatment
- Automated array readout

LOOXSTER® can be made available as solitary enrichment kit or as automated sample prep workflow comprising the functional modules cell lysis, automated DNA extraction and automated LOOXSTER® enrichment.