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Your guide to laboratory and pathology equipment in Europe

# LAB BOOK



- Automation & Sample Processing
- Chemistry & Immunochemistry
- Hematology
- Pathology
- DNA
- Microbiology
- POCT
- IT
- Other Applications

# 2020

Vol.7



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# Imprint

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## *Dear readers,*

Welcome to the 2020 edition of the Labbook. A very special kind of seven-year itch hit us: all of a sudden our discipline – laboratory medicine – is in the spotlight. Out there on the street, you hear people discussing the specificity of PCR analytics, weighing the pros and cons of antibody tests and elaborating on the difference between DNA and RNA.

Unsurprisingly, Covid-19 is a major topic in this Labbook. In addition to the feature articles, in the product section we are presenting the entire range of analytics, from antibody test kits through to diagnostic products for severely ill and hospitalised COVID-19 patients to therapy support.

Beyond current medical challenges, lab medicine's progress continues. As in recent years, the first chapter of Labbook provides an overview of automation in the medical laboratory, covering equipment such as sorters, de-cappers and re-cappers as well as complete automation solutions. For the first time you will see endpoints of a site-to site sample distribution system. Automation has reached logistics; it takes over tasks and frees time for the treatment and care of patients.

Professor Thomas Streichert from Cologne, Germany, looks at the nexus between patient safety and data security: impressively, he describes the communication with POCT users torn between quick access to data and the need to protect this data from unauthorised use and from tampering. Entering a user code plus a 16-digit password on a tiny keypad in the stressful surgery prep phase, or in an emergency setting, is not going to be a solution. The take-home message? Technology is not everything, much rather intelligent processes and common sense will lead to a solution. This insight, we are sure, will also support your every-day work.

We would also like to point out another first: this year, our Special FOCUS ON CHINA showcases regional and smaller manufacturers of diagnostic products. Please take a look at their offerings because we would like to continue this focus in the future editions.

As in previous years, you can access a digital version of the Labbook. You will find a database with the products, the feature articles and the e-paper version under [www.healthcare-in-europe.com](http://www.healthcare-in-europe.com) where you can also use the contact form to request further information.

Manufacturers, authors and the editorial team – we all look forward to receiving your feedback, be it praise, criticism or suggestions what you would like to find in the next edition.

Enjoy reading and browsing

**Daniela Zimmermann**

**Dr Markus Neumann**



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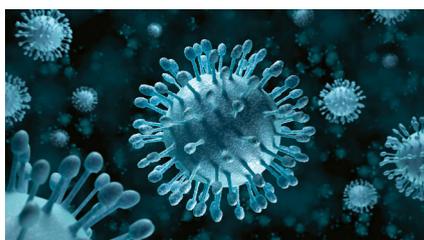
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# Automation & Sample Processing

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Automation  
Automated Sample Processing

 **BECKMAN  
COULTER**

**HORIBA**  
Medical

 **IMPROVE**

 **inpeco**

 **Promega**

 **Samplision**

 **SARSTEDT**

**SIEMENS**  
Healthineers

 **T&O**  
LABSYSTEMS

Sample Processing  
Robotics  
Automation  
Sample Logistics

# Sample Processing

## Sample Processing

### ASP Lab Automation – Bench-top Decapper DeCap Pro



**Dimensions:** 560 × 360 × 610 mm (w × h × d)

**Sample throughput:** Over 2,000 tubes/h

**Highlights:** DeCap Pro decapper is a compact bench-top device that safely and efficiently removes original caps from blood specimen tubes.

- Avoids potential health risks from Carpel Tunnel Syndrome and aerosol contamination
- Tubes are loaded and decapped in analyzer racks
- Handles up to 15 racks each for input and output
- Available for many analyzer rack types
- Robust and simple design guarantees high reliability and uptime
- Smaller models available that handle single racks

### ASP Lab Automation – Recapper KapSafe



**Dimensions:** 730 × 730 × 1,100 mm (w × h × d)

**Sample throughput:** Up to 1,200 tubes samples / h

**Highlights:** Automated recapping of sample tubes  
KapSafe is an automated, pneumatics-free, high-speed, benchtop recapper designed to safely and automatically recap tubes for storage or archiving. The system recaps all standard vacuum collection tubes with 13 to 16 mm diameter and enables repeated automated decapping and recapping. It provides walkaway operations with an input capacity of up to 20 racks with various-sized tubes in each rack.

### ASP Lab Automation – Tube Sorter SortPro



**Dimensions:** 1,170 × 1,852 × 601 mm (w × h × d) for six channels + 170 mm for each two extra channels

**Sample throughput:** More than 3,000 samples/h

**No of Channels:** Freely configurable from 5 to 10 target bins

**Highlights:** The SortPro tube sorter is an economical automation device for the preanalytics of small and high-volume labs.

- Early specimen identification and registration
- Fast presorting of specimens
- Bulk input and bulk output of specimens
- Processes all standard blood and urine tube types
- Identifies specimen by barcode, cap color and/or tube type
- Priority handling for urgent tubes
- Identifies precentrifuged specimens
- Archives photos of all processed tubes

### Improve Medical – Automatic Biosafety Decapper



**Highlights:**

- Biosafety protection design
- Aerosol filtration efficiency > 99.99%
- A pf > 3 × 10<sup>5</sup>
- Micro-vibration design for specimen safety
- Auto run and walk away with supporting sample-in and sample-out buffer zone
- Able to decap Φ 75 / 100mm tubes, even in one rack at the same time
- Decapping throughput: > 1,800 tubes/h

## Samplision – HENmini – Automatic blood collection tube labeler



- Dimensions:** 599 × 396 × 199 mm (h × w × d)
- Sample throughput:** High speed over 300 tubes per hour
- No of channels:** Max. 10 inlets for different brands of tubes and sizes
- Weight:** 15 kg
- Highlights:**
- Table top and mobile labeling system for blood collection tubes with storage capacity for 140 blood collection tubes
  - High automation: integrated customer specific loading compartments / inlets (up to 140 tubes)
  - All types and sizes of blood collection tubes can be used (BD, Greiner, Sarstedt)
  - Immediate patient specific availability

## Sarstedt – Decapper DC 1200 / Recapper RC 1200



- Highlights:**
- Decapper DC 1200:**
- Automatic decapping of all tube diameters from 11 to 16 mm
  - Processes a variety of tube types in mixed operation
  - Sample pre-sorting for the decapping process is unnecessary
- Recapper RC 1200:**
- Automatic recapping of all tube diameters from 13 to 16 mm
  - Minimises the risk of exposure
  - Eliminates sample contamination
  - Archiving cap fits most tubes from 13 to 16 mm diameter
  - Automated decapping enabled

## Sarstedt – Bulk Loader BL 1200



- Sample throughput:** Up to 1,200 tubes/h
- Highlights:**
- Ideal in combination with any analytical platform
  - No sorting or handling required
  - Process any tube type of 80 to 110 mm length (with cap) and 11 to 16 mm diameter, including false bottom options
  - Suited for any sample type (serum / plasma, serum gel / plasma gel, EDTA, citrate, blood sugar, urine)
  - Integral ID module
  - Automatic sample accessioning
  - Customised sort rules to a variety of carrier types or bins
  - Safe, rapid and continuous operation without error
- System range:
- BL 1200 – Bulk to Rack
  - HCTS2000 MK2 – Bulk to Box

## Sarstedt – Sample Distribution System PVS 1625



- Highlights:**
- The PVS 1625 is a tailor made automation system for pre- and post-analytical processing of samples. It is capable to handle any kind of rack and tray type. As an open system, it is complementary to any analytical platform or can be used independently. Loading of unracked or racked sample tubes is via the Bulk Loader Module or in racks via the loading platform, which is suitable for closed and open tubes.
- Full function pre- and post-analytical system
- Ideal in combination with any analytical platform
  - Modular configuration according to customer needs with: Loading platform and / or Bulk Loader Module
  - ID Module / Decapper / Recapper / Aliquoter / Sorter
  - For all common tube types: 13 – 16 mm diameter, 65 – 100 mm length (without cap)
  - Compatible with most racks or carrier types

# Sample Processing

## Sample Processing

### Sarstedt – Sorter DC/RC 900 Flex



**Sample throughput:** Up to 900 tubes/h

- Highlights:** Pre- and post-analytics in one system:
- Processes any tube diameter from 11 to 16 mm
  - Compatible with most racks or carrier types
  - Online or offline operation
  - Opens tubes with push caps, stoppers and screw caps
  - Can be customised to sort by tube type, material (barcode) or test request
  - Closes tubes with universal archiving caps
  - Retrofitting of decapping or recapping module is possible
  - Recapping with screw caps for Sarstedt tubes with 13 or 15 mm diameter

## Robotics

### Siemens Healthineers – VersaCell X3 Solution



**Dimensions:** 1,520 × 1,780 × 1,040 mm (h × w × d)  
**Sample throughput:** Up to 200 samples tubes/h  
**Power consumption:** 800 W  
**Assays:** Menu varies based on analyzers connected

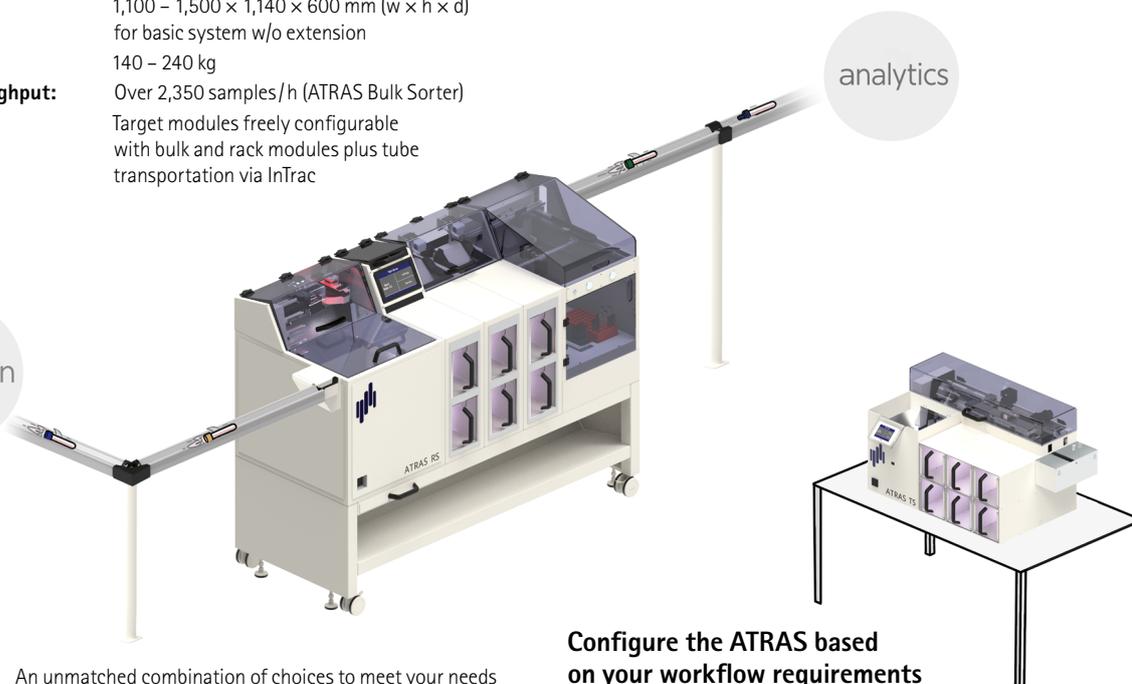
- Highlights:** Advance workflow capabilities, streamline processes, and meet changing needs with agility – at a cost labs can justify. VersaCell X3 Solutions use robotics with dynamic STAT management to provide the optimal mix of chemistry and/or immunoassay analytics with one-touch sample management. Connect up to three Siemens' instruments including ADVIA 1800 chemistry System, ADVIA Centaur XPT and/or IMMULITE Immunoassay systems, and Dimension EXL and RxL Max integrated Systems.
- Product availability varies by country.

## Automation

### T&O LabSystems – ATRAS Bulkloader/Sorter and InTrac conveyer belt

**Dimensions:** 1,100 – 1,500 × 1,140 × 600 mm (w × h × d) for basic system w/o extension  
**Weight:** 140 – 240 kg  
**Sample throughput:** Over 2,350 samples/h (ATRAS Bulk Sorter)  
**Channels:** Target modules freely configurable with bulk and rack modules plus tube transportation via InTrac

sample reception area



- Highlights:** An unmatched combination of choices to meet your needs
- ATRAS – bulk to bulk
  - ATRAS RS – bulk to rack
  - ATRAS TS – bulk to bulk with a footprint of 0.4 qm
  - InTrac – Transportation of single tubes within the entire laboratory or phlebotomy

**Configure the ATRAS based on your workflow requirements**

## Beckman Coulter – DxA 5000

<b>Dynamic inlet:</b>	Up to 1,200 tubes/h
<b>Centrifuges:</b>	Up to 500 tubes/h (1), Up to 1,000 tubes/h (2)
<b>Decapper:</b>	Up to 1,200 tubes/h
<b>Recapper:</b>	Up to 1,200 tubes/h



**Highlights:** The DxA 5000 helps laboratories meet the challenges of today's highly focused healthcare environment through a collection of patented innovations that deliver rapid and consistent turnaround time, provide a new level of comprehensive pre-analytical sample quality detection, and reduce the number of manual processing steps to significantly improve laboratory efficiency. Leveraging first-of-its-kind dynamic system software, the DxA 5000 utilizes Intelligent Routing to bring automated

patient-centric workflow to the laboratory. By understanding the tests requested, sample volume available and real-time analyzer capacity and status, the DxA 5000 continuously calculates the most expeditious route for every patient sample – both STAT and routine.

The DxA 5000 enhances Beckman Coulter's comprehensive portfolio of scalable solutions, and is a key component of its vision to bring workflow automation to laboratories of all sizes.

## Horiba Medical – HELO\* Solution



**Highlights:**

Horiba Medical has developed a new HELO\* configuration thanks to a new Yumizen T6000 island shape. This compact solution allows to connect analyzers (Yumizen H1500/H2500 and Yumizen SPS options) on both sides of the same track. This innovative track configuration generates a very high result production capacity per square meter of floorspace.

The HELO\* Solution is therefore available in four different shapes (Linear, Angular, Workcell, Island) in order to match with many laboratory architectural constraints.

*\*Horiba Evolutive Laboratory Organisation*

## Improve Medical – Intelligent Blood Collection Management Solution



**Highlights:**

- Total solution for complete processes of blood collection management and sample processing
- Intelligent and standardize blood collection process
- Reduce errors during preanalytical phase

**Component:**

- Blood collection tube preparation system
- Intelligent sorter
- Multi-function blood collection table
- Queuing system

## Automation

### Inpeco SA – Total Laboratory Automation (TLA)

#### Highlights:

FlexLab is the most open automation system capable of managing the complete process of a patient sample, from tubes check-in, through pre-analytical and post-analytical modules, that automates all manual routine tasks, such as identification, sorting, centrifugation, decapping, aliquoting, recapping, storage, disposing and retrieval. FlexLab has over 50 validated connections with the most common analyzers, for many specialties.

FlexLab is a completely scalable system, that adapts to the specific laboratory current needs and is open for future integrations, as the lab evolves. It includes an integrated middleware solution, called Data Management Software, that receives patient results from analyzers, and sends the results to the Lab Information Systems.



### Promega – Maxprep Liquid Handler

<b>Dimension:</b>	1,069 × 709 × 831 mm (w × h × d)
<b>Weight:</b>	98 kg
<b>Sample throughput:</b>	1 – 48 samples/hour; (2) 24 position Maxwell RSC 48 or (2) 16 position Maxwell RSC removable trays
<b>Number of channels:</b>	4
<b>Assays:</b>	Promega Maxwell Kits

- Highlights:**
- Complete nucleic acid purification system in combination with Maxwell RSC and Maxwell RSC 48
  - Automated Maxwell sample preparation
  - Hands-free nucleic acid extraction on the Maxwell RSC or RSC 48
  - Post-extraction sample preparation for quantitation, normalization and amplification setup using the Maxprep Liquid Handler
  - UV decontamination and barcode scanner



### Siemens Healthineers – Aptio Automation



#### Highlights:

Aptio Automation combines intelligent technologies with Siemens Healthineers workflow expertise in adaptable, multidisciplinary track designs with intelligent routing, single-sample flow and primary tube sampling. Choose from a selection of pre- and post-analytical processing modules and automation-ready chemistry, immunoassay, hematology, hemostasis and specialty testing analyzers. Our experts perform data-driven simulations, optimization modeling and more to design and monitor your solution for ongoing productivity.

## Sample Logistics

## Sarstedt – Tempus600 Vita

**Highlights:**

The Tempus600 Vita provides dedicated, direct and fast transport of blood samples to the laboratory without batching or manual packaging steps. The samples are placed in the insertion point of the Vita, transported via a pipeline  $\varnothing$  25 mm and landed in the laboratory within seconds. Drastically reducing the total turnaround time for blood sample testing results in faster diagnosis and patient treatment.

- Handles up to 810 sample tubes / hour
- Compatible with all sample tubes: length 80 – 110 mm, diameter 12 – 18 mm
- Connectable to all lab automation, sorters and bulk loaders

## Sarstedt – Tempus600 Quantit

**Highlights:**

The Tempus600 Quantit provides direct and fast transport of blood samples to the laboratory without batching or manual packaging steps. The samples are placed in a drawer, transported via a pipeline  $\varnothing$  25 mm and landed in the laboratory within seconds. Drastically reducing the total turnaround time for blood sample testing results in faster diagnosis and patient treatment.

- Sending both high volume and urgent samples
- Samples are always oriented the right way by the system
- Compatible with all test tubes: length 80 – 110 mm, diameter 12 – 18 mm
- Connectable to all lab automation, sorters and bulk loaders

## Sarstedt – Tempus600 Connection Module

**Highlights:**

The Tempus600 Connection Module is part of an automated one-touch handling system for sample tubes. The sample tubes are delivered from the ward to the laboratory through the dedicated point-to-point system. The sample tubes are gently slowed down before landing in the automation module. From here they are automatically transferred e.g. onto a track system.

- Compatible with all lab automation systems including sorters and bulk loaders
- A brake module can be fitted to increase sample throughput and failure-free tube loading.
- Up to 8 connections

# Chemistry & Immunochemistry

Clinical Chemistry  
Immunochemistry  
Immunoassays  
Integrated Systems  
Mass Spectrometry  
Electrophoresis /  
Chromatography  
Plasma Protein Testing  
Drug Testing  
Urine Screening  
Rapid Testing  
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**mindray**

**SIEMENS**  
Healthineers 

**SENTINEL**  
DIAGNOSTICS

  
**sysmex**

 **SHIMADZU**  
Excellence in Science

## Clinical Chemistry

### Alsachim, a Shimadzu group company – Dosimmune



**Highlights:** Immunosuppressants in whole blood for LC-MS/MS

Dosimmune is a reagent kit based on LC-MS/MS analytical method for the quantification of immunosuppressant drugs in whole blood: Cyclosporin A, Sirolimus, Everolimus, Tacrolimus.

Dosimmune is a turnkey diagnostic device for the rapid and multiplex assay of four immunosuppressant drugs, thanks to inhouse production of stable isotope-labelled internal standards. This multiplex method allows pharmacological therapeutic monitoring of patients treated with immunosuppressants.

### Alsachim, a Shimadzu group company – Dosinaco



**Highlights:** Dosinaco is the first commercial LC-MS/MS reagent kit for anticoagulants in plasma.

Anticoagulants are used to treat and prevent blood clots prevalent in cardiovascular diseases. Direct oral anticoagulants (DOACs) have recently been developed, aiming to modulate factor X in a dose dependent manner. Their precise quantification for therapeutic purpose is necessary to determine the concentration or to identify the presence/absence of an anticoagulant effect.

### Beckman Coulter – AU5800 Series



**Dimensions:** 1,260 × 2,600 × 1,580 mm (h × w × d)  
**Weight:** 1,070 kg  
**Sample throughput:** 2,000 – 9,800/h  
**Power consumption:** 200 – 240 W

**Highlights:** The AU5800 series represents the highest throughput and fastest turnaround time in the Beckman Coulter AU chemistry analyzer family. With true random-access capabilities, the AU5800 series is available in four different scalable models, which are designed to meet the needs of the high-volume core hospital laboratories, as well as the ultra-high-volume commercial laboratory market segment.

- Maximize throughput with an intelligent sample management system that optimizes the processing of racks based on the tests ordered
- Ensure quick turnaround time for critical patients with STAT priority testing and auto-repeat of abnormal results

### Beckman Coulter – DxC 700 AU



**Dimensions:** 1,300 × 1,250 × 890 mm (h × w × d)  
**Weight:** 460 kg  
**Sample throughput:** 800 – 1,200/h  
**Power consumption:** 200 – 240 W

**Highlights:** Designed to meet the needs of mid- to high-volume clinical laboratories, the DxC 700 AU reduces the number of test-processing steps by 30 percent due to its intuitive user-interface that allow operators to spend less time on daily tasks and more time producing the quality results that empower better decision-making.

- Simple, intuitive design of the DxC analyzer with the robust throughput capabilities of the AU analyzer
- Configurable with a total laboratory solution option to connect the DxC 700 AU with pre-analytical automation, immunoassay and clinical IT

# Less work. More flow.

Data-driven innovation  
to simplify workflows

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reduction in testing errors.<sup>1</sup>



**88%**  
30-minute STAT turnaround compliance.<sup>2</sup>



**85%**  
increase in patient and staff satisfaction.<sup>1</sup>

Learn how Atellica Diagnostics IT can use your data to take the work out of your workflow.

[siemens-healthineers.com/atellica-diagnostics-it](https://www.siemens-healthineers.com/atellica-diagnostics-it)

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# Providing confidence in the fight against COVID-19

## What is serology?

The term "serology" continues to float around headlines and hospitals, serving as a potential big next step in the response to COVID-19. With the ability to look deeply into the population's level of previous COVID-19 infection, serology testing is a key tool to address important issues as we look to reopen communities, return to work and prepare for a vaccine.

Serology detects the presence of antibodies, or immunoglobulins, which are created as an immune response to an invader. Serology testing does not detect the presence of the SARS-CoV-2 virus itself, but rather detects the antibodies that are, or were, produced as part of the body's natural response to fight the infection.

### **Significance of the spike protein**

The coronavirus gets its name from the spike like protrusions that look like a crown. Among the components of the coronavirus are the spike (S) protein, which protrudes outside of the cell, and the nucleocapsid (N) protein, which is found towards the inside of the cell.

Though the coronavirus uses many different proteins to replicate and invade cells, the spike protein (S protein) is the major surface protein that it uses to bind to a receptor. After the spike protein binds to the human cell receptor, the viral membrane fuses with the human cell membrane, allowing the genome of the virus to enter human cells and begin infection.<sup>1</sup>

The coronavirus spike protein mediates entry into host cells by attaching to a receptor on respiratory cells called angiotensin-converting enzyme 2, or ACE2.<sup>2</sup>

Not all antibody tests are equal – some SARS-CoV-2 antibody tests on the market target the N-protein rather than the S-protein. Doing so can potentially lead to weaker neutralizing capacity. A recent study found that 12 percent more individuals exhibited neutralizing capacity with S-RBD binding antibodies than with N-protein antibodies.<sup>3</sup>

### The case for separate IgM and IgG assays

Common serology testing for COVID-19 can be separated into two groups: a total IgG and IgM antibody test, where the patient is administered a single test for both assays; and separate IgG and IgM antibody tests, where a patient is administered two tests at different stages in their infection timeline.

The hardship with total IgG and IgM assays lies with the difficulty distinguishing between earlier (IgM) and later (IgG) antibody responses. A positive result in the combined assay may prompt a clinician to reflex – resulting in re-testing testing with a PCR test, IgG test, or both.

As with any serology test, the use of high-quality assays is key for accuracy. It's important to ensure the antibody test you utilize has high sensitivity, or the ability of the test to detect SARS-CoV-2 antibodies in patients who have antibodies, and high specificity, or the ability of the test to correctly identify those who do not have antibodies.

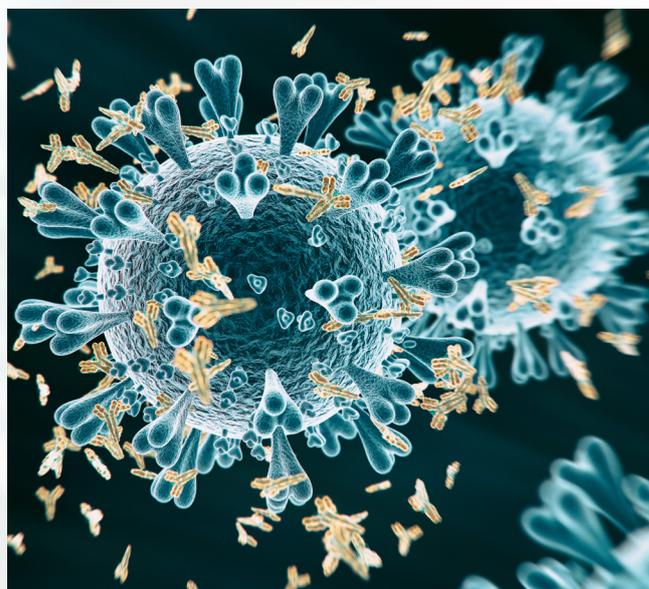
### Opportunities for COVID-19 serology testing going forward

Plasma, the liquid component of blood, contains vital antibodies that could boost a person's ability to fight the disease. Plasma containing neutralizing antibodies may be administered to reduce symptoms, prevent death and speed recovery among the seriously ill with a specific infection. Plasma transfusions can be made available to patients right away, while a vaccine or new drugs could take an extended amount of time to be available.

COVID-19 requires multiple analytic tools to help determine the health status of an individual. High-quality separate antibody assays,

such as IgM and IgG specific assays designed to identify antibodies associated with both short-term and long-term immune responses will help us monitor and prevent the spread of the pandemic. Confirming suspected COVID-19 cases as early as possible is critical in isolating patients to slow the spread of disease.

Fighting the coronavirus pandemic drives you, and we're in this fight together. Find resources for help in navigating the SARS-CoV-2 virus crisis and learn more about Beckman Coulter's Access SARS-CoV-2 Assays at [beckmancoulter.com/coronavirus](https://beckmancoulter.com/coronavirus). ■



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## Clinical Chemistry

### Beckman Coulter – HbA1c Advanced



**Highlights:** The fully automated HbA1c Advanced assay enables mid- to high-volume laboratories to provide physicians with state-of-the-art precision and accuracy for diagnosing diabetes mellitus, monitoring long-term glucose control in individuals with diabetes mellitus and identifying patients who may be at risk of developing diabetes mellitus.

- National Glycohemoglobin Standardization Program (NGSP) certified/DCCT standardized and precise, providing clinically relevant results for diagnosing and monitoring diabetes
- Unaffected by common hemoglobin variants, minimizing misdiagnosis or missed diagnosis for patients with these blood conditions
- Easy to implement and integrate into the laboratory's existing chemistry testing practices, providing workflow efficiency
- Available in a single all-in-one kit for Beckman Coulter DxC 700 AU analyzers

### Fujifilm Wako – Hyaluronic Acid LT Assay



**Assays:** Quantitative determination of Hyaluronic Acid (HA) based on the latex agglutination method

- Highlights:**
- Measurement of key marker for fibrotic stage of chronic liver diseases
  - Method applicable to general analyzers of clinical chemistry
  - Fast determination of hyaluronic acid in serum or plasma (10 min)
  - High precision

### Fujifilm Wako – NEFA-HR(2) Assay



**Assays:** Quantitative determination of non-esterified fatty acids (NEFA) in serum

- Highlights:**
- Applicable to all common clinical chemistry analyzers and manual methods
  - Reliable results without interference from ascorbic acid and bilirubin
  - High linearity
  - Accurate, precise, simple and fast
  - Also applicable in veterinary samples

### Fujifilm Wako – Autokit Total Ketone Bodies Assay



**Assays:** Quantitative determination of total ketone bodies [acetoacetate (AcAc) + 3-hydroxybutyrate (3-HB)] in serum or plasma

- Highlights:**
- Enzymatic colorimetric test, applicable to clinical chemistry analyzers
  - Recognition of pediatric metabolic disorders
  - Monitoring of liver transplants
  - Monitoring of diabetic patients
  - Reliable results without interference from ascorbic acid and bilirubin

## Genrui – GS100



**Sample throughput:** Up to 120 tests/h  
**Dimensions:** 350 × 350 × 605 mm (w × h × d)  
**Weight:** 25 kg

**Highlights:** The most integrated one among its competitors, GS100 serves its customers with considerate all-in-one solution (build-in PC, printer, easy-to-use UI), and yet it makes no compromise on the performance. By bringing easeful experience of a small automatic analyzer, it fits in various healthcare settings especially in primary care, and makes the work in these department more efficient as a further development.

Not available for sale in the U.S. / Product availability varies by countries

## Genrui – GE500



**Sample throughput:** K<sup>+</sup>, Na<sup>+</sup>, Cl<sup>-</sup>, Li<sup>+</sup>, Ca<sup>2+</sup>, pH, Mg<sup>2+</sup>  
**Dimensions:** 235 × 439 × 330 mm (w × h × d) Device,  
 230 × 125 × 245 mm (w × h × d) Auto loader  
**Weight:** 7.5 kg Device / 2.0 kg Auto loader

**Highlights:** The simplest-to-the-best one GE500 has considerate integrated solution both for its analyzer (auto-loader for sampling) and reagent (reagent pack by tests). What's more, it offers automation and reliable performance with minimal hands-on time through its innovative UI. Aiming at small to medium sized labs, with its proven quality and easier operation, it leaves a pleasant impression on technicians.

Not available for sale in the U.S. / Product availability varies by countries

## Greiner – Vacuette CAT Serum Fast Tube



**Highlights:**

- Tube combines the speed of a plasma tube with the properties of serum
- Shorter preanalytical process
- Full coagulation in just 5 minutes
- Improved turnaround time
- Blood collection can be performed shortly before transport of the blood samples
- Quicker lab results with on-site analysis

## Mindray – BS-240Pro Clinical Chemistry Analyzer



**Sample throughput:** Constant 240 tests/h,  
 up to 400 tests/h with ISE  
**Dimensions:** 860 × 550 × 660 mm (w × h × d)  
**Weight:** 115 kg

**Highlights:**

- Constant throughput with 240 photometric tests/h, up to 400 tests/h with ISE module
- Large and flexible capacity: up to 100 sample/reagent positions (50 fixed + 50 interchangeable)
- Reduced reagent consumption: 100 µl minimum reaction volume
- Intelligent probe with liquid level detection, V&H collision detection, inventory monitoring, reagent pre-heating and optional clog detection
- Grating photometer with 12 wavelengths, dual-diaphragm and dual-lens
- HbA1c smart-sampling function, automatic hemolysis

## Clinical Chemistry

### Mindray – BS-430 Clinical Chemistry Analyzer



**Sample throughput:** Constant 420 tests/h, up to 626 tests/h with ISE  
**Dimensions:** 1,050 × 1,150 × 720 mm (w × h × d)

- Highlights:**
- Large loading capacity: 92 reagent positions, 102 sample positions
  - HbA1c smart sampling: supports HbA1c onboard hemolysis
  - Advanced software platform: auto QC, auto reflex, substrate depletion & enzyme linearity extension, etc.
  - Quick start-up time: 5 minutes system initialization, 1 minute system wake-up
  - Low reagent consumption: minimal 100µl reaction volume

### Mindray – BS-480 Clinical Chemistry Analyzer



**Sample throughput:** Constant 400 tests/h, up to 560 tests/h with ISE  
**No of parallel samples:** Up to 78 on-board chemistry tests  
**Dimensions:** 1,185 × 1150 × 710 mm (w × h × d)  
**Weight:** 300 kg

- Highlights:**
- Discrete, random access, fully automated
  - Constant throughput with 400 photometric tests/h, up to 560 tests/h with ISE
  - 24-hour on board refrigerated reagent compartment at 2~10 C
  - Reusable cuvettes with auto-washing station
  - Two independent mixing stirrers
  - Clot detection, automatic probe cleaning, liquid level detection & collision protection (V&H)
  - Reversed grating system with 12 wavelengths (340~800nm)
  - Pre-dilution and post-dilution for sample
  - Built-in barcode scanner
  - Bi-directional LIS interface

### Mindray – BS-800M Clinical Chemistry Analyzer



**Sample throughput:** Constant 800 tests/h, up to 1,200 tests/h with ISE  
**No of parallel samples:** Up to 68 on-board chemistry tests  
**Dimensions:** 1,600 × 1,200 × 1,015 mm (w × h × d)  
**Weight:** ≤ 450 kg for analytical unit, 150 kg for SDM

- Highlights:**
- Modular system: flexible connection
  - HbA1c smart sampling, automatic hemolysis
  - Accurate: high pipetting precision, coolant circulation reagent refrigeration direct solid-heating system, effective mixing unit and intelligent clot detection
  - Innovative: reagent bubble detection, dot light source and water quality monitor
  - Cost-efficient: large capacity with SDM racking system, 100 µl minimum reaction volume, one key STAT, continuous reagent loading and unloading
  - Original calibrators with traceability

### Sarstedt – S-Monovette GlucoExact



- Highlights:**
- The S-Monovette GlucoExact stands for precise determination of glucose and stabilizes the glucose concentration immediately for up to 96 hours at room temperature.
  - It meets the Gestational Diabetes Guidelines of the German Diabetes Association (DDG) and the German National Disease Management Guidelines (NVL) for type 2 diabetes.

## Sarstedt – S-Monovette Lithium Heparin Gel<sup>+</sup>



- Highlights:**
- Laboratory results influence therapy decisions by 70 to 85 percent. For both the doctor and the patient, it is important that laboratory results are incorporated into therapy decisions quickly and without compromise.
  - The S-Monovette Lithium Heparin Gel<sup>+</sup> guarantees reliable sample quality at a reduced TAT: The centrifugation time is reduced by up to 50 percent which enables faster therapy decisions. Also the equipment utilization is optimized at an improved workflow.

## Sentinel – Sentifit 270 Analyzer (Sysmex)



- Sample throughput:** Up to 270 samples/h  
**Dimensions:** 625 × 870 × 670 mm (h × w × d)  
**Weight:** 120 kg  
**Assays:** Faecal Immunochemical Testing (FIT) and Faecal Calprotectin (fCAL)

- Highlights:**
- The Sentifit 270 Analyzer is a fully automatic system dedicated to faecal testing
  - Continuous sample loading
  - Automatically detects appropriate buffer level in tube
  - Integrated sensor prevents blocking of the sampling needle
  - Automatically detects prozone and high concentration samples, which can be automatically diluted and rerun
  - High on-board reagent capacity for up to 1,250 tests
  - Refrigerated reagent positions for long storage stability
  - Highly stable latex reagents
  - Integrated barcode reader

## Immunochemistry

### DRG Instruments – DRG:Hybrid-XL



- Sample throughput:** 40 fully automated tests per run  
**Assays:** SARS-CoV-2 (RBD) Total Ab  
 SARS-CoV-2 (RBD) IgG (quantitative)  
 Brand New: AMH (Anti-Mullerian Hormone)  
 Unique Stool Diagnostic Test: Pancreatic Elastase, Calprotectin  
 Tests for Celiac Diseases: Anti-tTG, Anti-DGP  
 More unique assays: Hcpidin-25, Salivary Cortisol, 17-OH Progesterone
- Dimensions:** 600 × 600 × 630 mm (h × w × d)

- Highlights:** DRG:Hybrid-XL is a fully-automated bench top analyzer with high flexibility and an intuitive user interface, that simplifies daily work. This unique technology allows the simultaneous determination of immunoassays, immunoturbidimetry, as well as clinical chemistry tests in the same sample. Calibration is provided via barcoded master curve and a two-point re-calibration set. Calibration as well as reagent cartridges offers a long stability.

### Sarstedt – ELISA Plates / Micro test plates for immunoanalytics



- Highlights:** One of the analyses most commonly used is the Enzyme-Linked Immunosorbent Assay (ELISA). With this method, even the smallest concentrations of a range of substances (proteins, peptides, antibodies, hormones etc.) can be detected and quantified from complex solutions.

# Fast, flexible transport system for high volume and urgent samples

Tempus600 Quantit is an innovative, flexible system for transporting small clinical samples in hospitals. The system has been developed to cater for the need to dispatch several samples at the same time without any packaging. By sending the samples directly to the laboratory immediately after blood sampling, the workflow in the departments and in the laboratory is improved. The result is fast, predictable response times, better patient flow and treatment of patients can be initiated earlier.

Tempus600 Quantit is implemented in several hospitals, e.g. in busy departments such as emergency rooms and in blood sampling, where there are many users and a high throughput of samples. The flexible system can be easily set up and adapted to the departments' varying needs for transporting the samples.

### Easy and user-friendly handling of samples

The user-friendly "Drop & Go" principle makes it easy and efficient for staff to submit samples. The user simply places the samples in the transmitter module, and when closed, the system automatically begins to handle and send the samples individually to the laboratory. Simultaneously and repeatedly, up to 25 samples at a time can be placed in the transmitter module. The samples are unpackaged and the system itself orients the sample tubes correctly before sending them.



**Quantit urgency module:** Priority input: Samples are placed in the urgency module and transferred immediately to the laboratory.



Tempus600 Quantit sending station



**Quantit loading unit:** Multiple samples – up to 25 samples at a time – can be loaded into the transmitter module.

For continuous sending of samples, the sample tubes are placed in the sending module and urgent samples are placed in the urgency module, which prioritizes and sends the samples before the other samples in the queue.

Non compatible samples are automatically sorted to the rejection drawer in Tempus600 Quantit. In laboratories with fully automated laboratory equipment, it minimizes the risk of error messages on the laboratory track system.

### Software settings increases flexibility

The software in Tempus600 Quantit is adapted to the department's needs to send samples, e.g. continuous transport of high volume samples and transport of low volume urgent samples (STAT). Users can choose from four different options prioritizing between sending sample tubes as quickly as possible or that users can get rid of a relatively large amount of sample tubes in a short time. ■

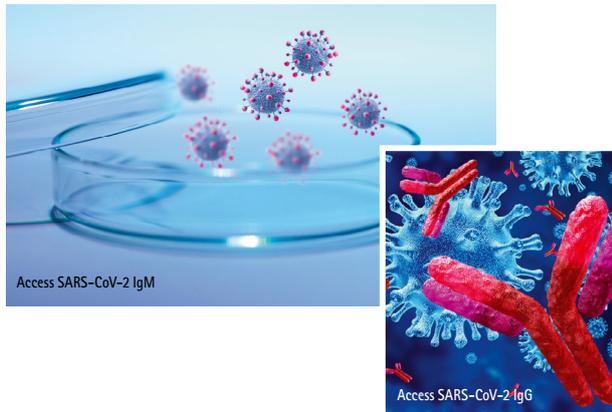


### CONTACT

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## Immunoassays

### Beckman Coulter – SARS-CoV-2 Assays



- Highlights:** The Access SARS-CoV-2 Assays are qualitative immunoassay tests that detect IgG or IgM antibodies. Both the IgM and IgG assays can identify antibodies even in asymptomatic individuals can be used to provide clinicians with useful information.
- Access SARS-CoV-2 IgG
- The test has a confirmed 100% Positive Agreement (sensitivity) at 18 days post PCR confirmed positive test and 99.6% Negative Agreement (specificity)
- Access SARS-CoV-2 IgM
- The test has confirmed 98.3% positive percent agreement (sensitivity) at 15-30 days post symptom onset and 99.9% negative percent agreement (specificity)

### Beckman Coulter – Access Interleukin-6 (IL-6)



- Highlights:** The Access Interleukin-6 (IL-6) assay is a fully automated immunoassay designed to measure the IL-6 level in serum and plasma which can be used to assist in identifying severe inflammatory response in patients with confirmed COVID-19 illness to aid in determining the risk of intubation with mechanical ventilation, in conjunction with clinical findings and the results of other laboratory testing.
- Preliminary studies have shown that IL-6 levels are elevated in patients with severe COVID-19 and IL-6 may contribute to the severe inflammatory response, also sometimes referred to as cytokine storm.<sup>1</sup>
  - Elevated levels of IL-6 may be an early indicator that a patient is at risk of cytokine storm and acute respiratory distress<sup>2,3</sup>

<sup>1</sup><https://www.immunology.ox.ac.uk/covid-19/literature-digest-old/the-potential-role-of-il-6-in-monitoring-severe-case-of-coronavirus-disease-2019>

<sup>2</sup><https://link.springer.com/article/10.1007/s00134-020-05991-x>

<sup>3</sup> Maurizio, Cat et al. "Early Predictors of Clinical Deterioration in a Cohort of 239 Patients Hospitalized for Covid-19 Infection" 4 Mehta P, McAuley DF

### Beckman Coulter – Prostate Health Index (phi)



- Highlights:** The Prostate Health Index (phi) is a calculation that uses a combination of three blood tests to produce a "phi score". The "phi score" provides additional information as to what elevated PSA levels might mean and the probability of finding detectable prostate cancer on biopsy. The phi results are intended to be used as an aid in determination of the risk of prostate cancer from benign prostatic conditions in men 50 years of age and older with total PSA results in the  $\geq 2$  to  $\leq 10$  ng/mL, with a negative DRE findings that is not suspicious for cancer.
- When combined with the patients' clinical risk factors and family history, the phi score can help determine individualized patient management decisions. Prostatic biopsy is required for diagnosis of cancer.

### Beckman Coulter – Access High Sensitivity Troponin I (hsTnI)



- Highlights:** The Access hsTnI assay provides the advanced diagnostic capabilities necessary to aid physicians in diagnosing at risk patients for acute myocardial infarction earlier and discharging non-acute patients faster. In comparison to standard troponin assays, high-sensitivity assays demonstrate significantly improved precision at and below the 99th percentile upper reference limit (URL), allowing better discrimination of small differences in troponin values between serial measurements.
- Aids in rapid diagnosis of AMI and confidently excludes AMI in as little as one hour after patient presentation
  - Provides optimal precision at concentrations about 10x lower than previous generation troponin assays. Improved precision at the clinical cutoff reduces chance of misclassifying patients in the Emergency Department

## Immunoassays

### Beckman Coulter – Access Procalcitonin (PCT)



**Highlights:** Access PCT aids physicians in the risk assessment of critically ill patients for progression to severe sepsis or septic shock. With results you can trust in approximately 20 minutes. Access PCT allows healthcare providers to integrate procalcitonin testing into their routine sepsis workups on core laboratory analyzers as a primary or reflex test programmed through Beckman Coulter's REMISOL Advance middleware. Such integration simplifies laboratory workflow and optimizes institutional sepsis management protocols while reducing the operation expense of maintaining costly dedicated instrumentation.

Access PCT provides confidence in results and improved patient care through:

- >95 percent overall agreement with predicate method for accurate assessment of patients at risk of progression to severe sepsis and septic shock
- State-of-the-art sensitivity and low-end precision
  - 20 percent CV LoQ of 0.02 ng/mL
  - CV ≤ 8 percent at concentrations ≥0.150 ng/mL
- Minimal sample draw of 35 µl pick-up volume

### Beckman Coulter – Access 2 Immunoassay System



**Dimensions:** 500 × 900 × 610 mm (h × w × d)  
**Weight:** 91 kg  
**Sample throughput:** Up to 100/h  
**Assays:** > 50 pre-programmed, bar-coded immunoassay methods

**Highlights:** Designed to have the robustness of a reference-lab immunoassay analyzer in the convenient size of a benchtop instrument, the Access 2 delivers quality, reliability and speed without sacrificing valuable floor space. The Access 2 features an extensive immunoassay diagnostic-testing menu of more than 50 tests including AMH and TSH (3rd IS).

- Standardized reagent and assay testing menus can be used across all immunoassay platforms to drive laboratory efficiency and provide consistent results across healthcare networks

### Beckman Coulter – UniCel Dxl 800 Access Immunoassay System



**Dimensions:** 1,700 × 1,710 × 970 mm (h × w × d)  
**Weight:** 630 kg  
**Sample throughput:** Up to 400 tests/h  
**Assays:** > 50 preprogrammed, bar-coded immunoassay methods

**Highlights:** The UniCel Dxl 800 includes proven chemiluminescent technology and one of the highest throughput systems available on the market. High volume labs can decrease process steps and improve turnaround time by simplifying and automating immunoassay testing to a single platform.

- Beckman Coulter's immunoassay instruments have common software interfaces and consumables across the whole family, enabling operators to train more quickly, minimize inventory, and ensure consistency in results across platforms

### Fujifilm Wako – Autokit CH50 Assay



**Assays:** Quantitative determination of total complement activity (CH50) in human serum

**Highlights:**

- In vitro diagnostic homogeneous liposome immunoassay
- Applicable to automated analyzers
- Precise and accurate
- Stable, extended calibration stability
- Good correlation with Mayer's hemolytic method

## Fujifilm Wako – $\mu$ TASWako i30



**Dimensions:** 520 × 550 × 600 mm (w × h × d)  
**Weight:** 71 kg  
**Sample throughput:** 25 tests/h  
**Assays:** AFP/AFP-L3, DCP

- Highlights:**
- Electrokinetic Analyte Transport Assay (EATA)
  - High sensitive fluorescence detection
  - Assay precision less than 3% CV for AFP-L3
  - Increased sensitivity of liver cancer (HCC) detection by combined use of AFP, AFP-L3 and DCP
  - Unique system to calculate the GALAD score (Gender, Age, AFP-L3, AFP, DCP) for outstanding performance regarding early HCC recognition
  - Improved chance of detecting HCC early during surveillance of patients at risk

## Genrui – PA120



- Highlights:** Trustable at its accuracy: PA120 is an auto specific protein analyzer with high efficiency and accuracy. Based on proven nephelometry, PA120 has great performance. Also, the large touch screen, one-press operation and multi-item combinations will offer you a fast and convenient testing experience.

Currently following tests are available: HbA1c, FDP, D-Dimer, NGAL, RBP,  $\beta$ 2-MG, CYS-C, mALB, CRP, hs-CRP, SAA, IgA, IgM, IgG, IgE, C3, C4, ASO, RF, CCP, PG I, PG II  
 More tests are in development

## Mindray – CL-900i Chemiluminescence Immunoassay System



**Sample throughput:** Up to 180 tests/h  
**No of channels:** 15  
**Assays:** 68  
**Dimensions:** 860 × 740 × 560 mm (w × h × d)  
**Weight:** 130 kg

- Highlights:**
- High throughput up to 180 tests per hour
  - One of the smallest benchtop CLIA analyzer
  - Reagent capacity with 15 positions
  - Single cuvette system
  - Dual substrate and automatically switch the empty one
  - Intuitive software interface, easy access to all functions
  - Continuously loading of Intelligent consumables management reagents and consumables

## Mindray – CL-1000i/1200i Chemiluminescence Immunoassay System



**Sample throughput:** Up to 180 tests/h  
**No of channels:** 25  
**Assays:** 68  
**Dimensions:** 1,400 × 760 × 600 mm (w × h × d)  
**Weight:** 225 kg

- Highlights:**
- High throughput up to 180 tests per hour
  - Benchtop analyzer
  - Large reagent capacity with 25 positions
  - Sample rack system
  - STAT lane
  - Single cuvette system
  - Dual substrate and automatically switch the empty one

## Immunoassays

### Mindray – CL-2000i Chemiluminescence Immunoassay System



<b>Sample throughput:</b>	Up to 240 tests/h
<b>No of channels:</b>	36
<b>Assays:</b>	68
<b>Dimensions:</b>	2,150 × 1,020 × 1,200 mm (w × h × d)
<b>Weight:</b>	750 kg

- Highlights:**
- High throughput: up to 240 tests per hour
  - Measurement principle: enhanced ALP-AMPPD method
  - Reagent carousel: 36 reagent positions with non-stop refrigerating
  - Sample handling: up to 300 samples can be loaded in one batch, sample loading and offloading continuously by sample racks, fast prioritizing STAT samples
  - Continuously loading of reagents, substrate, cuvettes, wash buffer and waste bags

### Mindray – CL-6000i Chemiluminescence Immunoassay System



<b>Sample throughput:</b>	Up to 480 tests/h
<b>No of channels:</b>	36
<b>Assays:</b>	68
<b>Dimensions:</b>	2,150 × 1,166 × 1,300 mm (w × h × d)
<b>Weight:</b>	580 kg

- Highlights:**
- Industrial highest throughput: up to 480 tests per hour
  - Measurement principle: enhanced ALP-AMPPD method
  - Reagent carousel: 36 reagent positions with non-stop refrigerating
  - Sample handling: up to 300 samples can be loaded in one batch, sample loading and offloading continuously by sample racks, fast prioritizing STAT samples
  - Continuously loading of reagents, substrate, cuvettes, wash buffer and waste bags
  - Zero daily maintenance

## Integrated Systems

### Mindray – SAL 6000 Modular System



<b>Sample throughput:</b>	Chemistry up to 1,200 tests/h (including ISE), Immunology up to 240 tests/h
<b>No of channels:</b>	68 (Chemistry) / 36 (Immunology)
<b>Assays:</b>	132

- Highlights:** The SAL 6000 is a high performance chemistry and immunology integrated system, combining BS-800 chemistry analyzer, CL-2000i immunology analyzer and the SPL 1000 sample process line. The system offers a large capacity of 300 samples with continuous loading by racks. It supports onboard sample pretreatment for HbA1c testing.

### Mindray – SAL 9000 Modular System



<b>Sample throughput:</b>	Chemistry up to 2,200 tests/h (including ISE), Immunology up to 480 tests/h
<b>No of channels:</b>	67 (Chemistry) / 36 (Immunology)
<b>Assays:</b>	132

- Highlights:** The SAL 9000 is a high performance chemistry and immunology integrated system, combining BS-2000 chemistry analyzer, CL-6000i immunology analyzer and the SPL 1000 sample process line. The system offers a large capacity of 300 sample positions and supports non-stop continuous sample loading. It offers a large capacity of 600 samples with continuous sample loading by racks, dedicated STAT channel, and sample tray direct loading and offloading.

## Siemens Healthineers – Dimension EXL Integrated Chemistry Systems



**Sample throughput:** Up to 440 photometric tests, 187 IMT tests and 167 immunoassay tests per hour

**Highlights:** The Dimension EXL systems integrate chemistry and immunoassay testing to drive results. Simplify lab operations in any location with a compact system performing a comprehensive menu of chemistry and immunoassays. Improve workflow efficiency with the ability to load any tube, any place, any time. Gain better outcomes with fast assay times for critical results, such as High-Sensitivity Troponin I in only 10 minutes and electrolytes in < 1 minute.

Product availability varies by country.

## Siemens Healthineers – Atellica Solution



**Highlights:** Atellica Solution: Flexible, scalable, automation-ready immunoassay and chemistry analyzers engineered to deliver control and simplicity so you can drive better outcomes. Experience the power of the Atellica Solution, featuring patented bidirectional magnetic sample transport technology, the flexibility to create over 300 customizable configurations, and a broad assay menu with proven detection technologies.

Product availability will vary by country.

## Mass Spectrometry

### Shimadzu – LCMS-8060NX (RUO)



**Dimensions:** 1,180 × 540 × 610 mm (w × d × h)

**Weight:** 140 kg

**Highlights:** The LCMS-8060NX delivers high sensitivity and ultra fast analysis speed together with robustness and high flexibility. Developed on the base of the LCMS-8060, it incorporates a newly designed ion source IonFocus to boost ion transfer to the mass spectrometer and increase even more the robustness of the system for complex biological matrices in daily analysis. The system perfectly suits to high sensitivity applications like steroids, catecholamines, and metabolomics studies in clinical research.

### Shimadzu – LCMS-8060 CL



**Dimensions:** 1,180 × 540 × 610 mm (w × d × h)

**Weight:** 140 kg

**Highlights:** The LCMS-8060 CL delivers the highest sensitivity and fastest analysis speed of any LCMS on the market today. A newly developed UF-Qarray boosts ion intensity but suppresses noise. By improving the ion sampling device, the ion guide, and vacuum efficiency, Shimadzu has achieved an unprecedented sensitivity in quantitative analysis by LC/MS/MS while keeping high robustness for daily analysis.

## Mass Spectrometry

### Shimadzu – LCMS-8050 CL



**Dimensions:** 1,180 × 540 × 610 mm (w × d × h)

**Weight:** 140 kg

**Highlights:** Triple Quadrupole Mass Spectrometry is the method of choice for quantification of trace-level analytes in complex samples for a variety of applications including clinical research, forensic, toxicology, pharmacokinetics. Combined with our world-leading UHPLC systems, and maintaining Shimadzu's proprietary ultrafast technologies (UFMS), which include high-speed MRM transitions, MS/MS acquisition, and ultra-high speed polarity switching, the LCMS-8050 can dramatically improve analytical throughput.

### Shimadzu – LCMS-8045 CL



**Dimensions:** 1,180 × 540 × 610 mm (w × d × h)

**Weight:** 140 kg

**Highlights:** The LCMS-8045 offers the proven high sensitivity, high speed and robustness of Shimadzu's UFMS series to provide highly reliable data for applications that demand the sensitivity and speed of a mass spectrometer, such as for simultaneous analysis used in the clinical research field. Due to the heated-ESI probe and UFSweeper II collision cell, it offers the highest sensitivity in the middle-range class (UFsensitivity).

### Shimadzu – nSMOL Antibody BA Kit



**Assays:** 100

**Highlights:** nSMOL is a proprietary, innovative technique from Shimadzu, enabling selective proteolysis of the Fab region of monoclonal antibodies. The nSMOL Antibody BA Kit is a ready-to-use reagent kit for collecting monoclonal antibodies from blood or other biological samples using immunoglobulin collection resin, and then performing selective proteolysis of the Fab region of these antibodies via FG beads Trypsin DART. Fab-derived peptide fragments produced by limited digestion can then be quantified via LC-MS/MS.

## Electrophoresis / Chromatography

### Shimadzu – HPLC/UHPLC (RUO or CE-IVD)



**Highlights:** Shimadzu is offering a wide range of solutions in liquid chromatography starting from standard HPLC systems to high end UHPLC systems including compact configurations. Available with several options for columns switching, pre-concentration, online SPE, etc, the systems are also well recognized for coupling with highly sensitive detectors like fluorescence, radio-activity, electrochemical, or mass spectrometry. To increase throughput with mass spectrometers, Shimadzu offers the Nexera-MX configuration.

## Plasma Protein Testing

### Siemens Healthineers – BN II System



**Sample throughput:** Effective: Approx. 130 tests/h depending on the assay mix  
Nominal: 225 tests/h

**Assays:** More than 60 programmed assay protocols

**Weight:** Analyzer: 150 kg

**Highlights:** The BN II System is an easy-to-use, reliable nephelometric analyzer that offers a broad range of protein assays.

- Connectivity options to Apto Automation and FlexLab Automation solutions
- Fully automated assay processing: from reading of sample tube bar codes to reporting of results
- Routine and specialty assay consolidation
- Innovative markers including monoclonal kappa and lambda free light chains (FLC), cystatin C, beta-trace protein (BTP), and carbohydrate-deficient transferrin (CDT)

### Siemens Healthineers – Atellica NEPH 630 System



**Sample throughput:** Effective: Approx. 65 tests/h depending on the assay mix  
Nominal: 100 tests/h

**Assays:** More than 60 programmed assay protocols

**Weight:** Analyzer: 115 kg

**Highlights:** The Atellica NEPH 630 System is a mid-volume dedicated nephelometric analyzer that simplifies lab operations in specialty protein testing.

- Innovative assays including free light chains (FLC), carbohydrate-deficient transferrin (CDT), and beta-trace protein (BTP)
- Sophisticated antigen-excess pre-reaction protocols provide more accurate results and fewer repeats

Not available for sale in the US. Product availability may vary from country to country and is subject to varying regulatory requirements

## Drug Testing

### Siemens Healthineers – Viva-ProE System



**Sample throughput:** Up to 133 EMIT tests per hour with two reagents;  
Up to 65 EMIT tests per hour with three reagents

**Weight:** Approx. 93 kg / 205 lbs (excl. monitor arm and panel PC)

**Highlights:** A flexible approach to dedicated drug-testing analysis, the Viva-ProE System provides greater ease of use, workstation efficiency, and a full drug-testing menu, all in one powerful benchtop system that is supported by unrivaled Syva experts. The system offers peltier cooling for efficient reagent use, can run up to 133 Emit tests per hour and 12 Emit assays simultaneously; 120 tests can be programmed with 10 open test channels. Results available within 10 minutes of processing.

## Urine Screening

### Greiner – Vacuette Urine CCM Tube



**Highlights:**

- For use in microbiology testing
- Stabilizes sample for up to 48 hours at room temperature
- High solubility of additive in powder form
- Immediate stabilization of sample after gentle mixing

## Urine Screening

### Sarstedt – Urine V-Monovette, Monovette, tubes & containers



- Highlights:**
- The diverse, user-friendly products for urine collection offer pre-analytical and post-analytical solutions thanks to their simple, hygienic use. Our range of conical urine tubes is ideally suited for sediment recovery and subsequent microscopic analysis.
  - Urine-Monovette: For hygienic and needle-free urine collection, transport and analysis.
  - V-Monovette Urine: For enclosed urine transfer. Optimal hygienic and convenient handling.

### Sysmex – UC-3500



- Sample throughput:** Up to 276 samples/h  
**Dimensions:** 829 × 638 × 709 mm (w × h × d)  
**Weight:** 75 kg

- Highlights:**
- Fully automated urine chemistry analysis
  - High throughput
  - Up to 16 parameters
  - mALB + CRE on a routine test strip
  - Combination with the UF-5000 and the UD-10 for an optimal, fully automated urinalysis workflow

### Sysmex – UF-5000



- Sample throughput:** Up to 105 (urine), 20 (body fluids) samples/h  
**Dimensions:** 855 × 760 × 754 mm (w × h × d)  
**Weight:** 90 kg

- Highlights:**
- Fully automated urine particle analysis
  - 28 clinically relevant parameters for urinalysis
  - Bacteria quantification and indication of gram typing
  - Subclassification of EC and CAST
  - Body fluid mode integrated as standard
  - Nine parameters incl. bacteria count and WBC differentiation in BF mode

### Sysmex – UN-Series



- Dimensions:** 872 × 1,918 × 901 mm (w × h × d)  
**Weight:** 269 kg

- Highlights:**
- Fully automated urinalysis workflow solution
  - Combines digital imaging, particle and chemistry analysis (UD-10 / UF-5000 / UC-3500)
  - Modular and scalable – connect up to nine devices
  - Maximum flexibility – set up the workflow you need
  - Intelligent data management with rule-based workflow

## Rapid Testing

### Greiner – Saliva Collection System



- Highlights:**
- Simple reproducible saliva collection
  - Internal standard (tartrazine) enables donor-specific quantification
  - No absorption of analytes
  - Sufficient sample volume for A and B sample splitting
  - Determination of biomarker ( $\alpha$ -amylase, cortisol) possible to enable indication of sample adulteration
  - No detergents which interfere with analysis

### Sarstedt – Blood gas Monovette and capillaries



- Highlights:**
- Blood gas collection systems for arterial, venous and capillary sampling with the smallest sample volumes and Ca<sup>2+</sup> balanced heparin.
  - The Ca<sup>2+</sup> balanced heparin in spray-dosed droplet form enables rapid and optimal mixing of blood and anticoagulants.
- The Blood gas Monovette is available in 1 and 2 ml options and has been designed for venous and arterial blood collection. The blood gas capillaries offer a nominal volume range of 100 – 175 µl.

## Research Use Only (RUO)

### Shimadzu – CLAM-2030

**Dimensions:**

670 × 700 × 1,190 mm (w × d × h)

**Weight:**

185 kg

**Assays:**

Immunosuppressants, Vitamin D, Steroids, Antiepileptics, Antiarrhythmics drugs, Amiodarone, Drugs of Abuse, Antidepressants, Neuroleptics



- Highlights:** CLAM-2030 provides users seamless integration of automated sample preparation with LC-MS/MS to improve data quality, sample throughput, laboratory efficiency and safety. Simple workflows allow users to go from blood collection tubes to results without any additional sample handling. Each sample is processed successively in parallel, to optimize instrument usage. Easy to access software for management of reagents, calibration curves, control samples and maintenance ensure reliability and quality of results.

# Hematology

Blood Cell Counter  
Integrated Hematology  
Microscopy  
Hemostaseology

**ABMEDICAL**

  
analyticon

 **BECKMAN  
COULTER**

  
**greiner**  
BIO-ONE

diatron ●●



## Blood Cell Counter

### Analyticon Biotechnologies – Hemolyzer 3 NG / Hemolyzer 5 NG

**Dimensions:**

216 × 320 × 280 mm (w × d × h)

**Weight:**

Up to 9.4 kg

**Sample throughput:**

Up to 60 tests/h



**Highlights:**

- Microfluidic 3-part and 5-part WBC DIFF hematology analyzers
- Gesture-driven interface
- Low sample volume and small footprint offer numerous applications
- Modern connectivity tools and data management allow state-of-the-art result reporting and instrument analysis
- Autosampler with built-in barcode scanner and mixing function available for Hemolyzer 5 NG (closed mode)
- Technical, interpretation and diagnostic flag information

### Beckman Coulter – DxH 500 Family

**Dimensions:**

270 × 404 × 430 mm (w × h × d)

**Weight:**

11.4 kg

**Sample throughput:**

60 samples/h Open vial;  
55 samples/h Cap pierce

**Power consumption:**

< 120 W\*

\*Dependent on model



**Highlights:**

- Designed for low-volume laboratories including clinics and physician offices, the DxH 500 family features unique technology that improves sample flagging by 40%, ensuring better first-pass yield and accurate differentials with as little as 17 microliters of blood. Delivering accurate, rapid and reliable results with such a small drop of blood makes the DxH 500 family ideal for neonate, pediatric, and critical-care patients who are only able to provide a small sample.
- 5-part differential testing in a compact and cost-effective package (27 × 43 cm)
  - Intuitive design with minimal training needed: Only three screen touches to access any menu

### Beckman Coulter – DxH 690T

**Dimensions:**

755.7 × 1,740 × 828 mm (w × h × d)

**Weight:**

254 kg

**Sample throughput:**

Up to 100 samples/h

**Power consumption:**

520 W\*



**Highlights:**

- The DxH 690T offers all the benefits of Beckman Coulter's flagship DxH 900 hematology analyzer to mid-size labs, including an industry leading 93% first pass yield and the Early Sepsis Indicator. The only FDA-cleared hematology biomarker for sepsis, the ESId measures monocyte distribution width to support early detection of life-threatening sepsis for patients in the ED.
- Automate QC processes to complete tasks with 75% fewer steps, and 40% faster software response time, than previous generation mid-volume hematology analyzers
  - Apply extensive sample-specific rule-writing capabilities to automate analysis and standardize SOP sample handling – without the need for middleware

### Beckman Coulter – Early Sepsis Indicator



**Highlights:**

- A first-of-its-kind, hematology-based cellular biomarker, the FDA cleared Early Sepsis Indicator is designed to help emergency department physicians identify patients with sepsis or at risk of developing sepsis within 12 hours of ED presentation.
- Results are automatically reported as part of a routine complete blood count (CBC) with differential for adult emergency department patients
  - Combined with clinical signs and symptoms and WBC results, the Early Sepsis Indicator can inform critical decision making in adults in the emergency care setting

## Diatron – Complete Blood Count Versatility with the Aquila



- Sample throughput:** 60 tests/h  
**Parameters:** 22  
**Dimensions:** 323 × 272 × 366 mm (h × w × d)  
**Weight:** ~16 kg inc reagent pack
- Highlights:**
- Compact size and unique on-board reagent pack requires little storage and work space
  - Three part diff hematology results requiring around 20 µl of blood
  - Closed or open tube mode
  - Portable with an optional battery pack

## Greiner – Vacuette EDTA Tube



- Highlights:**
- EDTA tubes are offered as either K2EDTA or K3EDTA tubes
  - Contain (besides the K2EDTA) an inert barrier gel that is present in the bottom of the tube.
  - Plasma may be aspirated directly from the collection tube, eliminating the need for transfer to another container
  - Vacuette EDTA tubes with separator gel improve the plasma yield and enable plasma to be left in the primary tube
  - This allows stability of certain parameters, when kept under specified conditions.
  - Also available with pre-attached barcode

**mindray**

## CAL 6000 Cellular Analysis Line

New Generation Cellular Analysis Line

Hematology automation within reach



CBC+DIFF: **220** T/H, **120** slides/h



CBC+DIFF: **110** T/H, **120** slides/h



CBC+DIFF: **220** T/H

Mindray's new CAL 6000 integrates both automatic hematology testing and slide making in an accessible bench-top combo. The flexible configurations can meet different automation requirements. The sample processing line combined with **labXpert** can perform automatic re-run & re-flex check and smartly control the sample loading between two units, which is extremely intelligent and user-friendly.



CientificaLab in Sao Paulo, Brazil, faced the same challenges as many high-volume laboratories do, but it has found a tailor-made solution in its recent partnership with Mindray.

## Mindray helps high-volume lab run 2,820,000 hematology tests a year

Owned by one of the largest diagnostic laboratory chains in the world, CientificaLab provides clinical analysis service to 26 hospitals and 883 outpatient units in the Brazil public sector. CientificaLab's headquarters alone performs 3,000,000 different tests per month, with up to 9,000 hematology tests each day – totaling nearly 2,820,000 a year.

The laboratory used to perform all its blood tests on more than a dozen stand-alone analyzers and slide makers, which was low efficient and demanded a lot of manpower.

With overwhelming workload, the staff at the laboratory had to work extremely long hours, with three shifts a day, six days a week. High failure rate of the old instruments posed another daunting challenge, often resulting in extensive downtime.



The staff at CientificaLab have to handle large amount of blood samples that flood in every day.

### CientificaLab's Main Challenges



High failure rate of instruments



Lots of manual steps leading to errors



Low efficiency and long TAT



Heavy workload for lab staff

„We were struggling to improve our productivity while maintaining cost-effectiveness,” said Alisson Marassi, Executive Production Manager at CientificaLab. „So we started looking for a replacement for our older analyzers that is more reliable and,

more importantly, one that can help streamline our workflow.” Having studied the laboratory's challenges, Mindray came up with a hematology automation solution that is tailor-made for CientificaLab.

## Automation improves productivity

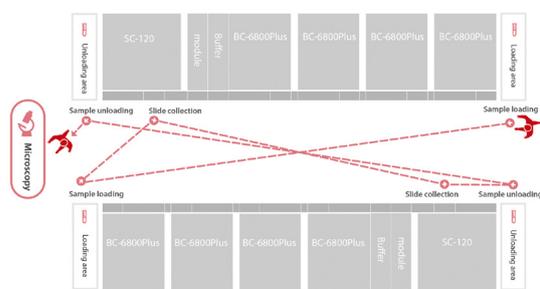
To automate its workflow and improve productivity, Mindray proposed replacing the old stand-alone instruments with two high performance CAL 8000 Cellular Analysis Lines, each connecting four units of BC-6800Plus Auto Hematology Analyzers and one unit of SC-120 Auto Slide Maker and Stainer. Equipped with the labXpert data analysis software, the automation lines can automatically validate test results and perform rerun and retest of abnormal hematology samples as per pre-defined rules. This helps reduce the laboratory's manual work substantially and improve its Standard Operating Procedures (SOPs).



The automation lines help the laboratory reduce manual handling and improve work efficiency.

## Customized design optimizes workflow

### Regular design and sample



### Customized design and sample route



### *But how to arrange the two lines in the extremely compact area in a way that can do more with less?*

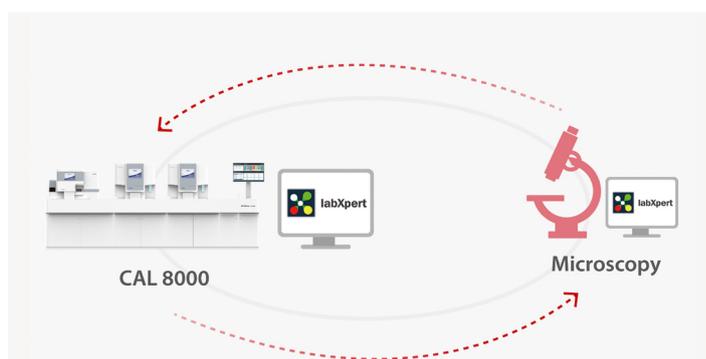
After tracking the laboratory's working path of samples, from collection to testing to microscopic analysis, Mindray provided a customized solution – placing the two automation lines face-to-face, but re-configuring one of them to make its sample route in the same direction

as the other. This special design will enable just one technician to easily handle large amount of samples on both lines at the same time creating the shortest, most time-saving route from sample loading to unloading, all the way to microscopic review and result delivery.



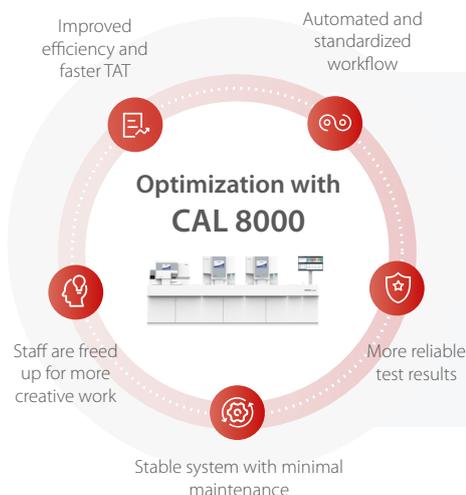
“ By placing one CAL 8000 face-to-face with the other, and adjusting the sample routes in the same direction, we can reduce the number of staff and make the process much simpler. Our processing productivity has improved by 50 percent. ”

Audrei Roberto Bertini  
Production Manager, CientificaLab



During onsite inspection, Mindray team discovered another possibility of helping CientificaLab optimize their workflow. Before installing CAL 8000, the laboratory technicians had to print out the test result of the abnormal sample, and then bring the result along with the slide to the microscopy area for result comparison. These paper documents will be filed away for five years, managing which will be a demanding task. Mindray helped digitalize the process by installing the labXpert software at the microscopy area which allows data transfer and storage within the laboratory information system. Simply by scanning the barcode on the slides, technicians can easily access the information of the test results during microscopic analysis.

## Reliable system enhances efficiency



Higher stability and reliability of the CAL 8000 system have also brought significant benefits for CientificaLab in terms of enhanced efficiency and faster TAT. The laboratory used to have eleven stand-alone instruments that always had breakdown issues, with uptime of only around 60 to 70 percent. „Waiting for engineers to repair or spare parts to be sent could take days. It had a huge impact on our daily routine,” said Ms. Fabiana.

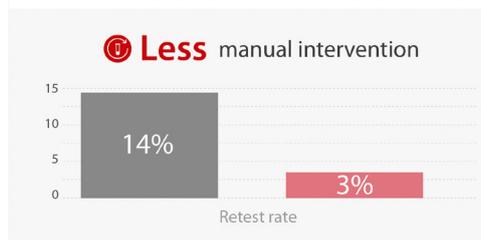
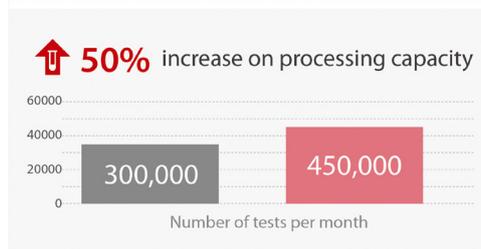
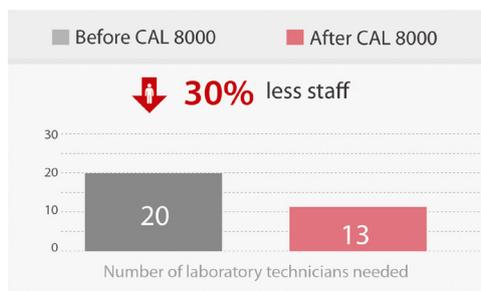
With the introduction of the two customized CAL 8000, CientificaLab has achieved significant improvement in both production capacity and cost-effectiveness.

The introduction of CAL 8000 with its reliability and stability has been a gift for the laboratory. „In very few cases, if the Mindray analyzers have got some failure issue, it will be fixed on the very same day or no later than on the next day by Mindray or its local distributor.” „Also it’s important to mention that the full capacity of just one CAL 8000 is superior to the previous 11 instruments. So with two Mindray automation lines working in good condition, the performance of our lab has increased a lot,” added the Hematology Supervisor.



“With the introduction of CAL 8000, we have increased our testing capacity. The SC-120 Slide Maker and Stainer makes slides for microscopic analysis, and then the results will be automatically validated and ready to report.”

**Fabiana Gomes Lancellotti**  
Hematology Department Supervisor, CientificaLab



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To learn more about Mindray CAL 8000, please visit:  
[www.mindray.com/en/product/CAL\\_8000\\_NEW.html](http://www.mindray.com/en/product/CAL_8000_NEW.html)

## Blood Cell Counter

### Improve Medical – Improvacuter Gel & EDTA.K2 Tube

#### Highlights:

- Apply for nucleic acid testing which greatly shorten the window period of serological tests, and eliminate the false negative caused by serological tests
- Sprayed EDTA K2 additive, avoid plasma dilution, dissolve adequately, prevent haemolysis of specimens
- Inert separation gel, separate plasma from blood cells, avoiding specimen variation
- Specimen is collected, transported and preserved within 1 tube
- Extend the preservative time of the sample for more than 72 hours
- The tube is sterilized, pyrogen free, DNase and RNase free
- Manufactured in 100,000 Grade GMP workshop, with strict process control



### Mindray – BC-6800Plus Auto Hematology Analyzer



**Sample throughput:** CBC+DIFF 200 t/h, RET 120 t/h, BF 40 t/h

**Highlights:** BC-6800Plus is currently the fastest standalone hematology analyzer in the world, which can process 200 CBC+DIFF samples/h and 120 RET samples/h. Notably, the ERP channel can provide more research parameters such as MChR and HDW, which can help early diagnosis of various types of anemia

### Mindray – BC-6200/6000 Auto Hematology Analyzer



**Sample throughput:** Up to 110 t/h

- Highlights:**
- Unique SF Cube 3D cellular analysis technology for WBC 6-part diff count including IMG
  - NRBC in every CBC+DIFF result
  - Automatic rerun & reflex in case of abnormal results
  - BC-6200 with RET channel can provide optional Reticulocytes and PLT-O parameters and perform automatic 8-times PLT-O counting for thrombocytopenia samples

### Siemens Healthineers – Advia 360, 560, and 560 AL Hematology Systems



**Dimensions:** 360 × 316 × 492 mm (h × w × d)  
520 × 410 × 490 mm (h × w × d)

**Sample throughput:** Approx. 60 tests/h

**Parameters:** 22 – 26 parameters\*  
3- or 5-part white cell differential

**Highlights:** The Advia 360, 560, and 560 AL Hematology Systems provide laboratories with intuitive, easy-to-use, and scalable hematology solutions designed to offer the right fit for every lab. Each system delivers fast, reliable, and accurate CBC and white cell differential testing with the performance and adaptability that low- and mid-volume labs need. The optional autoloader on the Advia 560 AL System streamlines automatic sampling for even greater workflow efficiency.

\*Not all parameters are available in the U.S.

## Blood Cell Counter

### Siemens Healthineers – Advia 2120i Hematology System



- Dimensions:** 860 × 1,410 × 680 mm (h × w × d)
- Sample throughput:** Up to 120 samples/h
- Parameters:** CBC incl. NRBC, 6-part white cell differential, reticulocytes, body fluids, and comprehensive morphology results
- Highlights:** The Advia 2120i Hematology System with Autoslide streamlines workflow by eliminating the majority of manual steps commonly performed to maximize productivity. Its unique testing methodology optimizes results while offering the simplicity and flexibility you need for easy integration into your lab. With connectivity to Aptio Automation, it supports accurate, fast, sample processing with fully customizable, user-defined features.

### Sysmex – XN-1500 (Count. Smear. Stain. All-in-one haematology)



- Sample throughput:** XN-module  
CBC+DIFF: up to 100 samples/h,  
up to 40 samples/h in BF mode  
SP-50 module  
SP-50: up to 30 slides/h in S mode,  
up to 75 slides/h in H mode
- Dimensions:** 1,006 × 1,053 × 855 mm (w × h × d)
- Weight:** 211 kg
- Highlights:**
- Fully integrated slide maker & stainer SP-50
  - Flexible throughput depending on the workload
  - Automatic Reflex measurement in case of unreliable results
  - Reduced time for the preparation of the slides
  - Minimum need for manual tasks and less biohazard procedures
  - Small footprint
  - Optional integration of digital imaging module DI-60
  - Reduced sample volume (for the smear preparation)
  - Staining protocols (SP-50):  
May Grünwald – Giemsa, Wright – Giemsa, Wright

### Sysmex – XN-L Series



- Sample throughput:** CBC + DIFF up to 70 samples/h with the optional Speed-up licence  
CBC + DIFF up to 60 samples/h on XN-L Pure
- Dimensions:** 440 × 440 – 510 × 460 – 660 mm (w × h × d) (depending on model)
- Weight:** 35 kg (XN-L Pure, XN-350, XN-450);  
53 kg (XN-550 incl. sampler);  
3 kg (XN-550 monitor)
- Highlights:**
- XN-L Pure, XN-350: Single sample analysis in open mode
  - XN-450: Single sample analysis in closed or open mode
  - XN-550: Automated sampler analysis for increased workflow productivity: Rerun & Reflex and continuous loading
  - XN quality. Cost-effective. Plus full support
  - Upgrade from Three-part to Five-part differential at a price you can afford
  - WBC differential includes immature granulocyte count
  - Add reticulocyte and body fluid analysis as needed\*
  - A perfect secondary analyser\*
- \*excluding XN-L Pure

## Integrated Hematology

### Mindray – CAL 8000 New Generation Cellular Analysis Line



- Sample throughput:** CBC+DIFF 200-800 t/h, 0-240 slides/h
- Highlights:** Compared with old product, new CAL 8000 is equipped with more powerful BC-6800Plus analyzers and upgraded sample processing line. There are totally 8 configurations of the new CAL 8000 including 110, 200, 300, 400, 210, 310, 410, 420, where the first digit and second digit mean the amount of BC-6800plus & SC-120 in the line. Besides, buffer module, start/stock yard and turn module also cater to labs with special needs.

## Beckman Coulter – DxH 900 Hematology Analyzer

**Dimensions:**

755.7 × 1,740 × 828 mm (w × h × d)

**Weight:**

254 kg

**Sample throughput:**

Up to 100 samples/h

**Power consumption:**

520 W



**Highlights:**

The DxH 900 hematology analyzer is ideal for mid- to high-volume clinical laboratories performing complete blood count and white blood cell differential tests while minimizing repeat testing, allowing you to deliver the right results the first time.

- Achieve superb RBC, PLT and WBC differentials through near native-state cellular characterization and precise flagging
- Optimized processes help your laboratory maximize staff time through fewer slide reviews, automated QC, and longer walkaway and system uptime
- Most reportable results per square meter with industry-leading 93 percent first-pass yield and a > 40 percent smaller footprint than competitive instruments
- Exclusive Early Sepsis Indicator: a one-of-a-kind FDA cleared hematologic biomarker designed to help emergency department physicians identify sepsis sooner

## Sysmex – XN-3100 DI



**Sample throughput:**

CBC+DIFF:  
Up to 200 samples/h,  
Up to 40 samples/h in BF mode per module  
SP-50:  
Up to 30 samples/h with standard model,  
Up to 75 samples/h with high throughput model

**Dimensions:**

3,000 × 1,626 × 1,150 mm (w × h × d)

**Weight:**

1,020 kg

**Highlights:**

- Fully integrated slide maker & stainer
- Choose Advanced Clinical Parameters as needed
- Extended IPU for maximum workflow optimisation
- Automatic Rerun & Reflex measurement for challenging samples
- Integrated backup concept
- Digital Imaging (DI) module:
  - Seamless integrated morphology analysis of slides
  - Efficient, detailed review and validation for greater accuracy
  - Faster, improved workflow
  - Long-term storage and archiving of cell images
  - Consistency in analysis quality

## Sysmex – XN-9100 Sorting & Archiving



**Sample throughput:**

CBC+DIFF:  
From 200 samples/h,  
From 40 samples/h in BF mode per module

**Dimensions:**

Depending on configuration

**Weight:**

Depending on configuration

**Highlights:**

- Scalable and modular haematology automation line
- Flexible configuration of XN analysis modules and rack entry and exit positions
- Extended IPU for maximum workflow optimisation
- Uninhibited workflow from routine to specialised testing
- Automatic reflex measurement in case of unreliable results
- Choose Advanced Clinical Parameters as needed
- Advanced sample management with TS-10: sorting for subsequent destinations and automated archiving of samples
- Optional integration of ESR and HbA1C analysis

Introducing CN-Series:

## Power in a new dimension for the haemostasis lab



### Growing expectations to be met

Many hospitals and their laboratories are facing an array of challenges, such as the ongoing cost pressure, consolidation of sites, the need to shorten patient retention times, and regulatory and accreditation requirements. The widespread occurrence of new diseases (tropical, chronic and environmental) and innovations in medical treatment call for new tests and awareness of the effects this has on lab results, and increase the overall clinical complexity. To keep up with this ever-growing diagnostic spectrum and the technical requirements this entails, labs need to continuously evolve, cope with limited space and resources, and increase automation.

All this is true for the haemostasis lab, even more so because the test results serve critical diagnostic and therapeutic decisions – the most recent example perhaps being the importance of coagulation testing in understanding the processes in and managing of severely ill COVID19 patients.

### How can we help?

With our next-generation haemostasis analysers CN-6000 and CN-3000, we believe that we can provide solutions to ease the challenges faced by haemostasis labs today. The analysers of the CN-Series can help you to power up your lab. We would like to introduce four aspects in which this power can be experienced.

### Powerful productivity

The need to get your results as fast as possible is answered by CN-Series' ground-breaking throughput of up to 450 (PT) and 401 (PT/APTT) samples/h (CN-6000). This speed is achieved by an

innovative clot detection algorithm and high-pressure rinse system. You may be surprised by CN-Series' small footprint of only 0.54 m<sup>2</sup>. CN-Series supports the consolidation of testing since you can use one instrument for almost all assays – it offers the widest haemostasis test portfolio on a single analyser, making CN-Series really flexible. CN's test portfolio will become even wider with the forthcoming release of two more models, CN-3500 and CN-6500, featuring an integrated CLEIA (chemiluminescent enzyme immunoassay) testing capacity.

CN-Series offers also flexible configurations, from stand-alone models with an optional sampler to an automated track system creating a haemostasis island, or – in future – connected to your TLA system.

### Analytical power

A major aim is to obtain valid results for most samples with a single run. CN-Series analysers support this with sophisticated technology. Understanding that analysis quality depends on sample quality, Sysmex was the first manufacturer to introduce pre-analytical checks as standard, leading to more accurate and reliable results. Problematic sample conditions may influence diagnosis and treatment, so it is important to identify them up front, for which CN-Series uses the proven HIL and sample volume checks. CN-Series also helps you obtain reliable results from turbid samples through its LED multi-wavelength technology with wavelength and gain switch.

For specific diagnostic questions, CN-Series offers a variety of supportive analytical functionalities, such as multi-dilution analysis (MDA), clot waveform analysis (CWA) and cross-mixing

tests. Bringing coagulation factor testing in line with guidelines, MDA helps to distinguish a real factor deficiency from a deficiency caused by anti-factor inhibitors or prolonged results due to lupus anticoagulants. CWA helps in identifying atypical *in vitro* clot reactions that may occur with haemophilia, sepsis or DIC patients, and it also supports the detection of anomalies in the reaction due to interference (e.g. early reaction error). And CN's cross-mixing function makes inhibitor testing more convenient and closer to the standard (Nijmegen-Bethesda assay), while the automatic dilutions of agonists used for platelet aggregation analysis increase the analytical consistency – and the convenience.

## Operational power

Anything that frees lab staff from analyser hands-on time is welcome. CN-Series was designed with this in mind. Its operation principle is simply based on three buttons, and there are several automated functions such as auto QC, start-up, backup, re-dilution, re-analysis, and reflex testing that extend walk-away time. You can use CN's reagent statistics and consumption prediction to make sure your routine runs smoothly without having to attend to the instrument. Finally, you will spend less time on maintenance thanks to a highly durable piercer<sup>1</sup>, which also reduces the sample dead volume to 65 percent, and long-life LED technology<sup>2</sup>.

## Powerful services

Peace of mind can be a great asset. CN-Series is there to perform. You can trust in your instrument's availability with its pro-active maintenance preventing analyser downtime. And should problems occur, you can resolve them quickly thanks to remote support and guided troubleshooting. All this is based on Sysmex's experience in diagnostics for over 50 years, including best-in-class knowledge provision with Sysmex Academy training courses and webinars.

## Summary

The CN-Series instruments help busy haemostasis labs ease the burden of today's challenges. CN's high throughput together with its compact size and wide assay portfolio increase lab productivity and accelerate the time to results, while operation is very convenient with manual tasks reduced to a minimum, freeing up time for the operators. Prospective reagent management and pro-active maintenance help to avoid unnecessary interruptions of the daily routine, and the technological quality and spectrum of the analytical functions ensure a maximum of reliable results, serving as the basis for confident decision-making, even in critical clinical situations. ■

<sup>1</sup>Three times the life of the previous type | <sup>2</sup>Thirty-six times the life of a halogen lamp

### CN-Series: nearing 360° in haemostasis testing

Besides the full range of routine testing, CN runs a wide spectrum of specialty tests such as platelet aggregation, DOACs, and chromogenic FVIII and FIX assays:

- Haemophilia assays including the ability to monitor latest pharmacological treatment with emicizumab for haemophilia A patients: FVIII chromogenic assay or diluted FVIII clotting assay (customer application only)
- Thrombophilia assays
- Antithrombotic assays
- Fibrinolytic assays
- Antifibrinolytic assays
- Inhibitor assays (heparins, VKA, DOACs) including the ability to monitor all DOACs approved for the EU market
- Platelet aggregation assays including the unique PAL (platelet aggregation level) score function

CN-Series – flexible and scalable to your needs



## CONTACT

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 segcoagsupports@sysmex-europe.com  
 www.sysmex-europe.com

## Microscopy

### Hund – H 600 AFL 100



- Highlights:**
- H 600 AFL 100 is a versatile laboratory microscope for use in immunology and microbiology.
  - User can easily switch between transmitted-light brightfield and incident-light fluorescence – and can also employ both contrasting techniques simultaneously
  - HBO excitation lamp allows installation of full range of fluorescence filter sets for all kinds of fluorophores
  - Filter slides available for 2/4 filter sets
  - Objectives 10:1/40:1/100:1 Oil
  - Trinocular tubes with adapters for C-Mount cameras available

## Hemostaseology

### AB Medical – V-Tube Trisodium Citrate 9:1



**Dimensions:**  
13 x 75 mm – 2.7 / 1.8 ml volume

- Highlights:**
- The ratio of blood to anticoagulant is 9:1
  - Perfectly maintain the ratio (9NC) with double layered tubes
    - External PET tube: maintain vacuum
    - Internal PP tube: minimize additive evaporation
  - Paper or transparent label available
  - Stable and efficient Push-fit Safety Cap: Six-Crown Rib Grip (Korea Patent)
  - Made in South Korea

### Greiner – Vacuette Coagulation Tube



- Highlights:**
- With safety twist cap for an easy manual opening as well as automated opening using decapping instruments
  - Correct mixing ratio of venous blood a sodium citrate is ensured during blood collection, so that the tube contains one part sodium citrate solution to nine parts blood
  - Double-walled technology: the inner tube is made out of polypropylene (PP) and prevents the citrate solution from evaporating; the outer tube is made of polyethylene terephthalate (PET) and ensures a long shelf-life for the vacuum

### Sarstedt – S-Monovette ThromboExact – Pseudothrombocytopenia



- Highlights:**
- The S-Monovette ThromboExact has been developed especially for anticoagulant-induced pseudothrombocytopenia. Generally, pseudothrombocytopenia is caused by thrombocyte aggregation. Early detection avoids the consequences of a thrombocytopenia misdiagnosis.

This blood collection tube is validated internally by Sarstedt and externally at the University Hospital Rostock, Germany.

## Sarstedt – S-Monovette Hirudin – Thrombocyte function



**Highlights:** The S-Monovette Hirudin was developed together with the company Verum Diagnostica, today Roche Diagnostics (bought), for measuring thrombocyte activity using the Multiplate multiple platelet function analyser. Unlike citrate or heparin, hirudin works via direct thrombin inhibition, and thus allows thrombocyte function diagnostics in its native state. It is used for monitoring platelet-inhibiting medications during treatment, as well as for detecting or ruling out thrombocyte function disorders.

## Siemens Healthineers – Atellica COAG 360 System



**Sample throughput:** PT and APTT: 350 (simultaneous analysis)  
**Dimensions:** 1,858 × 1,042 × 1,415 mm (w × h × d), without LAS connection  
 2,156 × 1,042 × 1,415 mm (w × h × d), with LAS connection  
**Weight:** 600 kg (without LAS connection)  
 617 kg (with LAS connection)

**Highlights:** The Atellica COAG 360 System\* offers high-volume specialty hemostasis labs a transformative array of capabilities to streamline and unify hemostasis testing:

- Five methodologies—clotting, chromogenic, immunologic, platelet aggregation and high-sensitivity immunoassay (LOCI) testing
- Primary-tube sample-volume checks, advanced assay-specific sample quality checks for hemolysis, icterus and lipemia (HIL) interference.
- Intelligent reagent and consumable management

\*Not available for sale in the US

## Siemens Healthineers – Sysmex CA-600 Systems



**Dimensions:** Approx. 490 × 566 × 490 mm (h × w × d)  
**Sample throughput:** Approx. 60 PT tests/h  
**Weight:** Approx. 43 kg

**Highlights:** The Sysmex CA-600 Systems – with the smallest footprint in their class – are built on a history of proven reliability and provide scalable options for routine and specialty\* coagulation testing.

- Features clotting, chromogenic,\* and immunologic\* measurements with true random access
- Enables critical tests to be processed at any time via STAT sample processing
- Offers the most frequently requested routine and specialty tests, including INNOVANCE D-Dimer\*

\*Sysmex CA-660 System only.

## Siemens Healthineers – Sysmex CS-2500 System



**Dimensions:** Approx. 685 × 1,113 × 895 mm (h × w × d)  
**Sample throughput:** Approx. 180 simultaneous PT/APTT tests/h  
**Weight:** Approx. 140 kg

**Highlights:** The Sysmex CS-2500 System offers mid-volume and multisite hemostasis labs smartly designed technologies for improved efficiency, exceptional accuracy, and reliable first-run results. Equipped with next-generation PSI technologies, the system takes hemostasis testing to the next level.

The Sysmex CS-2500 System offers an expansive test menu of routine and specialty hemostasis assays (including several INNOVANCE assays), all on a single instrument.

## Hemosteasology

### Siemens Healthineers – Sysmex CS-5100 System



**Dimensions:** Approx. 1,280 × 1,576 × 1,150 mm (h × w × d)  
**Sample throughput** Approx. 400 simultaneous PT/APTT tests/h  
**Weight:** Approx. 362 kg

**Highlights:** The Sysmex CS-5100 System offers high-volume and multisite labs smartly designed PSI technology and automation connectivity for streamlined workflow and high-quality test results on the first run. Simultaneous, multiwavelength PSI technology helps labs to identify and manage unsuitable test specimens prior to analysis. The Sysmex CS-5100 System offers an expansive test menu of routine and specialty hemostasis assays (including several INNOVANCE assays).

### Sysmex – CS-1600



**Sample throughput:** Approx. 120 tests/h (PT)  
**Dimensions:** 760 × 540 × 690 mm (w × h × d)  
**Weight:** 85 kg  
**Assays:** 18 simultaneously

**Highlights:**

- Optimised solution for medium-size labs with needs for specialty testing
- Proven, reliable technical performance with advanced CS technology
- High-quality results based on advanced multi-wavelength technology
- Straightforward and easy operation
- Traceability for operation history and results
- Minimal needs for hands-on maintenance

### Sysmex – CN-6000/CN-3000



**Sample throughput:** CN-6000: Approx. 450 tests/h (PT)  
 CN-3000: Approx. 225 tests/h (PT)  
**Dimensions:** 595 × 1,350 × 906 mm (w × h × d) excluding cuvette waste box  
**Weight:** 230 kg  
**Assays:** 60 simultaneously

**Highlights:**

- The highest productivity ever of a Sysmex haemostasis analyser: the fastest throughput with a small footprint
- Routine and specialised testing in a single analyser
- Reliable, high-quality results due to proven multi-wavelength technology and pre-analytical checks
- Smart workflow management for increased usability: test count prediction, automated dilution for platelet aggregation agonists, auto QC
- Scalability: from stand-alone models with different samplers to up to three analysers connected to a track

### Teco – Coatron X



**Dimensions:** 230 × 140 × 90 mm (w × h × d)  
**Power Consumption:** 110 – 240 Vac, 50 – 60 Hz / 5 Vdc, 3.3 A  
**Number Of Channels:** 1 – 4

**Highlights:**

- Highest optical resolution, enlarged optic range, smallest sample and reagent volume 0,1 mOD – 3,500 mOD, just with 75 µL sample and reagent volume
- Complete optical analysis
- No further parts required, like balls, stirrers etc.
- Adaptation of the light level
- Automatic light level adjustment of the optic channels to each sample
- Exclusion of disturbance
- Stray light reduction, exact temperature control, all parameter are preset

# Pathology

Scanner  
Printer  
Histology Equipment  
Information Technology

**DTM**  
medical

**HAMAMATSU**  
PHOTON IS OUR BUSINESS

**KABE**  
LABORTECHNIK

**VMSCOPE**

## Scanner

### Hamamatsu Photonics – NanoZoomer S360



**Highlights:** The NanoZoomer S360, our high end model, delivers exceptional scanning speed for clinical routine. It scans up to 360 slides automatically in one batch.

- Scanning Speed:  
20x mode (15 × 15 mm) approx. 30 s  
40x mode (15 × 15 mm) approx. 30 s
- Capacity:  
360 standard slides
- Check focus defects in scanned images at a glance
- Barcode Reader:  
1D barcode, 2D barcode (option)

### Hamamatsu Photonics – NanoZoomer S210



**Highlights:** The NanoZoomer S210 is our standard model with a reasonable price and excellent cost performance. It has been well balanced among throughput, scanning speed, and price, and boasts the highest sales performance since its launch.

- Scanning Speed:  
20x mode (15 × 15 mm) approx. 60 s  
40x mode (15 × 15 mm) approx. 150 s
- Capacity:  
210 standard slides
- Barcode Reader:  
1D barcode, 2D barcode (option)

### Hamamatsu Photonics – NanoZoomer S60



**Highlights:** The NanoZoomer S60 delivers the perfect combination of flexibility, excellent image quality and high speed scanning. It scans double size slides or standard size slides and supports brightfield and fluorescence imaging.

- Scanning Speed:  
20x mode (15 × 15 mm) approx. 60 s  
40x mode (15 × 15 mm) approx. 150 s
- Capacity:  
60 standard slides, 30 double size slides
- Fluorescence imaging module (option)
- Barcode Reader:  
1D barcode, 2D barcode (option)

## Printer

### DTM Medical – Primera Signature Cassette Printer



**Highlights:** The Signature Cassette Printer is designed for printing text, graphics or bar codes directly onto cassettes, helping to reduce the risk of misidentification of specimens. It is available as a stand-alone, manual printer or as a completely automated system consisting of a printer and a robotic picking system called Autoloader.

- On-demand or batch mode printing
- Black or colour printing
- Cost reduction by inventorying only white cassettes
- Chemical-resistant ink – ensures reliable identification of cassettes
- USB interface – ability to integrate with LIS
- Two years warranty  
(After product registration within six months of purchase)

## DTM Medical – Primera Signature Slide Printer



- Highlights:** The Signature Slide Printer can significantly increase the efficiency of labs while helping to reduce the risk of misidentification of specimens.
- On-demand, full-colour printing – prints only the number of slides needed
  - Prints directly onto slides – eliminates handwriting that is hard to read and labels that are hard to apply
  - Cost reduction by inventorying only white-frosted slides
  - Xylene-, alcohol-, heat- and chemical-resistant ink – ensures reliable identification of slides
  - PTSlide Software allows connection to LIS systems
  - Compact design
  - Two years warranty (After product registration within six months of purchase)

## Histology Equipment

### KABE Labortechnik – Consumables for pathology / histology



**Highlights:**

- Tissue embedding cassettes
- Five variants: standard, universal, biopsy, bionet and laser
  - Available in different colours
  - Without, with separate or with pre-attached hinged lid
  - Available pre-stacked – ready for use in cassette printers
  - High quality material is resistant to solvents, guarantees dimensional stability and offers good writing and printability
  - Comprehensive range of accessories
- Test tubes with formalin solution
- Prefilled with four percent formalin solution
  - Available in different sizes
  - Individual labelling possible

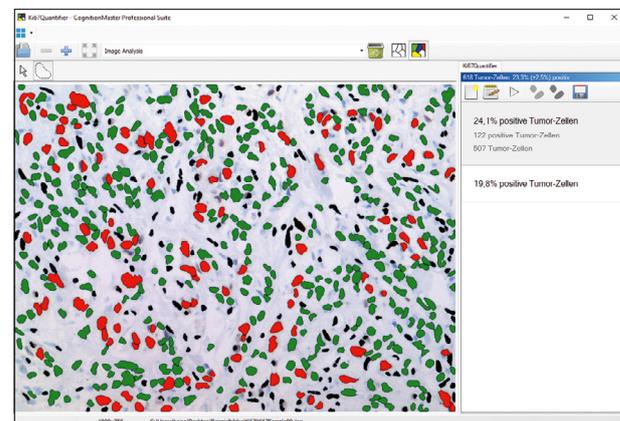
## Information Technology

### Hamamatsu Photonics – NDP.serve3 web slide server



- Highlights:** NDP.serve3 is the image distribution software that efficiently distributes large-volume whole slide images scanned by NanoZoomer series via the Internet and/or Intranet. Access authorities to the image database can be managed. It enables many people to access the database at the same time and supports a wide range of applications, such as image observation from a remote location and student education.
- Options:
- Utilizing information from LDAP server
  - Supporting non-Hamamatsu slide format images
  - Synchronized viewing slides among visitors

### VMscope – CMPS: Ki67, ER, PR, CD3



- Highlights:**
- Fully automatic quantification of Ki67, ER, PR, CD3 and further stains
  - Analysis in less than one second, no user interaction necessary
  - Analysis of WSIs, still images or live images from the microscope camera
  - Ki67 quantification clinically validated
  - Multiple regions per case to take into account the tumor heterogeneity
  - Export of the results into images, MS Excel or other systems
  - Integration into any LIMS system via open interfaces

# DNA

Genrui

 **IMPROVE**

 **Molzym**

 **ORION**  
DIAGNOSTICA

 **Promega**

 **QUIDEL**

 **SARSTEDT**

 **SIEMENS**  
Healthineers

Amplification  
Amplification / Detection  
Extraction  
Infectious Disease  
Infectious Disease /  
Hepatitis  
Sample Collection  
Research Use Only

Amplification

Orion Diagnostica Oy – Orion GenRead



**Assays:** C difficile, campylobacter

**Highlights:** Orion GenRead system is a small benchtop system for molecular pathogen detection, based on proprietary technology SIBA (Strand Invasion Based Amplification).

- Flexibility with 1 – 12 samples in one run
- Fast test results are available in less than one hour
- Ready to use kits contain all needed reagents
- Bi-directional HIS/LIS connectivity
- Portable and robust instrument suitable for various laboratory settings
- CE marked test kits for C difficile and campylobacter. Next: RSV and Influenza A&B

Sarstedt – White Multiply PCR Plates



**Highlights:**

- White wells for improved fluorescence reflection
- Thin-walled reaction tubes for quick temperature transfer
- Free from DNA, DNase, RNase and PCR inhibitors
- Barcode labeling on plates with half or full skirt is available on request

Amplification/Detection

Quidel – Solana - molecular testing platform



**Dimensions:** 150 x 240 x 240 mm (h x w x d)

**Weight:** 4 kg

**Power consumption:** Bordetella pertussis, C. difficile, Group A Strep, Group B Strep, HSV 1+2/VZV, Influenza A+B, RSV + hMPV, Strep A+C/G, Trichomonas, SARS-CoV-2\*  
\*New test in development

**Highlights:** A simplified molecular testing platform with a small footprint, is making molecular diagnostics faster and easier, without sacrificing performance. Solana combines Quidel's proprietary helicase-dependent amplification with fluorescence detection to deliver results you can trust, in an actionable timeframe.

- Ensures molecular sensitivity with moderate complexity
- Testing of 1– 12 samples – single test or batch mode
- Time to result: 25 – 50 min
- Reduced Hands-On-time: 2 – 3 min
- LIS and Middleware capable

Extraction

Genrui – NE48



**Dimensions:** 398 x 428 x 465 mm (w x h x d)

**Weight:** 29.7 kg

**Highlights:** NE48 is a fully-auto nucleic acid extraction Instrument. It is equipped with 9.2-inch touch screen and auto-ultraviolet disinfection module. With the rapid heating/cooling and excellent extraction performance, it brings the user-friendly operation and much convenience for the customer.

- Principle: Auto magnetic bead extraction
- Number of magnetic rod: 48
- Dispensing volume: 20~1,000 ul
- Extraction time: 10~30 min

## Extraction

### Molzym – SelectNA plus: Pathogen Enrichment & DNA Extraction



**Highlights:** SelectNA plus is Molzym's unique platform for the automated enrichment and isolation of bacterial and fungal DNA from various specimens.

- Walk-away pathogen DNA isolation
- Host DNA Depletion (MolySis technology)
- Flexible extraction: 1 to 12 samples
- Sterile body fluids and tissue biopsies
- Internal UV decontamination
- DNA-free consumables & reagents

Kits for the robot are the MolySis-SelectNA plus and the CE IVD marked Micro-Dx for the culture-independent routine pathogen diagnosis including broad-range 16S & 18S rRNA gene detection.

### Promega – Maxwell CSC Instrument



**Dimensions:** 330 x 395 x 300 mm (w x h x d)  
**Weight:** 12 kg  
**Sample throughput:** Up to 16 samples / 40 minutes  
**Handheld/Stationary:** Very small benchtop instrument  
**Assays:** Blood, FFPE (CE-IVD) or plasma, cells, swabs, stool and many others (RUO)

**Highlights:** Nucleic Acid Extraction for In Vitro Diagnostic Use

- Generates consistent, high-quality nucleic acid for use in downstream diagnostic amplification assays
- Works with multiple sample types, e.g. blood, FFPE (CE-IVD) or plasma, cells, swabs, stool and many others (RUO)
- Pre filled cartridges, no cross contamination
- Designed and manufactured under cGMP
- Provides technical elements supporting 21 CFR Part 11 compliance
- Flexible, multi-functional software with separate RUO mode for performing extractions intended for use in research applications

### Promega – Maxwell RSC 48 Instrument



**Dimensions:** 530 x 510 x 220 mm (w x h x d)  
**Weight:** 31 kg  
**Sample throughput:** Up to 48 samples / 22 minutes  
**Assays:** Whole blood, plasma, tissue (fresh, frozen or FFPE), cells, stool, buffy coat, swabs, serum, food, ...

**Highlights:** Automated Nucleic Acid Purification of 1 to 48 Sample

- High-quality nucleic acid purification with minimal steps and little hands-on time
- Process a variety of sample types for downstream applications in molecular diagnostic and for other clinical applications, e.g. PCR, NGS, ...
- Pre filled cartridges, no cross contamination
- UV decontamination and barcode scanner
- Easy to use with integrated touch screen interface
- Intuitive software and integrated vision system for detecting and preventing errors

## Infectious Disease

### Siemens Healthineers – Fast Track Diagnostics Real-time PCR assays



**Highlights:** Siemens Healthineers enables precision medicine, with molecular testing solutions for the detection of major infectious diseases; monitoring of treatment efficacy; and selection of individualized treatment options. Our one-step syndromic real-time PCR products\* simultaneously detect viruses, bacteria, fungi, and parasites, allowing molecular laboratories to lower cost and drive better outcomes.

\*Product availability will vary by country.

**Improve Medical – SARS-CoV-2 Test Kit (Real-time PCR)**

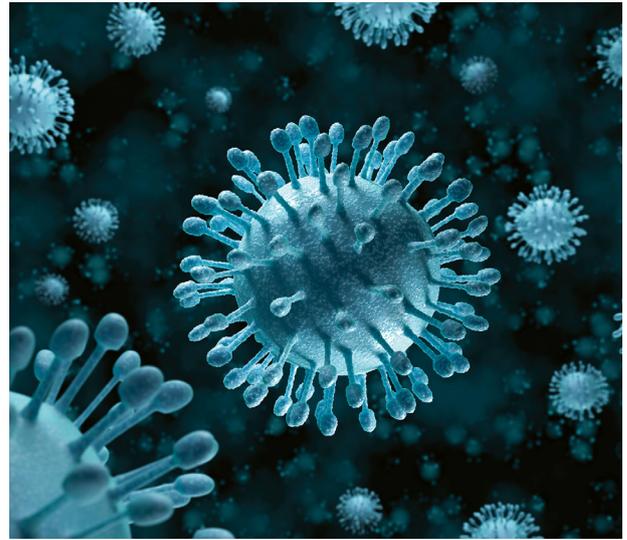


**Method:** Quantitative real-time PCR  
**Target:** ORF1ab/N gene  
**Internal Control:** RNase P  
**Test Channel:** FAM/HEX/ROX  
**Limit of Detection:** 200 copies/ml (95%)  
**Test Time:** 80 min  
**Packing:** 48 T/Kit

**Highlights:** The kit can be operated with the following real-time PCR thermal cycler with FAM, HEX and ROX detection channels: Bio-Rad CFX96, ABI 7500 etc.

**Infectious Disease / Hepatitis**

**Siemens Healthineers – Versant HCV Genotype 2.0 Assay (LiPA)**



**Highlights:** Optimize your laboratory's testing with the widely used Versant HCV Genotype 2.0 Assay (LiPA)\*.

- LiPA utilizes reverse-hybridization technology to detect HCV genotypes 1–6 and subtypes 1a and 1b.
- LiPA provides highly accurate identification of HCV genotypes and subtypes for optimal and personalized patient therapy.

\* LiPA assay is FDA-approved in the U.S. and CE-marked in the EU for IVD use.

**Sample Collection**

**Improve Medical – Improviral Liquid Transport Medium**



**Highlights:** Improviral Viral Preservative Medium (VPM) for collection and preservation of viruses and pathogens. Improviral NAT (Nucleic Acid Test) Medium inactivates microbes and protect nucleic acids.

- Safe specimen collection with microbiological transport swab
- Safe processing
- Safe transportation
- Safe preservation
- Offer premium samples for molecular detection assay, maximize sensitivity

**Research Use Only (RUO)**

**Sarstedt – Low DNA Binding Micro Tubes**



**Highlights:** As the trend towards decreasing sample volumes continues, it is increasingly important to minimize potential interaction between the analyte and tube. Our low protein and new low DNA binding micro tubes are specifically designed to meet the requirements in protein and DNA analytics while maximizing recovery rates.

# Microbiology

**FUJIFILM**

**hund**  
WETZLAR

**OLYMPUS**

Your Vision, Our Future

 **SHIMADZU**  
Excellence in Science

 **sysmex**

Mass Spectrometry  
Identification /  
Susceptibility  
Microscopy

## Mass Spectrometry

### Shimadzu – Axima iDplus Assurance



**Dimensions:** 700 × 1,920 × 850 mm (w × h × d)

**Weight:** 330 kg, excluding data system

**Highlights:** Axima Assurance – Flexibility and Quality:  
The Axima Assurance is designed with the general analytical and life science laboratory in mind. Incorporating a variable repetition rate 50 Hz N2 laser, the system provides high quality and high sensitivity rapid MALDI mass spectra and is particularly suited to identification in the microbiology field. Positive and negative ion modes are included as standard, allowing greater flexibility and extending the compound categories that may be analysed.

### Shimadzu – Axima iDplus Confidence



**Dimensions:** 700 × 1,920 × 850 mm (w × h × d)

**Weight:** 330 kg, excluding data system

**Highlights:** iDplus Confidence – Sensitivity and Flexibility:

- Rapid microbial identification for research use
- Identifies and classifies strains based on phenotype characteristics
- SuperSpectra reduce the incidence of false positives and ensure robustness and reproducibility
- Open system allows addition of new species / entries to the database or the creation of new databases
- Clustering allows molecular profiling and tracking of change or evolution
- High performance MS for large molecule analysis
- MS/M

### Shimadzu – Axima iDplus Performance



**Dimensions:** 700 × 1,920 × 850 mm (w × h × d)

**Weight:** 375 kg, excluding data system

**Highlights:** iDplus Performance – application-centric solutions:

- Rapid microbial identification for research use
- Identifies and classifies strains based on phenotype characteristics
- SuperSpectra reduce the incidence of false positives and ensure robustness and reproducibility
- Open system allows addition of new species / entries to the database or the creation of new databases
- Clustering allows molecular profiling and tracking of change or evolution
- High performance MS for large molecule analysis
- MS/MS

### Shimadzu – Maldi-8020



**Dimensions:** 450 × 1,055 × 745 mm (w × h × d)

**Weight:** 86 kg

**Highlights:** The Maldi-8020 is a benchtop, linear-only MALDI-TOF mass spectrometer designed to meet the needs of laboratories requiring a cost-effective MALDI-TOF platform. This newly designed MALDI-TOF mass spectrometer is functionally simple but provides outstanding MS performance in a compact footprint.

Improve Covid-19 testing

# Gargle and use mass spectrometry

A UK biotech laboratory has used mass spectrometry in a new approach to coronavirus testing. MAP Sciences developed a gargle test, which collects samples from the back of the throat, and avoids the unpleasant sensation of the current PCR (polymerase chain reaction) swab tests. From there, the sample is tested for coronavirus using mass spectrometry (MS) with high levels of accuracy.

A UK biotech laboratory has used mass spectrometry in a new approach to coronavirus testing. MAP Sciences developed a gargle test, which collects samples from the back of the throat, and avoids the unpleasant sensation of the current PCR (polymerase chain reaction) swab tests. From there, the sample is tested for coronavirus using mass spectrometry (MS) with high levels of accuracy. With an under one hour turnaround, the developers believe the test is quicker, easier, cheaper and as accurate as current PCR testing and has the ability to pick up other viruses – as well as Covid-19 – such as H1N1 flu.

Professor Ray Iles, Chief Scientific Officer of MAP Sciences, based in Bedford, UK, says the test has been validated, with data now being gathered for regulatory approval, using samples from trials at Addenbrooke's Hospital in Cambridge and collaborators in the USA at Northern Illinois University. The company seeks to take its gargle test to market and, as part of the UK's Covid-19 mass testing regime, to liaise with the country's government, which aims to ramp up testing capacity to 500,000 a day by the end of October.

Having spent many years working in the university sector, setting up biomedical and health science facilities and as a Dean at Colleges of Health, Iles set up MAP Sciences five years ago with the vision that MALDI-ToF could move from the research lab to being the 'go-to' clinical diagnostic tool. Underpinning this is the amount of information available from MS, an analytical technique that measures the mass-to-charge ratio of charged molecules or ions.

### Ionising whole proteins without fragmenting

MALDI-ToF MS utilises an advanced method of protein pattern recognition – obtained from blood, urine or saliva – to diagnose various diseases and health disorders and rapidly deliver test results economically. In a typical MS procedure, a sample is ionised by bombarding it with electrons. But this breaks them into many small fragments. In MALDI, whole proteins are 'soft' ionised without fragmentation, and can then be analysed as single intact ions, creating simpler spectra within the mass spectrometer. This enables complex biofluids samples to be analysed and subjected to re-interrogation for further results. Professor Iles said cost and time taken for diagnostics remains a major hurdle in global healthcare, but MS screening offers a quick and cost-effective alternative for a range of tests.



### PROFILE

*Professor Ray Iles is Chief Scientific Officer with the MAP Sciences Group, which develops medical and digital diagnostics (<https://mapsciences.com/>). His specific expertise lies in the assessment and measurement of biomarkers in biological fluids, with a passion for the finer details of clinical diagnostics and the instrumentation, and in developing new techniques. With a BSc in Bio-analysis, MSc in Immunology, and PhD in Molecular Pathology, he is a Fellow of the Royal Society of Chemistry, the Society for Biology and a Chartered Biologist and the founding Dean of Abu Dhabi University's College of Health Sciences.*

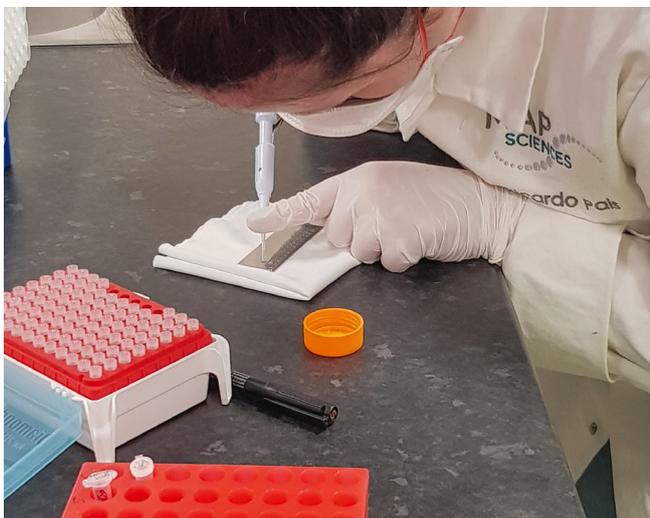
MAP Sciences had initially developed the technology with a view to screening populations for haemoglobinopathies and the most common genetic diseases, such as sickle cell disease or alpha or beta thalassemia from a pin-prick blood test. The biotech firm developed these tests and proved their validity with colleagues at Addenbrooke's Hospital in Cambridge and Cambridge University, while also working with partners in the United Arab Emirates and the United States to confirm the technique works on their mass spectrometers.

Then the coronavirus pandemic struck. However, this unexpectedly presented a new opportunity. "I always felt that the next step would be to use mass spectrometry and take samples and look for viruses, because viruses are packages of proteins," Iles explained. From early March, MAP Sciences teamed up with Professor Jonathan Heeney at Cambridge University to understand the biology of the virus, and developed the biochemical approach for a new MS Covid-19 test. The team specifically used the compact Shimadzu MALDI-ToF 8020 mass spectrometer to detect proteins associated with Covid-19 and created the new gargle test, which also overcomes the relatively unpleasant approach of PCR testing with swabs of the throat and up the nose.

### How does the gargle test work?

"What we've developed," Iles explained, "is ways of enriching the virus in the sample, breaking the viral envelope, releasing these large glycoproteins and then identifying these glycoproteins on the mass spectrometer."

"Someone with suspected Covid-19 gargles with 10mls of water for 30 seconds and spits into a pot, which is then delivered to the lab where ice cold acetone is added to the solution to kill the virus and cause precipitation of large molecules. The sample is spun in the centrifuge with a chemical solution added to break up the virus and release the viral proteins, and then transformed into a small pellet and placed on a matrix plate. It's these viral proteins we look for to tell whether someone has Covid-19 or not, but it also means we can identify any other virus there as well – for example H1N1 flu."



Lab technician Vicky Lewis prepares the matrix plate for the mass spectrometer



The Shimadzu MALDI-ToF 8020 mass spectrometer used for the MAP Sciences COVID-19 gargle test samples.

The matrix pellet is placed in the MALDI-ToF mass spectrometer. A readout on the computer screen produces peaks highlighting the presence – or absence – of the coronavirus, or any other virus. The mass spectrometer is looking for the SARS-CoV-2 Spike Glycoprotein-S1 Protein. "We'll only get the S1 spike with virus being present," explained Iles, who adds that the gargle test is a fraction of the cost of the PCR swab test for coronavirus and sampling can be performed at home and sent through the post to laboratories.

### Mass spec – compact size and flexible software

With data still being collated, Iles maintains that the gargle MS test is as accurate, if not more so, as the PCR test, believed to be about 80% accurate and with an unclear false positive rate. "We are cheaper, we are faster and we are an alternative technique that can confirm or refute a PCR test. We also have quality controls in place and we are ready to go," the professor confirmed. Iles favours the Shimadzu MALDI-ToF 8020 because of its software flexibility and compact size. It can conduct about 500 tests a day, meaning significant investment in MS hardware will be required if the gargle test is to contribute to the UK government's testing aspirations, though Iles' team is working closely with Shimadzu over potential modifications.

Yet, he believes their sophisticated and affordable testing technology, with fewer consumables than other Covid-19 tests, will complement the simple binary Covid-19 tests currently in use and produce accurate results with fewer false positives as the global fight against coronavirus continues. ■



### CONTACT

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shimadzu@shimadzu.eu · www.shimadzu.eu

## Identification/Susceptibility

### Fujifilm Wako – Toxinometer MT-6500



**Dimensions:** 350 × 420 × 356 mm (w × h × d)  
**Weight:** 14 kg  
**Assays:** B-Glucan Test for the detection of invasive fungal infection

- Highlights:**
- Quantitative B-D-glucan measurement by kinetic turbidimetric LAL method
  - 16 samples positions, up to 64 positions using MT-6500 Extension Modules
  - Operation of single test reagents
  - Calibration by QR code scan
  - LIS integration capability
  - Quality control available
  - Maximum 90 minutes measurement time

### Sysmex – UF-5000



**Sample throughput:** Up to 105 (urine), 20 (body fluids) samples/h  
**Dimensions:** 855 × 760 × 754 mm (h × w × d)  
**Weight:** 90 kg

- Highlights:**
- Fully automated urine particle analysis
  - Exclude negative UTI samples in less than a minute
  - Bacteria quantification and indication of gram typing
  - 28 clinically relevant parameters for urinalysis
  - Body fluid mode integrated as standard
  - Nine parameters incl. bacteria count and WBC differentiation in BF mode

## Microscopy

### Hund – medicus pro Myko



**Highlights:** With the medicus pro Myko, a versatile laboratory microscope for medical practices, clinical laboratories and training, an easy and reliable detection of mycoses in native preparations becomes available. The dedicated fluorochrome, Mykoval, is easy to use and very cost efficient.

- High contrast and resolution
- No cultivation necessary
- Long lifetime of LED fluorescence illuminator
- Introductory price in 2020

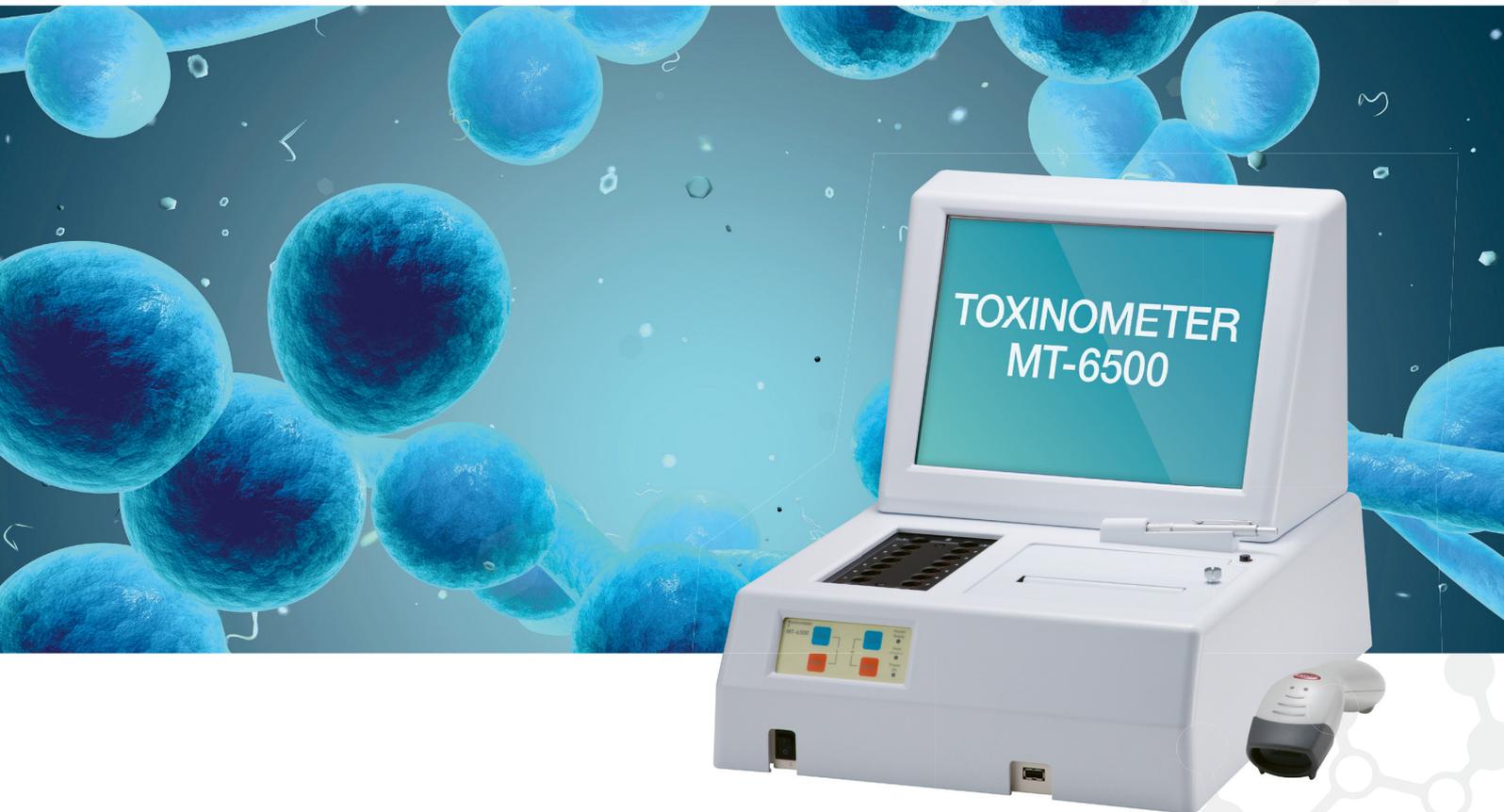
### Olympus – CX33



- Highlights:**
- Maintenance free Koehler illumination with LED
  - Fully ergonomic design

The CX33 microscopes enable users to remain comfortable during long periods of routine microscopy observations. The microscope frame conforms to the user's hands and the location of the control knobs maximize ergonomics to improve work efficiency. Users can quickly set a specimen with one hand, while adjusting the focus and operating the stage with the other hand with minimal movement. A fixed Koehler illumination system provides detailed images while minimizing the need for maintenance and the possibility of operator errors. The microscope also features an optional camera port for digital imaging.

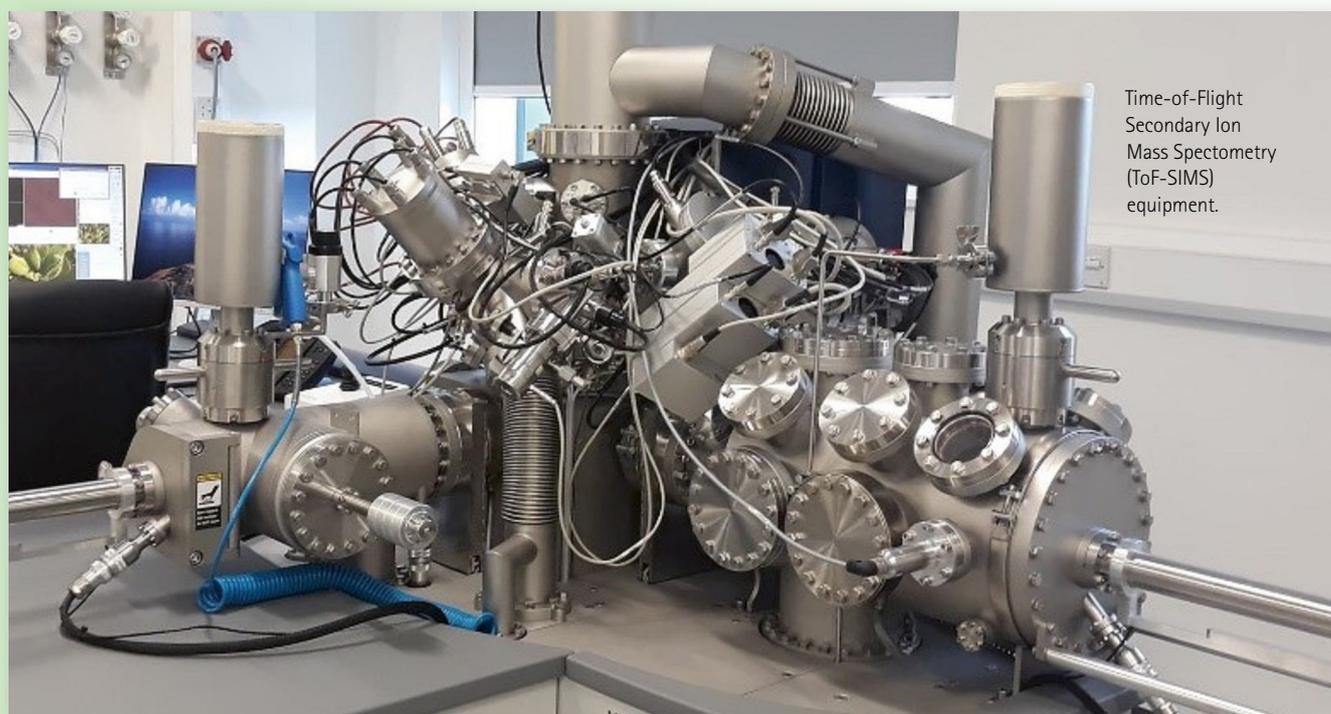
$\beta$ -GLUCAN TEST  
EARLY DETECTION OF  
**INVASIVE FUNGAL  
INFECTION**



- + *In vitro* diagnostic blood test
- + Single test format for fast on-site measurements
- + Early detection of invasive infection by  
*Candida sp.*, *Aspergillus sp.* and *Pneumocystis jirovecii*

A new technique to understand metabolic pathways

# Mass spectrometry-based metabolomics



Time-of-Flight  
Secondary Ion  
Mass Spectrometry  
(ToF-SIMS)  
equipment.

Mass spectrometry-based metabolomics has emerged as a powerful tool to help study chemical ecology. Recent advances in the technique make it possible to study microbial interactions from complex communities.

Laia Castaño-Espriu outlined the role and benefits of MS in this context in her presentation "Analysis of microbial ecology by mass spectrometry-based metabolomics techniques", at the joint meeting of the German Society for Hygiene and Microbiology (DGHM) and the Association for General and Applied Microbiology (VAAM) in Leipzig, Germany this March.

Castaño-Espriu explained that the bacterial order Actinobacteria is responsible for the production of 65–70 percent of microbially-produced specialised metabolites with diverse biological

activities, but it is estimated that only 10 percent of biosynthetic genes clusters encoding the production of these specialised metabolites are transcribed under normal laboratory conditions.

### **Microbial competition enhances chemical diversity**

"It's been observed that microbial competition enhances chemical diversity as an ecological advantage" she said. "Therefore, the study of bacterial competition is key in understanding the ecological role that secondary metabolites pose to microbes and in understanding the induction of cryptic biosynthetic gene clusters." As a final year PhD student at the University of Strathclyde in Glasgow, Castaño-Espriu's project is based on the analysis of microbial interactions by co-cultivation and MS-based metabolomics, with a particular focus on Actinobacteria that has been isolated from the marine environment as a potential source of novel chemistry. The analysis of these interactions by LC-MS revealed the production of metabolites that were co-culture specific and they found

that several interactions not only enhanced chemical diversity, but also inhibited the growth of several clinically relevant pathogens, she explained. "Furthermore, we could gain a better understanding of the chemical ecology during bacterial competition, where changing conditions aggravate the complexity of these interactions. Therefore, we demonstrated that MS-based metabolomics is an exciting strategy to study microbial ecology and to prioritise novel chemistry."

Metabolomics approaches – referring to the study of the complete set of metabolites found in a cell, tissue, organ or organism – in general are applied to compare the chemical profiles of different experimental groups to find out the chemical response to external stimuli such as environmental stresses, she explained. "MS-based metabolomics approaches in microbial ecology enable the understanding of microbial interactions in complex communities. Metabolomics allows the analysis of those metabolites that are produced during microbial interactions, therefore, providing a snapshot of the ecological role of these metabolites in the producers. This allows the understanding of biological questions such as 'Why are certain metabolites produced under specific conditions?', she pointed out.

By studying the secondary metabolism of organisms in complex communities and understanding the role of interesting metabolites, Castaño-Espriu continued, it is possible to gain greater insights in the correlation between phenotypic traits and microbial interactions.

### Identification of potentially significant metabolites

Her work utilises Time-of-Flight Secondary Ion Mass Spectrometry (ToF-SIMS) and Liquid Chromatography Mass Spectrometry (LC-MS). The MS-based metabolomics studies follow the steps of sample collection and preparation, generation and acquisition of MS data (metabolic profiles), data processing using a deconvolution software such as MZmine, and statistical analyses. "This approach," she said, "enables the identification of potentially significant metabolites belonging to the groups of interest, therefore, prioritising these for chemical identification and further experiments to understand the underlying mechanisms of the metabolic pathways."

MS-based metabolomics techniques offer advantages in fields including the effect of drugs at a metabolite level; drug development; the study of diseases such as cancer, nutrition science, toxicology analyses to natural products; and chemical ecology research. "Therefore," Castaño-Espriu added, "MS-metabolomics represents a multi- and interdisciplinary approach that can be used in different fields to understand metabolic pathways."

Metabolomics, she added, aims to deliver more rapid and reliable analyses combined with more economical methods, data standardisation and the sharing of more MS data through online databases. Recent applications of metabolomics include disease biomarkers and drug development, with a significant increase in the use of



### PROFILE

*Laia Castaño-Espriu is a final year PhD student at the University of Strathclyde in Glasgow under the supervision of Dr Katherine R. Duncan, with a particular research interest in metabolomics, actinobacteria and drug discovery.*

MS-based metabolomics observed in the area of microbial ecology in the last decade.

Compared to other techniques, Castaño-Espriu believes that metabolomics is the best approach to accelerate drug development as it is low-costs and also rapid and effective.

"This effectiveness makes a metabolomics approach ideal for other life and medical sciences."

She feels it will become necessary to develop new technologies that offer greater sensitivity and spatial resolution to improve data quality, and to create databases with more MS data coverage to facilitate metabolite identification.

Another challenge lies in data variability based on sample preparation and the sample matrix among other factors. However, she believes the development of new instruments and new methods will aim to overcome this limitation. ■



### CONTACT

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# POCT



Blood Glucose  
Immunoassays  
Cardiology  
Blood Gases /  
Electrolytes / Oximetry  
Urinalysis  
Information Technology  
Other

Blood Glucose

Siemens Healthineers – DCA Vantage Analyzer



**Dimensions:** 287 × 254 × 277 mm (w × h × d)  
**Weight:** 3.88 kg

**Highlights:** The DCA Vantage Analyzer makes in-office diabetes testing easy, with accurate, clinically trusted results shown to improve decision making, patient compliance, and outcomes. Get precise HbA1c, albumin, creatinine, and A:C ratio results in minutes with good correlation to laboratory methods and simplify management for POC coordinators with advanced operator, data-management, and security capabilities.  
 Product availability varies by country.

Immunoassays

Genrui – FA50



**Highlights:** FA50 is a simple, innovate and accurate POCT analyzer that certified by FDA. It is integrated with magcard calibration and capable to perform tests over different sample types including whole blood, serum and plasma. It is perfectly designed for use in clinics and doctors' offices, as well as different hospital departments including ICU, CCU, etc.

Currently following tests are available: HbA1c, PCT, hs-CRP, cTnI, Myo, CK-MB, NT-proBNP, D-Dimer, TSH, T3, T4  
 More tests are in development

Quidel – Sofia 2 - Fluorescent Immunoassay Analyzer



**Dimensions:** 120 × 120 × 220 mm (h × w × d)  
**Weight:** 1 kg

**Handheld/Stationary:** SARS-CoV-2 Antigen, Influenza A+B, Influenza A+B + SARS Antigen, SARS-CoV-2 Antibody IgG\*, RSV, C. difficile GDH + Toxin\*, Legionella, S. pneumoniae, Lyme, Strep A  
 \*New tests in development

**Highlights:** Proven lateral-flow technology, proprietary advanced fluorescence chemistry and assay development techniques, all in a small bench-top analyzer that can be used near patient and in laboratory settings.

- Intuitive, fast and easy-to-use interface allows operator to quickly run patient samples or navigate stored data
- Test results in as few as 3 – 15 min (depends on assay)
- Hands-on-Time: < 1 min
- Walk Away- and Read Now-mode can be used depending on workflow requirements
- Room temperature storage

Cardiology

Quidel – Triage MeterPro



**Assays:** High Sensitivity Troponin I, BNP, NT-proBNP, Troponin I, D-dimer, CK-MB, Myoglobin, PLGF, qualitative Drug Screen (urine)

**Highlights:** Quidel Triage MeterPro is designed to provide diagnostic results quickly and easily. With a variety of immunoassays and the ability to use whole blood, plasma, or urine, the Quidel Triage MeterPro gives you a flexible solution at the point-of-care.

- Quantitative test results in about 15-20 minutes
- Single- and multimarker panels available
- Built in quality controls into the meter, software, and test device
- Interface with any LIS solution
- Can improve clinical, economic and operational outcomes

# IT security of POCT devices – not everything is picture-perfect

Until recently, the major challenges surrounding Point-of-Care-testing (POCT) concerned the quality of the results and improving the reagents and the procedures in order to optimise patient care.

In the modern clinical environment, however, IT security of POCT devices is becoming increasingly important, in Germany also due to new industry-specific safety standards under the Act on the Federal Office for Information Technology. Professor Dr Thomas Streichert of the Institute of Clinical Chemistry at the University Hospital Cologne, Germany, explains the state of affairs. At the University Hospital Cologne, about 300 POCT devices are used by approx. 3,000 employees. "Many different users with very different requirements and qualifications," as Professor Streichert describes the situation in a nutshell. Thus, implementing a POCT IT security concept that works smoothly and is feasible in the everyday hustle and bustle of the hospital is no mean feat.

## POCT devices and their security gaps

While it makes sense to aim at fully integrating the devices with all data being available in the facility-wide system, this approach does have its pitfalls: the devices being used in the wards might

be lying around unlocked and can be accessed by unauthorized persons. This is a major data security gap since the devices contain not only measured values but also personal patient data. In order to protect this data, the devices have to be intelligent, with user identification, access authorisation, role-specific privileges and encrypted communication. For the lab specialist, implementing such a concept strictly across the entire hospital is "an enormous technical and organisational challenge".

## High level of security and service

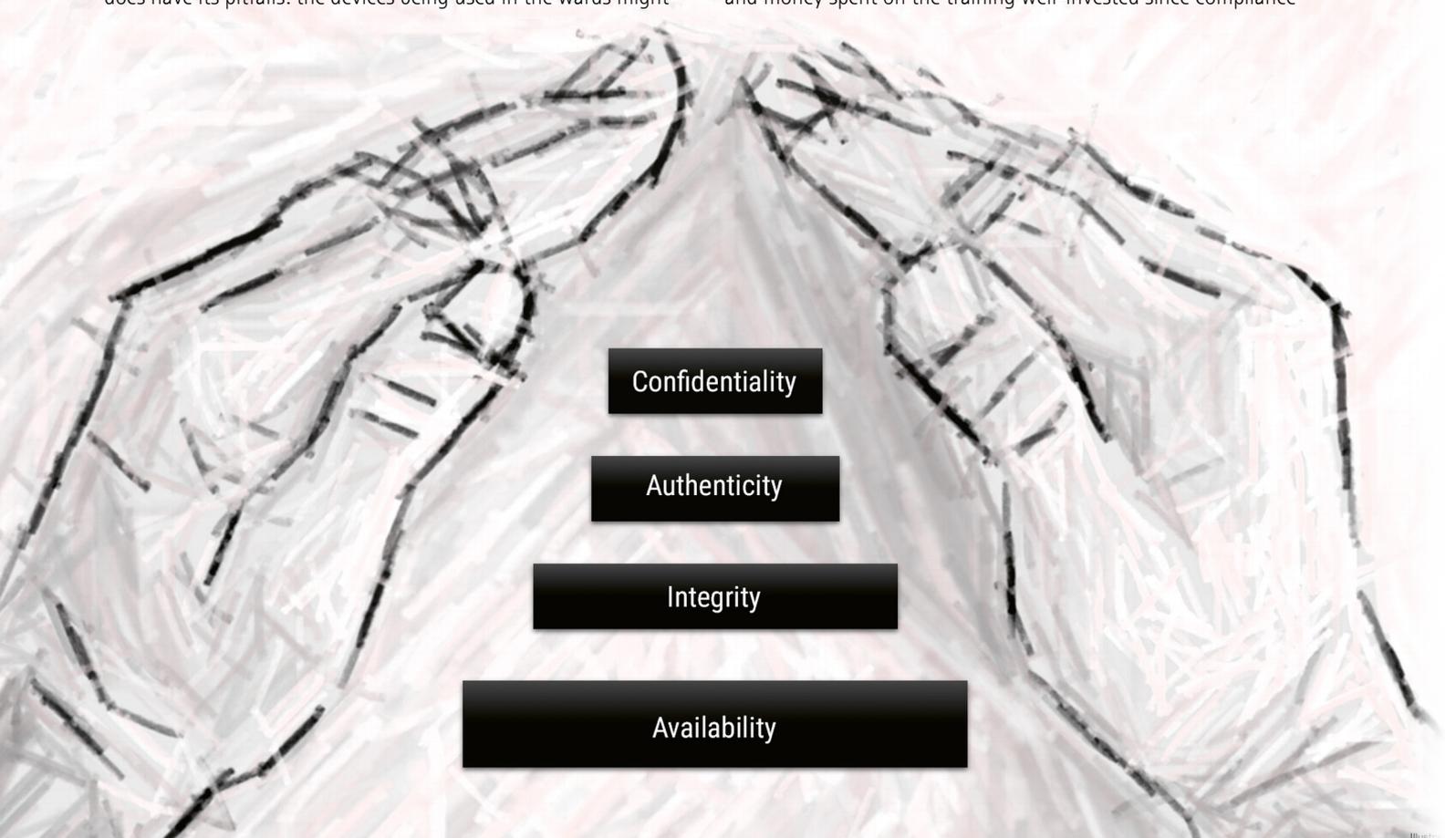
The University Hospital Cologne maintains high security standards. POCT accreditation per ISO 22817 triggered a quantum leap in terms of quality assurance. Every member of the care staff, be it physician or nurse, has to attend an initial training session and refresher training sessions which, in addition, are available online as e-learning modules. Hospital management considered the time and money spent on the training well-invested since compliance

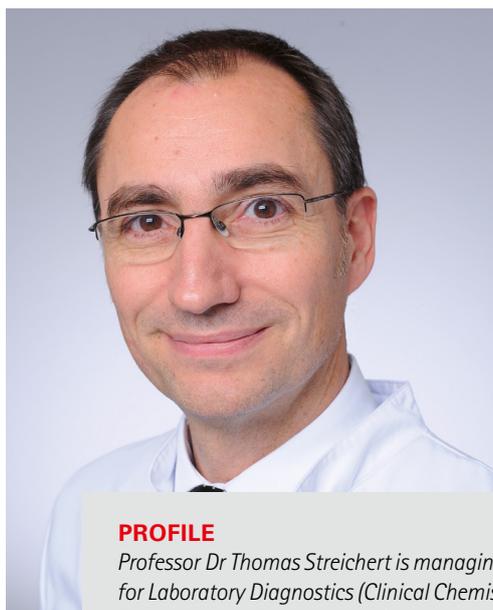
Confidentiality

Authenticity

Integrity

Availability





### PROFILE

*Professor Dr Thomas Streichert is managing director of the Center for Laboratory Diagnostics (Clinical Chemistry, Microbiology, Virology, Pharmacology, Endocrinology) and acting director of the Institute of Pharmacology, Therapeutic Drug Monitoring at the University Hospital Cologne, Germany. Born in South Africa, Professor Streichert studied medicine in Hamburg, Germany, where he also worked as junior and senior physician. In 2013, the specialist physician for laboratory medicine joined the University Hospital Cologne. He is chairman of the advisory committee "E-learning" at the University Hospital Cologne and member of the German Society for Clinical Chemistry and Laboratory Medicine.*

with quality standards enjoys top priority throughout the facility. All POCT devices are centrally managed by the hospital's clinical laboratory. This is a sensible approach since the lab medicine specialists have the relevant knowledge and can ensure facility-wide highly competent and target-oriented quality assurance. "The colleagues like to use our service offering. While dealing with the ins and outs of the POCT systems is daily fare for us, the care staff in the wards or the physicians in the ICU are grateful that they don't have to bother. They have important other tasks to tend to." Professor Streichert underlines that this level of service requires a constructive partnership with the IT department: "In the lab, we need quite a bit of IT support, thus, over the years we have developed a very good working relationship with the IT team."

### Not always on the same page: data security standards and clinical work

Nevertheless, Professor Streichert identified definite room for improvement: "Despite all the activities, we are not perfect when it comes to IT security." This is partially due to the so-called KRITIS bylaw in Germany which requires the operators of critical infrastructure to establish state-of-the-art protection of their IT systems, components and processes against disruptions in availability, integrity, authenticity and confidentiality in line with Federal Office for Information Security (BSI) specifications. "In order to be able to comply with these requirements, each industry has to develop specific security standards that are reviewed by the BSI for adequacy and suitability." The major hurdle: security standards and everyday operation of a hospital, particularly with regard to POCT, are very difficult to align.

### Authentication in a clinical environment

Case in time-consuming point: the blood gas analyser. As a POCT device, it is used in the OR to control ventilation in certain regular intervals. If such a device fails, the consequences for the patient can be fatal. Under BSI law, these devices require a time-consuming and overly complicated authentication procedure. The user name and a 16-digit password have to be entered on a tiny screen – unthinkable in an emergency: much too long-winded and much too error-prone. While technically speaking, the biometric fingerprint might be an option, it requires personal data to be stored on the central servers, which is something that has to be avoided in view of the EU GDPR. "Currently, we scan the employee ID card with a barcode," Professor Streichert explains and adds that theoretically, a second type of authentication, such as a password, is required. This combination, however, is problematic as IDs get lost or end up in coat pockets in the hospital laundry and passwords are forgotten or no longer valid. In the ER or in an understaffed ward, this procedure is unrealistic. Another idea that is being bandied about is a personnel number and a PIN, but this option is currently not technically feasible. There are further potential security gaps such as remote maintenance accesses that are used by external providers, ports, hard disks with unencrypted data or SSDs with data that is unencrypted and/or cannot be deleted.

### Round table on IT security

"In view of the complexity of the problem and the fact that we need to establish standards accepted by all stakeholders, we launched a round table with the POCT providers to discuss possible options as well as options that might already be in the pipeline and common denominators." This debate was very constructive – quite surprisingly since today, IT security is a major issue in procurement and there were understandable fears that competing providers were loath to engage in an open discussion. The round table did show that the companies are well aware of all issues and that they are working hard on solutions – and in fact some at least partial solutions seem to be in the wings. One of the major issues that remain to be solved is the user procedure in an emergency context. The good news is that there was a consensus around the round table: technical requirements alone won't do. Any solution has to reflect the everyday situation in a hospital and it has to fit in the overall IT approach.

Professor Streichert summarizes the credo: "The leaner the organisation, the simpler the process, the better the solution." A follow-up round table with the same cast of characters is planned for next year. ■



### CONTACT

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## Cardiology

### Siemens Healthineers – Stratus CS 200 Acute Care Diagnostic System



- Assays:** Troponin I, D-dimer, NT-proBNP, CKMB, hsCRP, Myoglobin, bhCG
- Dimensions:** 460 × 580 × 710 mm (w × h × d)
- Weight:** 68 kg
- Highlights:** The Stratus CS 200 Acute Care Diagnostic System delivers lab-quality results at the point of care with the speed that is needed for cardiac patients. Its broad menu of tests helps physicians to make more timely assessments, enabling rapid decision making for better patient care.
- Not available for sale in the U.S. Product availability varies from country to country and is subject to local regulatory requirement.

## Blood Gases/Electrolytes/Oximetry

### KABE Labortechnik – Consumables for blood gas analysis



- Highlights:** The best sampling system in every situation
- Plastic blood gas capillary:
- Unbreakable plastic
  - Fast drawing
  - Crystal clear
  - Numerous drawing volumes and diameters available
  - Minimum gas permeability for oxygen and carbon dioxide
  - Comprehensive range of accessories
- Blood gas tube:
- Rapid anticoagulation thanks to liquid preparation
  - Optimal filling with special piston geometry
  - Individual sterile packing
- Both sampling systems are prepared with Ca-balanced heparin and are ideal for blood gas and electrolyte analyses on all common blood gas systems.

### KABE Labortechnik – Pipette-Adapter for Capillaries (PAC)



- Highlights:** Assists in the handling of capillaries and their targeted draining on POCT-test strips or into vessels
- Suitable for different capillaries
  - The transparent tip provides the entire visibility of the capillary: easy and complete filling
- Handling:
- Fix capillary in the PAC while using oneway gloves
  - The capillary is filled as usual – afterwards the thump is put gently on the upper mouth of the PAC
  - The (dropwise) draining is carried out by generating a slight gauge pressure with the thumb

### Siemens Healthineers – epoc Blood Analysis System



- Assays:** pH, pCO<sub>2</sub>, pO<sub>2</sub>, TCO<sub>2</sub>, Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>++</sup>, Cl<sup>-</sup>, Hct, Glu, Lacm Crea, BUN
- Dimensions:** Host: 77 × 27 × 147 mm (w × h × d)  
Reader: 85 × 50 × 215 mm (w × h × d)
- Weight:** Host: 0.359 kg / Reader: <0.5 kg
- Highlights:** The epoc Blood Analysis System is a handheld, wireless solution that provides blood gas, electrolyte and metabolite results at the patient's side in less than one minute. Deliver pH, pCO<sub>2</sub>, pO<sub>2</sub>, TCO<sub>2</sub>, Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>++</sup>, Cl<sup>-</sup>, Hct, Glu, Lac, Crea and BUN while empowering clinicians to make faster decisions with lab-quality results to improve patient outcomes.
- Product availability varies by country.

**Siemens Healthineers – RapidLab 1200 Blood Gas System**



**Assays:** pH, pCO<sub>2</sub>, pO<sub>2</sub>, Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>++</sup>, Cl<sup>-</sup>, Glu, Lac, Neonatal Total Bilirubin, CO-oximetry

**Dimensions:** 230 x 240 x 610 mm (w x h x d)

**Weight:** 2.5 kg

**Highlights:** Siemens RapidLab 1200 Blood Gas System is uniquely designed to meet high-volume critical-care testing needs. The system has an ultra-fast sample processing and microsample capability, with results in 60 seconds. Cartridge-based reagent system simplifies operation, and Ready Sensor technology offers reliability with minimal maintenance.  
Product availability varies by country.

**Siemens Healthineers – RapidLab 348EX Blood Gas System**



**Assays:** pH, pCO<sub>2</sub>, pO<sub>2</sub>, Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>++</sup>, Cl<sup>-</sup>, Hct

**Dimensions:** 385 x 382 x 353 mm (w x h x d)

**Weight:** 9.4 kg

**Highlights:** The RapidLab 348EX Blood Gas System is a cost-effective solution for low-volume laboratory settings. Report accurate patient results from a whole-blood sample in 60 seconds, with minimal operator interaction. Increase operator efficiency with bar-code data entry of patient and operator IDs, automatic sample aspiration and calibrations.  
Not available for sale in the U.S.  
Product availability varies by country.

**Siemens Healthineers – RapidPoint 500e Blood Gas System**



**Assays:** pH, pCO<sub>2</sub>, pO<sub>2</sub>, Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>++</sup>, Cl<sup>-</sup>, Glu, CO-oximetry, Lac

**Dimensions:** 300 x 550 x 420 mm (w x h x d)

**Weight:** 16.55 kg

**Highlights:** The RapidPoint 500e Blood Gas System features a redesigned user interface and upgraded hardware and software to deliver an intuitive, heightened user experience. It incorporates Siemens Healthineers proprietary Integri-sense technology to deliver confidence with every result and elevates blood gas solution to a new level, allowing more time for patient care.  
Product availability varies by country to country.

**Urinalysis**

**Analyticon Biotechnologies – Urilyzer 100 Pro**



**Sample throughput:** Up to 120 tests/h (fast mode)

**Dimensions:** 208 x 290 x 80 mm (w x d x h)

**Weight:** 1.2 kg

**Highlights:** Urine test strip analyzer connectable to POC middleware

Optimized for POCT application with

- Positive patient identification
- Remote software update
- Test strip management
- QC solution management
- Proficiency test feature
- Messaging function
- Operator management

## Urinalysis

### Siemens Healthineers – Clinitek Status Connect System



**Assays:** Albumin, Bilirubin, Creatinine, Glucose, Ketone, Leukocytes, Nitrite, pH, Protein, Specific gravity, Urobilinogen, Albumin-to-creatinine, hCG

**Dimensions:** 171 × 185 × 272 mm (w × h × d)

**Weight:** 2.3 kg

**Highlights:** The Clinitek Status Connect System provides flexible connectivity solutions, data integration, and operational control to improve risk management at the point of care. Latest software includes WPA2-PSK wireless security and encryption. Auto-checks help to eliminate errors, mitigate risks, and support compliance. The automated analyzer is faster than manual testing, and helps reduce the chance of human error.

Product availability varies by country.

### Siemens Healthineers – Atellica 1500 Automated Urinalysis System



**Sample Throughput:** 106 – 240 samples/h

**Assays:** Bilirubin, Clarity, Color, Glucose, Ketone, Leukocyte esterase, Nitrite, Occult blood, pH, Protein, Specific gravity, Urobilinogen, Albumin, Albumin-to-creatinine ratio, Creatinine, Protein-to-creatinine ratio

**Dimensions:** 1,260 × 625 × 680 mm (w × h × d)

**Weight:** 114 kg

**Highlights:** Combining the Clinitek Novus Analyzer and the Atellica UAS 800 Analyzer\* into one completely automated unit, the Atellica 1500 Automated Urinalysis System sets the new standard for accuracy and efficiency. It is a truly digital automated urinalysis system, and lets you manage more samples with less staff in shorter time, while never compromising on high-quality results.

Not available for sale in the U.S. Product availability varies by country.

### Sysmex – UC-1000



**Sample throughput:** Up to 480 samples/h

**Dimensions:** 315 × 135 × 215 mm (h × w × d)

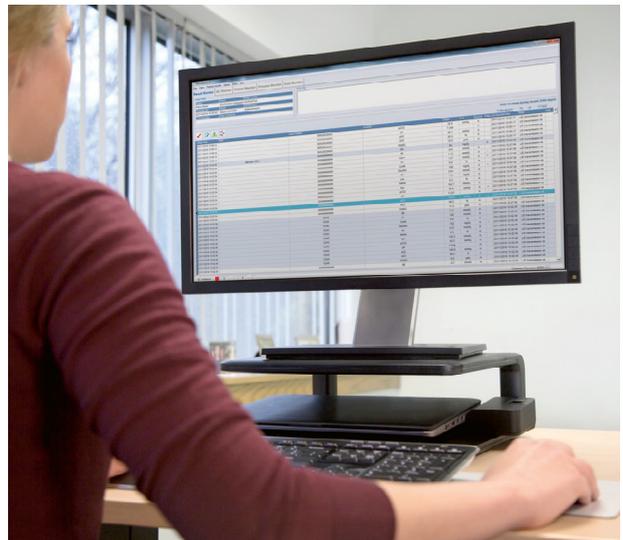
**Weight:** 2.6 kg

**Highlights:**

- Semi-automated urine chemistry analysis
- Up to 16 parameters
- Complete online training available
- mALB + CRE on a routine test strip
- Can be connected to POCT middleware

## Information Technology

### Siemens Healthineers – POCcelerator Data Management System



**Highlights:** Connect securely with an open, reliable POC informatics platform. Gain vendor independence and free choice in selecting the appropriate POCT device to meet your clinical requirements. Create a long-term solution that saves time and money by simplifying the complexity and cost of maintaining multiple IT systems.

Product availability varies by country.

Other

**Jadak – HS-1R Handheld HF RFID Reader**



**Dimensions:** 33.4 × 51.3 × 108.2 mm (h × w × d)  
**Weight:** 98 grams  
**Handheld/Stationary:** Handheld 1D & 2D barcode scanner with HF RFID reading & writing functionality

**Highlights:** The flexpoint HS-1R from JADAK integrates 1D & 2D barcode scanning with HF RFID reading & writing functionality. Sure to be an integral part of many medical and clinical applications, the HS-1R enables patient ID via wristband scanning, clinician security login via badge scanning, pharmaceutical applications incl. drug inventory tracking & digital signature capture using built in camera modes, and much more. JADAK products can be tailored to meet specific customer requirements.

**Sarstedt – Minivette POCT / Capillary Blood Collection**



**Highlights:**

- Collection devices for Point-of-Care tests
- Easy sample recovery
- Precise and dispensing of small whole blood volumes
- Prevents spillage during transfer
- Volume range: 10µl – 200µl
- Preparations: Neutral, Heparin and EDTA

**Genrui**

**Total Solution for COVID-19**

RT-PCR Nucleic Acid Detection and IgG/IgM Antibody Test

**Superior**

- Sensitivity 200 copies/mL
- S & N target genes, high specificity
- IC reference, monitoring the whole process

**Comprehensive**

- Various package size
- Total solution with swab, extraction and detection kit.

**Fast**

- Only 80 minutes from RNA to results

**RT-PCR Detection Kit**



**Sampling Swab**



**RNA Extraction Equipment & Reagent**



**IgG/IgM Antibody Test Kit**

- One single test, two results
- Easy operation with only 3 steps
- Rapid and reliable results at 15 minutes

# Information Technology



LIS / Middleware / POCT  
Inventory Management  
Specialties

## LIS/Middleware/POCT

### Beckman Coulter – DxONE Command Central Workstation



**Highlights:** Beckman Coulter's DxONE Command Central remote monitoring system helps manage lab workflow and improve decision-making steps. The system can connect up to 18 instruments or automation systems, and up to five networked DxONE Command Central workstations within a single laboratory, allowing the operator to place DxONE Command Central workstations in prime laboratory locations for increased flexibility.

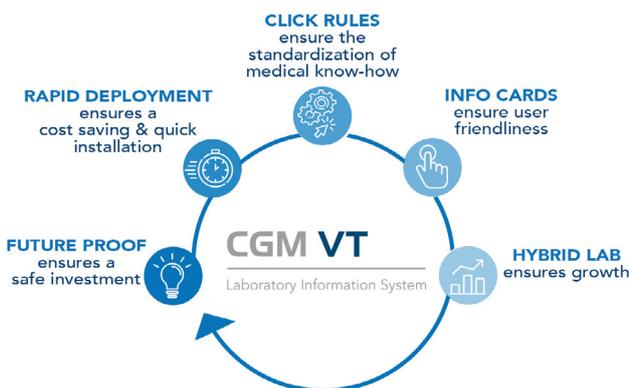
DxONE Command Central maximizes workflow efficiencies by providing lab technicians with a real-time view of laboratory systems from a single point of control. DxONE Command Central works with data managers such as REMISOL Advance to achieve workflow efficiencies, or can serve as a stand-alone product for users to monitor automation and/or multiple analyzers and quickly respond to any instrument issues.

### Beckman Coulter – Remisol Advance



**Highlights:** Remisol Advance is an enterprise data management solution that can help improve sample workflow through consolidated management, drive consistency through network standardization across multiple sites, create efficiency through autoverification, and improve reliability by integrating quality control management. It is a unique software product that consolidates patient test information from multiple instruments in the lab or from multiple labs in the hospital network. REMISOL Advance features virtualization capability to help reduce failure points and increase uptime.

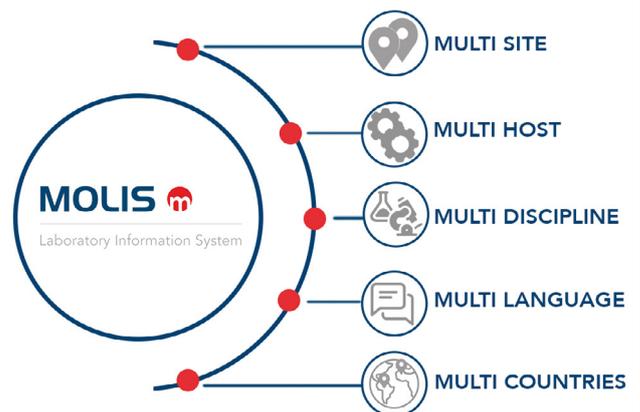
### CompuGroup Medical – CGM VT



**Highlights:**

- CGM VT is future-oriented due to modern technology and an integrated communication platform.
- The cost saving installation concept rapid deployment enables your lab to change to the new LIS in a short time.
- Easy click rules allow lab doctors to independently feed their knowledge into CGM VT and use it in future.
- The intuitive info-card principle allows easy application without long training.
- The LIS can be used across multiple locations and includes the mapping of in- and outpatient senders.

### CompuGroup Medical – MOLIS



**Highlights:** MOLIS is the premium LIS solution from CompuGroup Medical, Europe's biggest provider of healthcare-IT. With MOLIS you put safety first. The unmatched stability, reliability and performance of MOLIS has been proven in more than 160 installations in hospitals and private laboratories of all sizes, every discipline, as stand-alone or multi-site configurations. With the flexibility of MOLIS you continuously optimize every process in your organization to offer the best possible service to your requesters.

## LIS/Middleware/POCT

### i-Solutions Health – LabCentre

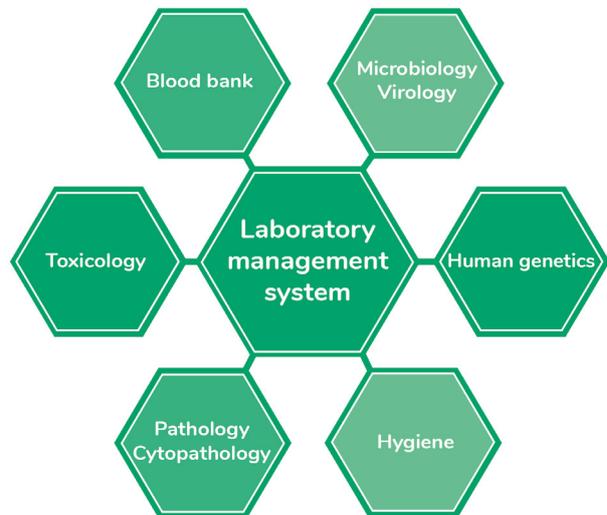


**Highlights:** LabCentre is a laboratory and pathology information management system. It helps doctors, scientists, technologists and management staff to track samples and testing processes, communicate results to other health professionals, and monitor costs and reporting.

LabCentre supports the following disciplines:

- Blood Sciences
- Microbiology
- Hygiene
- Transfusion Medicine
- Pathology
- Billing

### Medat – Laboratory Information System



- Highlights:**
- Flexible, private company with 50 employees.
  - Complete solution from order entry to billing.
  - Highly customisable modules for microbiology, virology, environmental hygiene, cytopathology, histo-pathology, clinical chemistry, serology/toxicology, blood bank and human genetics.
  - Single, integrated system for all divisions and sites.
  - Reliable operation in some of Europe's biggest laboratories.

### Nexus / Swisslab – Digitalisation of all laboratory processes



**Highlights:** We combine the two strongest products on the market to form a uniform, modular laboratory solution with Nexus / Swisslab and Nexus / Pathology<sup>NG</sup>. All customers benefit from our in-depth experience in systems analysis, customer implementation, project management and maintenance of integrated, end-to-end solutions for modern small- to large-size medical laboratories.

- Modules for the medical lab  
Core Lab, microbiology, hygiene, transfusion medicine, transplantation immunology, human genetics, new-born screening, pathology, cytology
- Lauris Order Communication System
- Business intelligence and quality management
- Compatibility and controlling of analyser solutions

### Siemens Healthineers – Atellica Process Manager



Uncover inefficiencies and optimize clinical operations with built-in analytics and business intelligence. Identify and resolve pre-analytic, analytic and post-analytic problems with advanced performance metrics. Increase productivity with centralized oversight to control systems\*, view reagent levels and review exceptions from one screen. Deliver transparent, predictable TAT using rules and at-risk sample alerts.

\*Instruments require VNC or Remote Desktop capability. Not available on all systems.

## Siemens Healthineers – Atellica Data Manager



**Highlights:** Open, scalable, easy-to-use solution with powerful rules to standardize testing, enhance QC and streamline result management. Enhance visibility, automate processes, autoverify results and centralize management of analyzers, automation, sites and networks to increase productivity. Reduce errors and process variation with consistent review/reporting. Sharpen clinical focus with details needed to make informed, accurate decisions. Product availability varies by country.

## Inventory Management

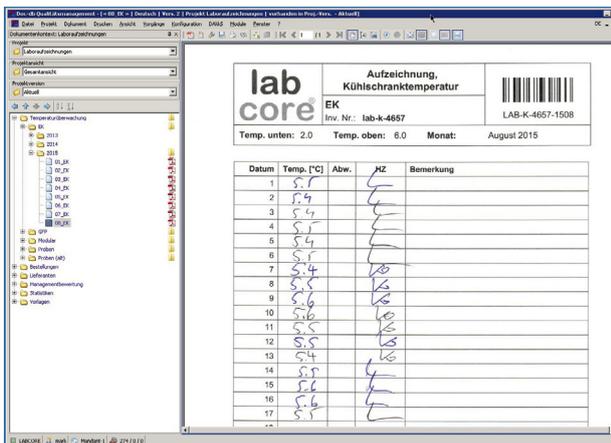
### Siemens Healthineers – Atellica Inventory Manager



**Highlights:** Get the right materials at the right time – Atellica Inventory Manager\* provides automated, real-time control of reagents and consumables across multiple locations to reduce costs, save time, and improve lab quality. \*Product availability varies by country.

## Specialties

### Zenon – Doc-db Forms & Records



**Highlights:** The new Doc-db module forms and records does all the work. It makes forms that were not previously in the document management system to records that, using the software, can be created, checked, shared, and after manual editing digital archived.

- Automated creation of recurring forms and records
- Automatic reminder and check for completeness
- Direct distribution as a print job to the employees responsible
- General and individual design of the workflows for each form/record



Integrated  
solution management  
for your laboratory

dr. neumann&kindler

www.labcore.de

# Other Applications

Blood Collection  
Pipette Tips  
Disinfection  
Compressors  
Specialties



## Blood Collection

### Greiner – Vacuette Safety Blood Collection Sets



- Highlights:**
- Specially developed for blood collection from patients with difficult vein conditions
  - Protection from the risk of needlestick injuries
  - Simple activation of safety mechanism
  - Transparent view window provides clear vein entry indication
  - Particularly safe due to activation of the safety mechanism while the needle is still in the vein
  - More flexibility due to assorted tube lengths for blood collection
  - Optional use as an infusion set

### Improve Medical – Improsafe Blood Collection Needles



- Highlights:**
- Eliminate needle exposure
  - Eliminate needle stick injuries
  - Needle is completely and securely locked after use, preventing reuse
  - Pre-attached holder reduces the risk of accidental needle-stick injuries
  - Full line FDA 510k clearance

### KABE Labortechnik – Capillary Blood Collection GK



- Highlights:** Capillary Blood Collection GK – for small amounts of blood
- The system offers special advantages for the collection of blood samples from new-borns, children, elderly people and emergency patients, thus everywhere, where only small amounts of blood are available
- The test vessel is prepared on the entire inner surface. Besides it can be used as centrifugal vessel
  - The capillary is coated on the entire inner surface and guarantees an exact filling volume
  - The attached stopper, which is optionally available with an integrated elastically re-deforming rubber membran, offers perfect tightness
  - Different measurements and preparations are available

### KABE Labortechnik – Primavette S and V



- Highlights:** The safe and variable blood collection system
- Gentle – Aspiration technique suitable for all vein conditions
  - Safe – Unbreakable, high quality plastic ensures maximum user and patient safety
  - Clean – The high grade rubber membrane closure guarantees absolute tightness
  - Flexible – Vacuum technique possible
  - Versatile – Available in different tube sizes and preparations
  - Comprehensive – Offered with a broad range of accessories

# Other Applications

## Blood Collection

### Sarstedt – Microvette – Capillary Blood Collection



- Highlights:**
- Flexible capillary blood collection systems such as the Microvette – tailor-made to the individual needs of each patient group.
  - Different patient groups and collection techniques require different collection systems.
  - With a nominal volume range from 100 – 500 µl, the capillary blood collection systems product range is one of the most extensive in the entire market.
  - Depending on the requirements, our portfolio includes Microvettes with conical or round bottom inner tubes and the option for various different collection techniques, end-to-end or with a collection rim.

### Sarstedt – Multi-Safe Disposal Boxes



- Highlights:**
- Our wide, tailor-made range of Multi-Safe disposal boxes corresponds to the current ISO 23907-1:2019 on the prevention of needle stick injuries.
  - With our extensive product range of Multi-Safe boxes we are able to meet any disposal need in the field of medicine and laboratory.
  - With the various options, from the convenient 200 ml format to the autoclavable 60 l disposal box for clinical waste, we offer an optimal solution for every need.

### Sarstedt – S-Monovette – Venous Blood Collection



- Highlights:**
- S-Monovette – The Revolution in Blood Collection. A blood collection system that combines two blood collection techniques – the aspiration technique and the vacuum technique.
  - The S-Monovette is suitable for all vein conditions and achieves an optimal sample quality, thereby producing the best results.
  - The aspiration technique is a gentle technique for routine blood collection. Using the vacuum technique, a "fresh" vacuum is always available.
  - Suitable for all ages, from young to old, the S-Monovette is as individual as your patients.

## Pipette Tips

### Sarstedt – Low Retention Pipette Tips



- Highlights:**
- Minimising sample loss
  - Optimised surface for enhanced dispensing behavior
  - Improved sample recovery
  - Minimal sample loss of highly viscous liquids or samples containing detergents
  - Cost savings in valuable reagents

## Disinfection

### UVentions – UVbase



**Dimension:** Outside: 600 × 340 × 540 mm (w × h × d)  
Inside: 480 × 130 × 220 mm (w × h × d)

**Weight:** 29 kg

**Highlights:** Disinfection with UV light of objects as for example protective masks (PPE), mobile phones, keyboards, computer mice, glasses/goggles, tools and much more.

- Removes 99.999 % (5-log10) of all viruses and bacteria
- Safe and user-friendly use
- Disinfection within a few minutes (average three minutes)
- Suitable for a wide variety of objects due to individual brackets
- Environmentally sustainable and chemical-free
- Easy cleaning from inside and outside
- Long-life UV lamps
- Made in Germany

## Compressors

### Dürr Technik – Sicolab – compressor stations



**Air flow:** Up to 145 l/min at 5 bar

**Compressed air quality:** Up to 1:3:1 (according to ISO 8573-1)

**Highlights:**

- Oilfree compressed air for many applications
- Silent – thanks to excellent soundproofing (48 – 54 db [A])
- Compact – fits under the laboratory bench
- Mobile – with wheels or handling grips
- Wide variety of versions
- Membrane dryer and filters as options

## Specialties

### Sarstedt – Cell Culture Products



**Highlights:** For over 25 years Sarstedt has produced a wide range of high quality cell culture products which are distributed worldwide. These many years of experience and knowledge of the needs of users have allowed us to optimise and continually expand the product range.

### Sarstedt – Sediplus Sedimentation System



**Highlights:**

- Venous and capillary blood collection systems for blood sedimentation with matching accessories and devices for automatic detection are available.
- The automatic blood sedimentation system Sediplus S 200 with 10 measurement positions, and the Sediplus S 2000 with 40 positions (can optionally be extended to 160 positions) for a high sample throughput, optimise ESR measurement.
- The S-Sedivette venous blood collection system enables hygienic, easy handling in an enclosed system. The Microvette CB 200 ESR blood collection system is designed for 200 µl of blood only and ensures minimal patient discomfort when collecting blood. Both systems are proven to perform well in comparison with the Westergren method.

# FOCUS

A supplement of the  
Labbook Edition 2020

# ON CHINA



峻山生物-医疗  
GENE SCIENCE-MEDICALS



康立明生物  
Creative Biosciences

HEALTH  
Gene Technologies



Heal Force



Green Spring

Lifotronic



丽珠试剂  
LIVZON

Snibe  
Diagnostic



TEBSUN  
天宝颂原

WR 维锐生物  
WAYRAY BIOTECH



HealthCare  
Fast FISH Technology Leader

YHLO



In FOCUS ON CHINA we are showcasing regional medium-size enterprises which are producing interesting small devices and test kits for the European market. All companies are CE-certified and their products are transported to Europe.

## Creative Biosciences – Colosafe



**Highlights:**  
Stool DNA Testing Kit for Early Detection of Colorectal Cancer.  
First in China, Second in the World. Noninvasive, Accurate, Convenient

## Gene Science – Disposable Specimen (Swab) Collection Kit



**Highlights:**

- Available with different size and shape of shaft and tip for nasopharyngeal/oropharyngeal or other body sampling sites
- Improved patient comfort, specimen collection efficiency, and assay sensitivity with ergonomic and anatomic design
- Sterilized flocked swabs are individually packed into medical grade paper pouch

## Gene Science – Novel Coronavirus Antibodies Detection Kit\*



**Highlights:**

- Testing is not restricted by the site, equipment and personnel technical conditions
- The detection is fast and effective in 15 minutes
- The core material is high activity 2019-nCoV protein, which greatly improves the detection sensitivity
- It is convenient to sample. Serum, plasma and whole blood can be used as samples
- Wide range of application

\* Novel Coronavirus (COVID-19) Antigen Detection Kit (Latex Immunochromatography)

## Gene Science – Novel Coronavirus Antigen Detection Kit\*



**Highlights:**

- Simple and fast operation, and the test results can be obtained in only 15-20 minutes
- This kit can complete the test without additional reagents
- With high sensitivity and specificity
- Makes up for the 7-14 day window period of new crown antibody detection

\* Novel Coronavirus (COVID-19) Antigen Detection Kit (Latex Immunochromatography)

## Gene Science – Saliva Collection Kit



**Highlights:**

- Painless – The product is used to collect high-quality DNA/RNA samples in the saliva; The collection process is painless and won't cause any injury or discomfort to the human body
- Easy – The collected samples can be used for various biological experiments such as enzymatic hydrolysis, PCR and next-gen sequencing and are widely used in the collection and preservation of specimens in hospitals, scientific research institutions and households
- High Quality – It can perfectly replace blood DNA/RNA sample, especially for patients who are unwilling or unable to cooperate with blood sampling.

## Green Spring – COVID-19 IgG/IgM Antibody Rapid Test Kit



**Highlights:**  
COVID-19 IgG/IgM Ab rapid test kit, based on Colloidal gold method, to detect COVID-19 IgG and IgM Ab in Human Serum, Plasma, Blood qualitatively

## Heal Force – Biosafety Cabinet



### Highlights:

Heal Force HFsafe LC biosafety cabinets set the standard in quality, design, and innovation that comes from a heritage of over 25 years experience.

## Health Gene – SARS-CoV-2 Virus Detection Diagnostic Kit



### Highlights:

- SARS-CoV-2 Virus Detection Diagnostic Kit (RT-qPCR Method)
- WHO EUL; CE and Canadian FDA certified.

## Lifotronic– H9 Hemoglobin Analyzer

### Dimensions:

580 × 600 × 520 mm (h × w × d)

### Weight:

50 kg

### Sample loading capacity:

110 samples

### HbA1c test time:

1.2 min/T



### Highlights:

- HPLC methodology
- Dual mode: Hemoglobin analysis & thalassemia identification
- HbA1c test: 1.2 min/T; Thalassemia test: 1.6 min/T
- High capacity: 110 sample position
- CV ≤ 1.5%
- Automatic cap pierce
- Fully automated start-up, maintenance and shutdown
- NGSP and IFCC certified
- Designed for medium to big labs with daily test more than 20 tests/day

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Web: www.gene-science.com



Zhejiang Gene Science Co., Ltd. is a practical, innovative and pioneering Biotech company with the tenet: "high efficiency, precision and safety". Our business involves molecular pathology, immunohistochemistry, routine pathology, medical testing, and genetic testing.

We have R&D center, production base, and marketing center. Years of exploration and innovation allow us to build a multi-level marketing network, offering high-quality self-owned branded reagents and instruments with perfect after-sales service system for our global customers.

With professional backgrounds and years of experience in the medical device industry, our team members have the latest technologies and concepts, providing you with the best products and the best quality service experience. Welcome to contact us.



## Lifotronic – H8 Hemoglobin Analyzer

### Dimensions:

600 × 360 × 540 mm (h × w × d)

### Weight:

37 kg

### Sample loading capacity:

10 samples

### HbA1c test time:

2.2 min/T



### Highlights:

- HPLC methodology
- Dual mode: Hemoglobin analysis & thalassemia identification
- HbA1c test: 2.2 min/T;
- Thalassemia test: 6.3 min/T
- CV ≤ 1.5%
- Superior Quality Chromatographic Resolution
- Able to pierce the tube cap automatically
- Capable for small-scale rapid analysis
- NGSP and IFCC certified
- Designed for medium or private labs with daily test more than 10 tests/day

## Lifotronic – GH900 Plus Hemoglobin Analyzer

### Dimensions:

450 × 360 × 540 mm (h × w × d)

### Weight:

29 kg

### Sample loading capacity:

5 samples

### HbA1c test time:

2.2 min/T



### Highlights:

- HPLC methodology
- Compact automated HPLC system
- Hemoglobin test: 2.2 min/T
- Fully automated start-up, maintenance and shutdown
- Barcode scanner for sample identification
- Five samples loading capacity
- NGSP and IFCC certified
- Designed for small labs with daily test more than 3 tests/day

## Lifotronic – Automated ECL Immunoassay Analyzer

### Dimensions:

650 × 620 × 650 mm (h × w × d)

### Weight:

92 kg

### Sample loading capacity:

30 samples

### Reagent loading capacity:

10 reagent kit

### Reagent loading capacity:

86 tests/h



### Highlights:

- Electrochemiluminescence(ECLIA) methodology
- High accuracy and sensitivity
- Wide application range
- Perfect quality control system
- Fully automatic operation
- LCD color tough screen & concise interface
- More than 50 kind of reagent available
- STAT parameters test time only 9 minutes

## Lifotronic – FA-160 Immunofluorescence Analyzer



### Highlights:

- Immunofluorescence-based diagnostic system
- Wide diagnosis application: cardiac diseases, lung diseases, infectious diseases, diabetes, etc
- Easy operation: No sample pre-treatment required
- Six incubation channels with auto timing reminder
- 3 - 15 mins/test
- Precision CV ≤ 15%, Repeatability: CV ≤ 15 %, Stability: CV ≤ 5%
- Automatically load lot & RFID card and the scanner
- High data store: 10000 test results
- Most popular parameters are available

## Lifotronic – SARS-CoV-2 Nucleic Acid Detection Kit



### Highlights:

- Components: Nucleic Acid Extraction Kit & RT-PCR Kit
- Quantitative Real Time PCR(RT-PCR) based NAAT
- Specific detection: ORF1ab gene and N gene
- Rapid & large-scale test: 96 tests within 90 min
- High sensitivity: 200 copies/mL
- Applicable for various RT-PCR systems

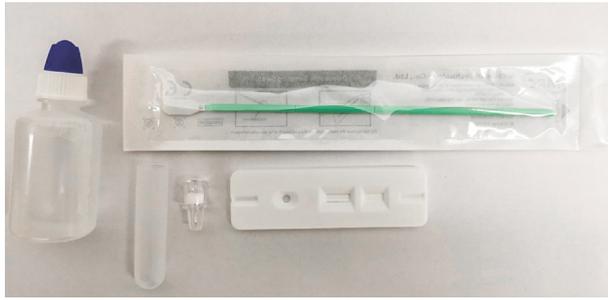
## Lifotronic – SARS-CoV-2 Antigen & Antibody Detection Kit



### Highlights:

- Specific detection: Nucleocapsid(N) protein for antigen test; IgG and IgM for antibody test
- Quick Result: test can be finished within 10 min
- High accuracy: Sensitivity ≥ 91%; Specificity ≥ 98%
- Operator-friendly
- No Limitation on Scenarios
- Room temperature transportation and storage

## Livzon Diagnostic – Rapid Test for SARS-CoV-2 Antigen (Lateral Flow)



### Highlights:

This test kit is used for in vitro qualitative detection of SARS-CoV-2 antigen. Earlier than antibody detection, and it can be detected in the early period of infection.

- Easy to use
- No equipment required
- No PCR Lab required
- Instant result in 15 minutes

## Snibe – Maglumi SARS-CoV-2 S-RBD IgG (CLIA)



### Highlights:

A better choice in post-pandemic era!

- The fully automated quantitative serology test
- Strong correlation to neutralizing antibodies level
- Assessing immunity in individuals and communities
- Accurate test result within 30 mins with ONLY 10µL sample volume (High throughput of 14,400 tests/day)

# DIAGNOSTIC SOLUTION FOR COVID-19



### Nucleic Acid Detection Kit (RT-PCR based)

- Specific detection: ORF1ab gene and N gene
- Rapid& large-scale test: 96 tests within 90 min
- High sensitivity: 200 copies/mL



### Antigen Detection Kit

- Specific detection: Nucleocapsid (N) protein
- Rapid& large-scale test: 10 min/test
- High sensitivity: 91%
- High specificity: 98%



### Antibody Detection System

- ECLIA & Immuno-fluorescence platform
- Direct targeted diagnosis: IgG & IgM
- Supportive combined diagnosis: Inflammatory cytokine, cardiac markers, etc.

## Snibe – Maglumi X8



### Highlights:

- 300 sample positions and 42 reagent positions with continuous loading function
- Random access or batch mode, STAT
- Refrigerated reagent area
- Capable to integrated several modules including Snibe Immunoassay, Biochemistry and ISE module
- Capable to link with Laboratory Automation System (TLA/LAS)
- Using disposable TIPS

## Tebsun – SARS-CoV-2 Antigen Test



### Highlights:

- Sensitivity: 92.30 %
- Specificity: 99.40 %
- Accuracy: 98.98 %
- Oropharyngeal or Nasopharyngeal Swab
- CE, ISO13485, CCCMHPIE White List

## Wayray Biotec – POCT (Fluorescence Immunoassay) Analyzer

### Reagents:

COVID-19 Antigen, SAA, CRP, PCT, IL-6, D-Dimer, Ferritin, Folic Acid, 25-OH-Vitamin D, NT-proBNP, cTnI, MYO, CK-MB



### Highlights:

- Internal quality control calibration
- ID chip reads parameter information, convenient and fast
- Large data storage capacity, can save 50,000 test results
- Built-in thermal printer

## Wayray Biotec – Novel Coronavirus Combo Antigen Test Kit\*



### Highlights:

- Easy to operate: no special equipment required, unique sample collection device
- Sample size: nasal swab, throat swab
- Fast and accurate: results can be obtained within 10 – 15 minutes
- Early detection and early treatment: Antigen detection, early window period

\*Novel Coronavirus (2019-nCoV)/Influenza A/Influenza B Virus Antigen Combo Test Kit (Latex Immunochromatographic Method)

## Wayray Biotec – Disposable Sample Collection Kit



### Highlights:

- Flocking material, good release
- Convenient handling and transportation
- Contains virus nucleic acid preservation solution

## Wayray Biotec – Coronavirus Disease Antibody Test Kit\*



### Highlights:

- Easy to operate: no special equipment required
- Sample volume: support serum, plasma, whole blood, 20ul sample is enough
- Fast and accurate: results can be obtained within 10 - 15 minutes
- Early detection and early treatment: infection can be detected within 3 - 7 days

\*Coronavirus Disease (COVID-19) IgG/IgM Antibody Test Kit (Latex Immunochromatographic Method)

## Wuhan HealthCare – Corona Virus Disease 2019 Nucleic Acid



### Highlights:

- Accurate results: Contains internal standard to avoid false negative results
- High sensitivity: Minimum detection baseline is 500 copies / mL, which ensures the detection of low virus content sample results
- Anti-pollution: "One-step" PCR reduces reaction time and avoids aerosol pollution
- High-throughput: Triple PCR reaction system, high detection flux, timely and rapid completion of multiple sample detection

## YHLO – iFlash 1800 Chemiluminescence Immunoassay Analyzer

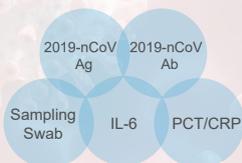


### Highlights:

- Bench-top Acridinium Ester labeled direct chemiluminescence
- Throughput up to 180 tests/hour
- More than 112 reagents available
- 50 sample position with STAT function
- 20 refrigerated reagent positions (2 - 8°C)
- 1,000 reaction vessel capacity for continuous loading



## COVID-19 Detection Solution



- Latex / fluorescence chromatography platform  
Two major platforms, high accuracy
- Qualitative/quantitative testing  
Simple operation
- Fast  
Results in 10-15min



Henan wayray Biotech co.,Ltd

E-mail:market@wayraybio.com Web:www.wayraybio.cn  
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# Companies & Suppliers

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<p><b>Alsachim, a Shimadzu Group Company</b>            160 rue Tobias Stimmer            67400 Illkirch, France            phone: +33 390 402 200            contact@alsachim.com            www.alsachim.com</p> 			12									
<p><b>Analyticon Biotechnologies AG</b>            Am Mühlenberg 10            35104 Lichtenfels, Germany            phone: +49 6454 7991-0            info@analyticon-diagnostics.com            www.analyticon-diagnostics.com</p> 					32			65				
<p><b>ASP Lab Automation AG</b>            Rugenranzel 4            25373 Ellerhoop, Germany            phone: +49 4120 70679-27            info@asplabauto.com            www.asplabauto.com</p> 		4										
<p><b>Beckman Coulter, Inc.</b>            250 S. Kramer Boulevard            Brea, CA 92822, USA            phone: +1 714 993 53 21            PANEUMarketing@beckman.com            www.beckmancoulter.com</p> 	7		12 16 21 22		32 39				69			
<p><b>CGM LAB International GmbH</b>            Maria Trost 21            56057 Koblenz, Germany            phone: +49 261 5400 1000            info.de.cgmlab@cgm.com            www.cgmlab.com</p> 									69			
<p><b>Creative Biosciences (Guangzhou) Co., Ltd.</b>            11 Kaiyuan Ave., 6th floor, Building A2, Science City,            Guangdong 510535, China            phone: +20 82510982            lindahongliu@creativebio.cn            en.creativebio.cn</p> 												78
<p><b>Diatron MI Zrt.</b>            Táblás u. 39            1097 Budapest, Hungary            phone: +36 1 436 9800            marketing@diatron.com            www.diatron.com</p> 					33							
<p><b>DRG Instruments GmbH</b>            Frauenbergstraße 18            35039 Marburg, Germany            phone: +49 6421 1700-0            raeder@drg-diagnostics.de            www.drg-diagnostics.de</p> 			19									
<p><b>DTM Medical</b>            Mainzer Straße 131            65187 Wiesbaden, Germany            phone: +49 611 92777-0            info@dtm-medical.eu            www.dtm-medical.eu</p> 					46 47							
<p><b>Dürr Technik GmbH Et Co. KG</b>            Pleidelsheimer Straße 30            74321 Bietigheim-Bissingen, Germany            phone: +49 7142 9022-0            office@duerr-technik.de            www.duerr-technik.com</p> 											75	

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<p><b>Genrui Biotech Inc.</b> 4-10F, Building 3, Geya Technology Park Guangming District 518106 Shenzhen, China phone: +86 755 26 83 55 60-1 (-2) international@genrui-bio.com www.genrui-bio.com</p>			17 23				49		61			
<p><b>Shenzhen Lvshiyuan Biotechnology Co., Ltd.</b> D Building, National Biological Industrial Park of Marinelife, No.2 Binhai Road, Dapeng, 518120 Shenzhen, China phone: +86 755 28438788 info@lsybt.com www.lsybt.com</p>												78
<p><b>Greiner Bio-One GmbH</b> Bad Haller Straße 32 4550 Kremsmünster, Austria phone: +43 7583 6791-0 office@at.gbo.com www.gbo.com</p>			17 27 29		33 42						73	
<p><b>Hamamatsu Photonics Deutschland GmbH</b> Arzbergerstraße 10 82211 Herrsching, Germany phone: +49 8152 375-203 info@hamamatsu.de www.nanozoomer.com</p>						46 47						
<p><b>Heal Force Bio-meditech Holdings Ltd.</b> 6788 Songze Avenue, Qingpu District, Shanghai 201706, China phone: +86 21 62728646 export@healforce.com www.healforce.com</p>												79
<p><b>HEALTH Gene Technologies Co., Ltd.</b> 396 Mingzhu Road, Hi-Tech Park, Ningbo 315040, China phone: +86 574 2797 8799 mingye.mao@healthgenetech.com www.healthgenetech.com</p>												79
<p><b>HORIBA Medical</b> Parc Euromédecine - Rue du Caducée - BP7290 34184 Montpellier, France phone: +33 467 141516 webmaster.med@horiba.com www.horiba.com</p>	7											
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<p><b>Improve Medical</b> No. 102, Kaiyuan Avenue, Science City, Guangzhou Economic &amp; Technological Development District, Guangzhou, China phone: +86 20 32312610 info@improve-medical.com www.improve-med.com</p>	7	4			37		51				73	

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<b>i-SOLUTIONS Health GmbH</b> Am Exerzierplatz 14 68167 Mannheim, Germany phone: +49 621 3928-0 info@i-solutions.de www.i-solutions.de										70		
<b>JADAK Europe</b> Emmastraat 16 4811 AG Breda, The Netherlands phone: +31 76 522 5588 info@jadak.eu www.jadak.eu									67			
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<b>Medat Computersysteme GmbH</b> Albrechtstraße 14 80636 München, Germany phone: +49 89 126808-0 vertrieb@medat.de www.medat.de										70		
<b>SHENZHEN MINDRAY Bio-Medical Electronics Co., LTD.</b> Mindray Building, Keji 12th Road South, High-tech Industrial Park, Nanshan 518057 Shenzhen, China intl-market@mindray.com www.mindray.com			17 18 23 24		37 38							
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<b>Olympus Europa SE Et Co. KG</b> Amsinckstraße 63 20097 Hamburg, Germany phone: +49 40 23773-0 ScientificSolutions@olympus-europa.com www.olympus-lifescience.com								56				

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<p><b>Quidel Germany GmbH</b> Leibnizstraße 11 70806 Kornwestheim, Germany MarketingEurope@quidel.com www.quidel.com</p> 							49	61				
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<p><b>SHIMADZU Europa GmbH</b> Albert-Hahn-Strasse 6-10 47269 Duisburg, Germany phone: +49 203 7687-0 shimadzu@shimadzu.eu www.shimadzu.eu</p> 			26 29	25 26 53								
<p><b>Siemens Healthineers</b> Laboratory Diagnostics 511 Benedict Avenue 10591 Tarrytown, NY, USA phone: +1 914 631 8000 www.healthcare.siemens.com</p> 	8	6	25 27		37 38 43 44		50 51	61 64 65 66	70 71			
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Today, there is so much less to do when operating an analyser, and so much more to see, know and decide when looking at the results.

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