bucher biotec Update

September 2024
www.bucher.ch

Every Fluorochrome Tells a Story

Discover more with the NovoCyte Opteon Spectral Flow Cytometer

Topics covered in this issue:

- Label-free Assessment of Live-Cells
- DNA & RNA from FFPE Samples
- Consistent Nuclei Isolation
- Spatial Multi-Omics
- Image-guided Microfluidic Cell Sorting
- Single Cell DNA Sequencing
- Tissue Clearing
- Cell Culture under Hypoxia and Pressure
- Metabolic Phenotyping
- Spectral Flow Cytometry
- Digital Imaging & Cell Counting
- ... and many more

Bucher Biotec AG • Viaduktstrasse 42 • 4051 Basel • Phone 061 269 1111 • info@bucher.ch

Discover the Future of Spatial Biology

Expand Your Research with Unmatched Flexibility and Sensitivity

Introducing the Vizgen MERSCOPE® Ultra

MERSCOPE® Ultra ushers in a new era of spatial genomics. With a significantly expanded imaging area and increased speed, MERSCOPE Ultra allows for the analysis of larger organs and multiple tissue samples on a single slide at unmatched data quality —a first in the world of spatial biology.

Maximize Your Insights with Advanced MERFISH Technology
MERSCOPE Ultra doesn't just expand your imaging area; it amplifies the quality of data you can obtain. Engineered for excellence, the platform captures more high-quality MERFISH data in every experiment, enabling deeper insights into cellular function and gene expression.

Stay Ahead in Your Research
With 3x increased imaging area and 2x speed, coupled with enhanced MERFISH sensitivity, MERSCOPE Ultra will offer greater sample flexibility and throughput, accelerating both human and translational research.

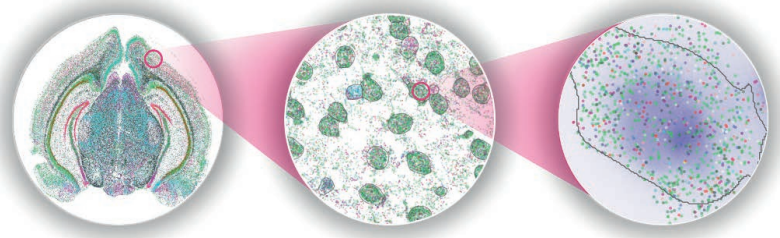
Don't miss out on this opportunity to take your spatial omic research to the next level.

Why choose MERSCOPE Ultra?

- **Broad Imaging Area:** Process up to 3 cm² of tissue per slide, allowing researchers to place multiple tissues or analyze larger organs and species for the first time.
- **Unprecedented Speed:** Engineered for high-performance and optimized for throughput, MERSCOPE Ultra enables you to gather high-quality data faster than ever before.
- **Optimized Data Quality:** With the new MERFISH 2.0 chemistry, enjoy enhanced performance, particularly in archival samples like FFPE, ensuring both sensitivity and reproducibility across diverse sample types and RNA qualities.
- **Flexible Reagent Usage:** The only spatial platform offering adjustable flow cells, MERSCOPE Ultra ensures efficient reagent consumption based on the imaged area, balancing economy with performance.

Upcoming Vizgen European User Meeting

MERFISH • Multiplexed Error Robust Fluorescence *In-Situ* Hybridization
Profiling 483 genes with subcellular resolution across a full mouse coronal slice



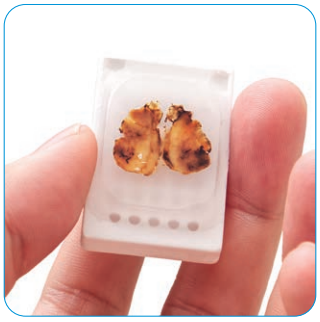
WHOLE SECTION	WIDE FIELD OF VIEW	SUB-CELLULAR
9 x 7 mm	200 x 200 micron	12 x 12 micron
Organization of tissue	**Cell interaction/function**	**L2/3 IT Glutamatergic neuron**

Nucleic Acid Purification: Pure and Simple®

Extract RNA and DNA from FFPE with Confidence

Bionano's Ionic® Purification System

The Ionic® Purification System uses the principles of **isotachophoresis** to extract and purify nucleic acids from FFPE samples without binding, washing, or stripping from fixed surfaces. Since nucleic acids are intact and remain in their native form, not denatured or dehydrated, the Ionic system is able to extract higher yields of higher quality total RNA and DNA, ultimately resulting in superior data.



Studies have also shown that the Ionic system is able to extract nucleic acids from FFPE where column- and bead-based methods could not.

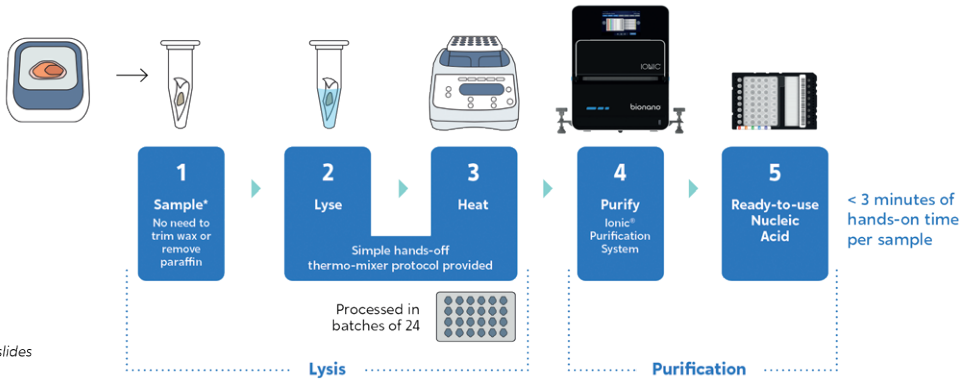
Isotachophoresis, a Superior Approach to Nucleic Acid Separation
Isotachophoresis (ITP) separates and concentrates charged molecules in solution solely based on their electrophoretic mobility. Biological samples are gently lysed and added to the Ionic® Fluidic Chip. An electric field is then applied to the chip and the nucleic acid is isolated in its natural, native form. The nucleic acid is not denatured or dehydrated, and there's no binding to, or stripping from, fixed surfaces. The result is a higher yield of pure nucleic acid that is less fragmented and free from bead or wash buffer contamination.

- **Simplify Lysis**
  Deparaffinize, lyse, and de-crosslink in a single reaction without using harsh chemicals
- **Eliminate Bias**
  Extract nucleic acid regardless of fragment length or GC content
- **Minimize User Involvement**
  Extract and purify 8 samples in one hour with just 3 minutes of hands-on time per sample
- **Improve Reliability**
  Minimize user-to-user variability, cross-contamination, and sample loss from wash solvents

Simplified FFPE Workflow < 3 minutes of hands-on time per sample

Traditional Column-based Kit Workflow

Bionano Ionic® Isotachophoresis Workflow



*Compatible with scrolls or slides

Untangle the Complexity of Cancer with True Multi-Omics

Single-cell DNA Sequencing and Protein Analysis

The Mission Bio Tapestri Platform

The Mission Bio Tapestri Platform is the only system capable of simultaneously providing both genotype and phenotype data from the same cell, across thousands of single cells.

Mission Bio Tapestri is a targeted solution for:

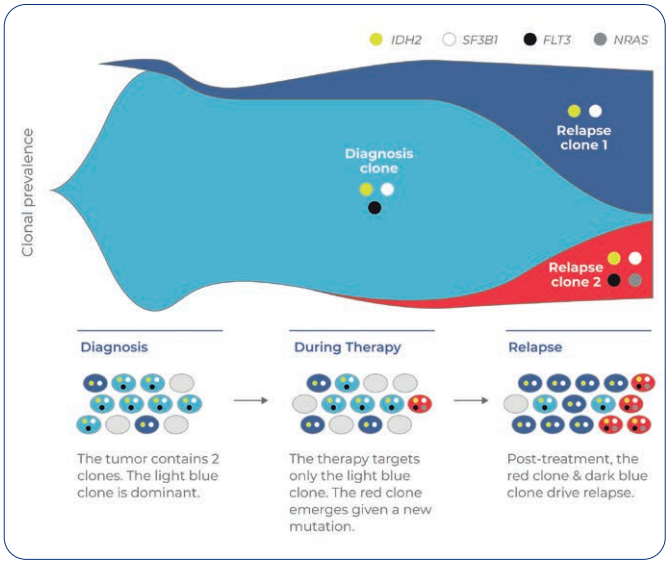
- Hematologic Malignancies
- Solid Tumor Profiling
- Genome Editing Validation
- Custom-designed Solution

Load your cells on the cartridge and use the proprietary two-step microfluidic workflow of the Tapestri for single-cell encapsulation and barcoding. Sequence the genomic regions of interest and the oligo-tagged antibodies bound to the same single cell to track clonal evolution, reconstruct phylogenetic trees, uncover zygosity and mutation co-occurrence, reveal therapy resistance mechanisms, and monitor disease during remission to track MRD (minimal residual disease).

Obtain multiple analytes from a single cell:

- Single nucleotide variants (SNVs)
- Copy number variations (CNVs)
- Protein expression

You can run targeted single-cell DNA panels with catalog and customizable content, so you can focus on the mutations and regions of interest that are most informative for your disease research. For simultaneous single-cell DNA and protein analysis, configure your own antibody cocktail from a growing catalog of pre-optimized antibody oligonucleotide conjugates (AOC). Or, start with the pre-designed 45-protein TotalSeq™-D Heme Oncology Cocktail. TotalSeq™ oligo-conjugated antibodies from BioLegend integrate seamlessly into the Tapestri single-cell DNA sequencing workflow to amplify the power of single-cell analysis.



- **NEW:** do more single cell with less – 20,000 cells input possible
- Single-cell DNA & protein analysis from up to 10,000 single cells
- High sensitivity for rare clones – down to 0.1%
- Intuitive software for panel design, data analysis and visualization
- Compatible with TotalSeq™-D antibody content from BioLegend

TARGET SELECTION → CHOOSE A PRE-DESIGNED OR CUSTOM DNA PANEL

SAMPLE PREP → ADD A PROTEIN PANEL AND SIMPLE CELL STAINING PROTOCOL

LIBRARY PREP → SINGLE WORKFLOW COMBINES DNA AND PROTEIN PANELS

SEQUENCING → SINGLE SEQUENCING RUN FOR MULTI-OMICS SINGLE-CELL DATA

PIPELINE → INTEGRATED PIPELINE FOR MULTI-OMICS ANALYSIS

ANALYSIS POWERFUL ANALYSIS AND VISUALIZATION SOFTWARE

Discover the Power of Cellular Energy Metabolism

Agilent's Seahorse XF Pro Analysis Platform

Energy metabolism plays a central role in a wide variety of cellular and physiological processes. How energy metabolism is programmed in cells not only can serve as a key indicator of **cell health**, but it also can be a powerful predictor of **cell fate, function**, and **fitness**. Such knowledge provides deep insights into the processes behind activation, proliferation, differentiation, and cell death, thus advancing science and assisting therapeutic discovery and development.

The Agilent Seahorse XF analyzer revolutionized the measurement of bioenergetics in live cells in real time. Building upon that success, we're introducing the Seahorse XF Pro platform. It combines enhanced instrument sensitivity and data consistency with intuitive custom workflow solutions and advanced experimental design and data analysis tools.

What sets Agilent Seahorse XF Pro apart?

- **Better precision at low OCR.**
  Confidently interrogate more immune cell types, as well as cell types that are bioenergetically compromised.
- **Verified instrument performance.**
  Maintain consistent XF data from plate to plate with verified CV% and standard deviations for OCR/ECAR/PER rates.
- **Wave Pro data quality view.**
  Automatically flag erroneous data and more easily reject outliers.
- **Optimized temperature control.**
  Control edge effects when combined with the new Agilent Seahorse XF Pro M cell culture plate.
- **Automation enabled.**
  Designed to communicate with automation integration software.
- **Analytical instrument qualification (AIQ) service.**
  Ensure proper instrument performance through customer acceptance criteria and documentation.

Invitation to our upcoming 4th Agilent Seahorse Swiss User Group Meeting & Seminar

Live-Cell Metabolic Profiling

Agilent Seahorse XF Platform - Measure what's important to your cells

Metabolism in Parasitic Helminths
Keynote by **Prof. Britta Lundstroem**, Bern

Mitochondria in Brain Aging and Neurodegenerative Diseases
Keynote by **Dr. Amandine Grimm**, Basel

Seminar Topics:

- Seahorse XF Toolbox for Cellulare Metabolism
- XF Real-Time ATP Rate Assay: The new Mito Stress Test?
- Assay Quality Control
- Do you know Seahorse Analytics?
- Normalization Strategies

It is our pleasure to invite you to our 4th Seahorse Seminar & User Meeting in Switzerland. Using Agilent Seahorse XF Analyzers, scientists are continuing to obtain powerful functional data from live cells, in real-time, gaining a greater understanding of cell metabolism.

Coffee breaks and lunch time will allow for interesting interactions with your peers and exchange with users of the Seahorse XF Analyzer.

Save the Date:
Wednesday, October 16th 2024, Bern

More details coming soon!

Visualize and Sort High Integrity Cells

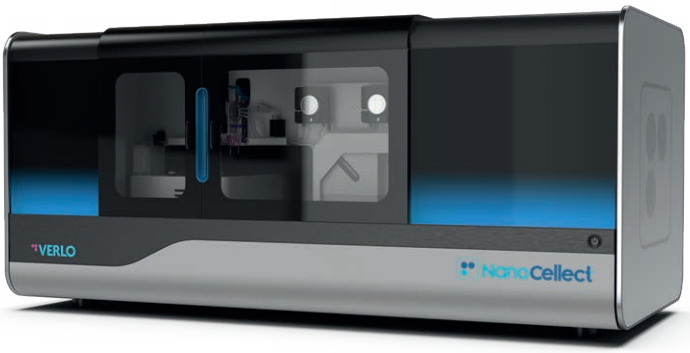
Sort Cells You Can See With the Gentle Microfluidics You Know

Discover NanoCellect' World's First Two-Laser Image-guided Cell Sorter

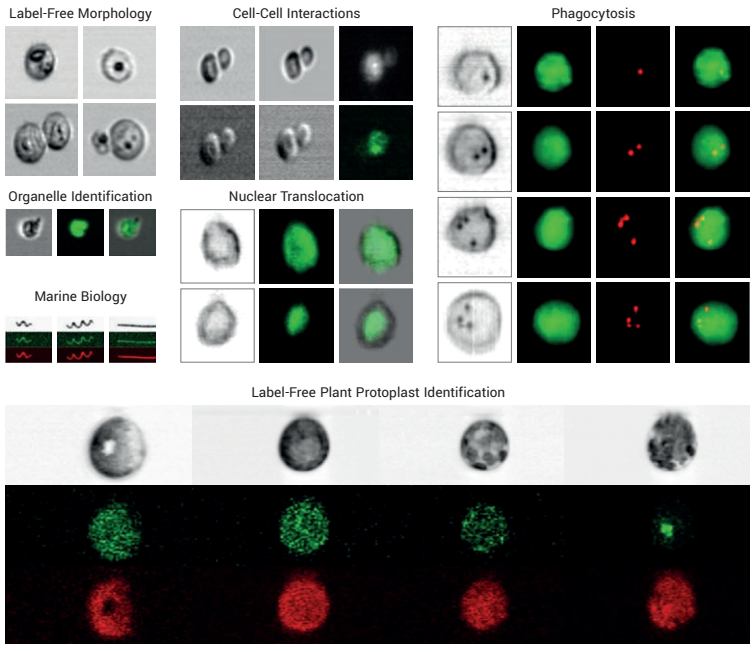
A classic challenge in biological research: how to visualize and sort cells effectively, easily, and of high quality. As science continues to move forward into increasingly complex realms, the **VERLO Image-Guided Cell Sorter** is now providing conventional flow cytometry and cell sorting along with the ability to perform imaging analysis to identify and sort cells based on morphology, subcellular localization and more.

The **VERLO** instrument significantly expands the capabilities of gentle benchtop microfluidic cell sorting. With two lasers and nine colors, plus 3 label-free parameters, it maintains simple workflows for either bulk sorting or single-cell dispensing into 96- or 384-well plates with an integrated cell dispenser. This flexibility in performance, along with the additional abilities of dual-laser cytometry and imaging makes it ideal for use in many different research fields and application areas like stem cells, single-cell genomics, cell line development, gene editing, antibody discovery, immunology, infectious disease, and more.

Cell sorting has never been so easy!



VERLO Key Applications



Flow and Imaging Detectors
Extend conventional flow cytometry with rich image and morphology data enabled by our unique detection architecture with dual lasers and 9 fluorescent colors.

Seeing Is Believing
Images provide immediacy for data and allow generation of novel hypotheses and insights.

High Sensitivity and Resolution
With an optical resolution of 1 micron and < 250 MESF sensitivity, along with transmission, forward and back scatter, the VERLO can detect particles as small as 1 µm.

Compact, Simple and at Your Bench
Intuitive software, fixed optics, no fluidics cart and less than one minute clean-up time. With a small footprint, NanoCellect's is redefining the benchmark for Imaging Cytometry at the bench.

Label-Free Imaging
Combine imaging and flow cytometry transmission, forward and back scatter measurements for label-free image analysis and sort of cells based on morphology.

Image Feature Extraction
Quantitatively characterize cells with automated feature extraction for physical dimensions and textures.

Healthy Cells
At < 2 psi, the VERLO is gentler than any conventional cell sorter, enabling healthier cells post-sort, especially for sensitive engineered lines, primary cells, and stem cells.

Contaminant- and Biohazard-Free
Disposable, aerosol-free microfluidic cartridge allows for sterile sorting that protects the sample from the environment and scientist from the sample.

Healthy Cells. Broad Capabilities. Better Science.

Discover more with the new NovoCyte Opteon™ Spectral Flow Cytometer

Introducing the Agilent NovoCyte Opteon™ Spectral Flow Cytometer

Featuring up to five lasers, 73 detectors, and a demonstrated 45-color panel, **NovoCyte Opteon** is your gateway to multidimensional cell analysis. An innovative optics design, advanced electronics, and signal processing algorithms deliver data with high sensitivity, high resolution, and wider dynamic range. From rare cell populations to subtle variations, no detail escapes your scrutiny. Embedded fluidic sensors ensure the delivery of consistent data regardless of experimental conditions.

NovoCyte Opteon features

- Challenging dye combinations
- More accurate unmixing
- Detect small and large particles in the same sample
- Versatile NovoSampler S compatible with 40-tube rack and 384-/96-/48-/24-well plates
- Robotic automation ready

Use the powerful and intuitive NovoExpress software with a built-in fluorochrome reference library, covering all commercially available fluorochromes. It's more than an instrument; it's a partner in your scientific journey.

Opteon Spectral Flow Cytometer Configuration Option

Models	Number of Lasers	349 nm (20 mW)	405 nm (130 mW)	488 nm (100 mW)	561 nm (100 mW)	637 nm (120 mW)	Total Number of Detectors
		19	18	14	11	8	
UVBYR	5	√	√	√	√	√	73
UVBR	4	√	√	√		√	62
VBYR	4		√	√	√	√	53
URYB	4	√		√	√	√	55
UVYB	4	√	√	√	√		65
VBR	3		√	√		√	43
VYB	3		√	√	√		45
RYB	3			√	√	√	35

Flow Cytometers with Exceptional Reliability:
Agilent's NovoCyte Penteon, Quanteon and Advanteon

Flow Cytometer Performance you can trust with the Flexibility you need

The NovoCyte Penteon™, NovoCyte Quanteon™, and NovoCyte Advanteon™ flow cytometers build on their successful predecessor, the NovoCyte, to provide an expanded set of capabilities that accommodate today's high-end and increasingly sophisticated multicolor flow cytometry assays. Scientists now have the flexibility to choose from up to 30 fluorescent channels utilizing 1–5 lasers with up to 30 independent detectors.

Advanced Data Analysis made easy by NovoExpress®

- Cell Proliferation Modeling
- New Cell Cycle Analysis Module
- Heat-map Data Display

The NovoSampler Q™, which can be integrated into different laboratory automation platforms, efficiently processes both FACS tubes (using a 40-tube rack), and 24-, 48-, 96-, and 384-well plates. The intuitive and industry leading NovoExpress® software has been further advanced, providing an exceptional user experience in data acquisition, analysis and reporting.

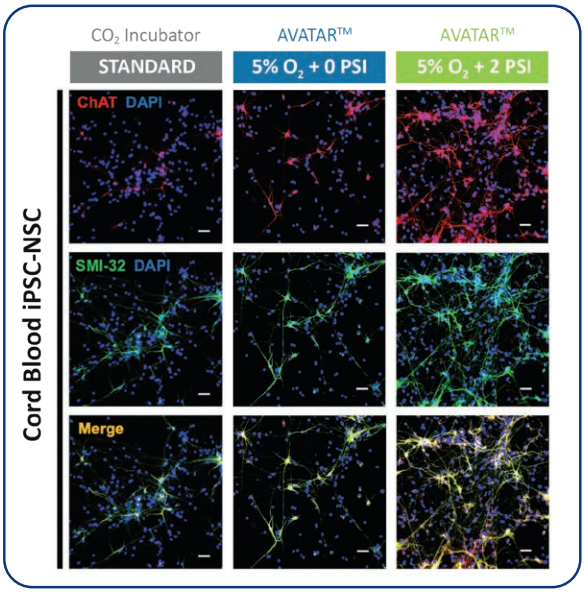
Walk-away Automation Simplifies your Workflow

Control Your Stem Cell Destiny:

Improved Differentiation, Maturation & Proliferation of Stem Cells

Xcell Biosciences' Avatar™ System

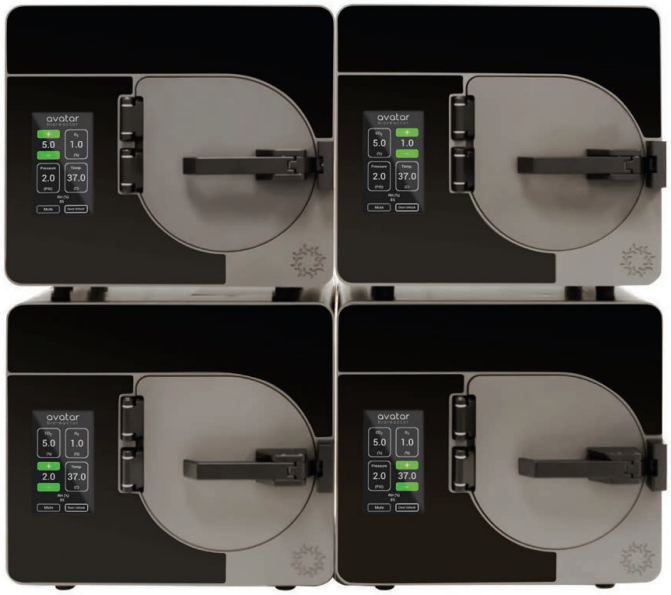
The ability to derive patient-specific neuronal cell types has proven to be a critical tool for human developmental studies, drug discovery, and regenerative medicine. The ability to direct the differentiation of stem cells into neuronal cell lineages or other cell types has enabled investigators to develop models for a variety of diseases. However, there remains an urgent need to be able to produce these phenotypically mature cell types more efficiently and consistently in vitro, as current methods are inherently time consuming with high donor-to-donor variability in efficiency.



Using the Xcell Biosciences AVATAR™ System, you can modulate both oxygen and pressure in vitro to better mimic the microenvironment of the human body, e.g. the neural cell niches during the differentiation and maturation process. As a result, this technology has enabled researchers to generate neuronal cell types with greater efficiency, improved marker expression at earlier time points, and with improved reproducibility across donors.

Hypoxia & Pressure Drive More Efficient Differentiation and Increases Proliferation

Oxygen and pressure can be leveraged, in culture, towards modulation of stem cell state by inducing gene expression changes as well as altered epigenetic or metabolic states. Furthermore, oxygen and pressure levels can be fine-tuned to enhance cell proliferation. Dr. Sang Eon Park et al. from Samsung Medical Center, Korea, recently reported on improved proliferation of mesenchymal stem cells under hypoxia and pressure, published in International Journal of Molecular Sciences. (doi:10.3390/ijms21197092)



Finally, an incubator designed specifically for the cultivation of primary human cells. The AVATAR System lets you fine-tune oxygen and pressure levels to cater culture conditions to your cell type of interest. Customizing settings based on native and physiological conditions allows cells to behave as they would in vivo, because the human body microenvironment is hypoxic and pressurized.

Additional Stem Cell Applications Improved by Hypoxia & Pressure Control with the AVATAR™

- ***Fibroblast to iPSC Reprogramming***
- ***iPSC to NPC Neural Induction***
- ***NPC to Motor Neuron Maturation***
- ***NPC to CNS-type Neuron Maturation***
- ***Late-stage Cardiomyocyte Maturation***

Sample to Genomics Solution

Single Cells or Nuclei from Solid Tissues in Minutes

Introducing S2 Genomics' Singulator Platform

S2 Genomics is developing integrated sample preparation systems for processing tissues into genomic samples for single-cell genomics and cell biology studies. The Singulator enables rapid and hands-off tissue dissociations, making it easy for researchers to reproducibly prepare suspensions of high quality nuclei or cells for a wide range of omics applications.

The Singulator 100 and 200 overcome the challenges of manual tissue preparation methods by producing consistent cell or nuclei isolations from a variety of solid tissue samples, reducing hours of hands-on processing to minutes. Its ability to perform cold dissociation minimizes the expression of stress-related genes in cells and helps preserve RNA quality in nuclei.

Unlock Precious Tissue Samples
Singulator utilizes single-use cartridges to dissociate solid tissues into suspensions of single cells or nuclei.

The newly introduced NIC+ small sample cartridge is ideal for ultrasmall, precious samples of 1 - 20 mg. Its performance has been demonstrated for as small as 1mg of tissue for nuclei isolations.

- **Reproducible & Precise**
- **Faster than Manual Extractions**
- **Programmable & Customizable**

- **New RNAse Inhibitor v2**
  Enhance the Quality and Reliability of Your Single-Nuclei Sequencing Experiments

The Singulator S200 and Singulator S200+

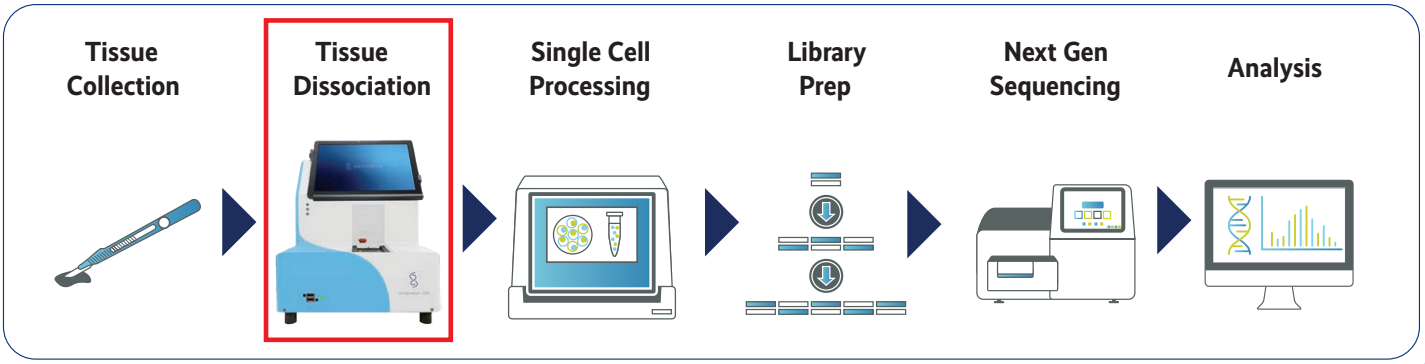
Independent Bays
Independently addressable sample bays. Isolate cells or nuclei from either bay at any time.

Rapid Results
Nuclei in ~7 minutes. 8 samples complete in ~30 minutes.

Easy to Use
Get great results on day one. Robust protocols are preloaded and easily optimized for new tissue types.

NOW SUPPORTING... with the new Singulator S200+

- **FFPE Tissue Samples; Isolate nuclei from FFPE slices, enables snRNA-Seq for FFPE samples**
- **Deparaffinization, rehydration, rinsing, and enzymatic digestion are done with FFPE designated cartridge, and nuclei isolation in a NIC+ cartridge**



Sectioning is Time. We Cut the Time!

Tissue Clearing for High-Resolution 3D Imaging

Logos Biosystems' X-CLARITY™

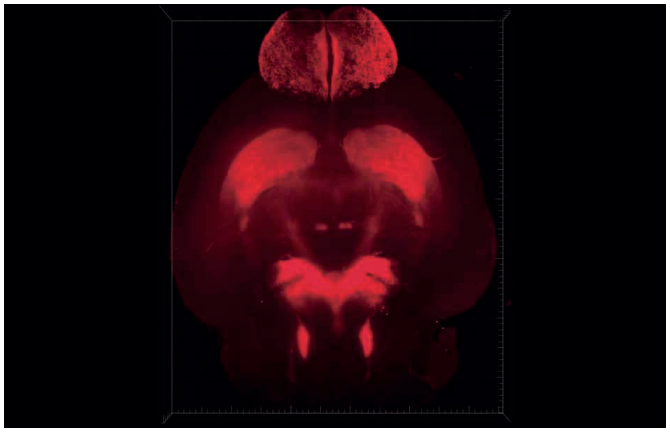
The X-CLARITY System is an all-in-one, easy-to-use solution for electrophoretic tissue clearing. Its unique design accelerates the removal of lipids from tissues while preserving the structural integrity of the sample.

Utilizing Electrophoretic Tissue Clearing (ETC), platinum-plated electrodes generate an electric field to accelerate the removal of lipids from tissues in a highly efficient manner. A built-in temperature control system actively cools and heats buffer to maintain consistent temperatures during clearing. Buffer is constantly circulated to ensure consistent buffering capacity, temperature control, and elimination of tissue clearing byproducts.

- **Precise temperature control**
  - Active buffer cooling and heating capacity
  - Sensitive and accurate temperature sensor
- **Compatible with multiple tissue types and sizes**
  - Electrophoretic and passive clearing
  - Holders of various sizes available
- **User-friendly setup**
  - Simple touchscreen interface
  - Ready-to-use clearing solution

DeepLabel™ Antibody Staining Kit

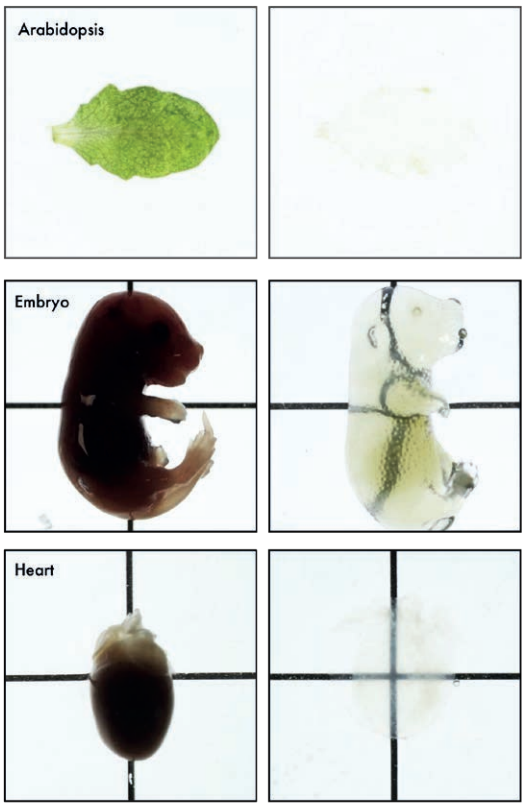
The DeepLabel Antibody Staining Kit is a set of non-toxic, ready-to-use reagents optimized for use with clarified tissues. With DeepLabel, macromolecular probes can rapidly and efficiently penetrate thick, protein-dense tissues for site-specific binding at lower antibody concentrations. DeepLabel facilitates homogenous antibody staining with 2.6x greater signal-to-background ratio than conventional staining methods. Use DeepLabel for vibrant fluorescence imaging at subcellular resolution. Compatible with virtually all antibodies and all cleared tissues, DeepLabel enhances antibody diffusion into cleared tissues.



Whole adult mouse brain stained using DeepLabel with anti-TH (red).

Accelerate your research with X-CLARITY!

X-CLARITY Tissue Clearing Samples



Automated High Content Imaging

Acquisition & Analysis for Drug Discovery & Cell Biology

Logos Biosystems' CELENA® X

The CELENA® X High Content Imaging System is an integrated imaging system designed for rapid, high content image acquisition and analysis. Customizable imaging protocols, image-based and laser autofocusing modules, and a motorized XYZ stage simplify well plate imaging and slide scanning. It is as flexible as powerful, with interchangeable objectives and LED filter cubes to accommodate a wide range of fixed and live cell imaging applications.

Applications:

- Cell-Based Assays
- Cell Counting
- Drug Discovery
- Histology
- Live Confluency Monitoring

We are looking forward to your call in order to discuss your specific application!

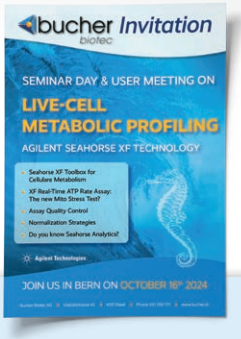
Key Features:

- Easy to customize for microfluidic devices
- Rapid multi-well plate imaging
- Powerful cell based assay software package
- Area scanning & image stitching
- Z-stacking & focus merging
- Time lapse live cell imaging
- Whole slide imaging

UPCOMING EVENTS

Please visit us at these events:

- **Swiss Physiology Meeting 2024**
  Fribourg, 3. September 2024
- **ILMAC Lausanne 2024**
  Lausanne, 18. / 19. September 2024
- **Vizgen European User Meeting**
  EMBL Heidelberg, 12. November 2024
- **Swiss CYTO 2025**
  ETH Zürich, 5. - 7. February 2025
- **Parasitology Meeting II**
  vonRoll Areal Bern, 11. February 2025
- **LS2 Annual Meeting 2025**
  Fribourg, 12. / 13. February 2025



SAVE THE DATE

- **Bucher Biotec**
  4th Swiss Agilent Seahorse User Meeting & Seminar
  Bern, 16. October 2024

SPECIAL OFFER

ONI's cutting-edge **NanoImager benchtop super-resolution microscope**, offers unparalleled single-molecule localization capabilities, enabling you to see the unseen and make groundbreaking discoveries. Whether you're in cell biology, neuroscience, or drug development, this powerful tool can elevate your work to the next level.

Contact us today in order to learn more about how our demo unit ONI NanoImager in excellent condition can propel your research with Nanoscale Imaging in your lab!

Next Generation Cell Counters

The Champion's Way of Cell Counting. Because Time is Power!

Logos Biosystems' Luna™ Automated Cell Counter Series

The popular LUNA™ Family of Automated Cell Counters
This highly advanced product family of automated cell counters is used by highly satisfied researchers in numerous labs worldwide.

Luna-III™ Features:

- Erythrosin-B & Trypan Blue
- Disposable or Reusable Slides
- Data Re-analysis
- Affordable
- Seamless Network Integration

The **new Luna-III™ Automated Cell Counter** builds on the success of its predecessor, the Luna-II™, with several key improvements that enhance its functionality and performance.

These advancements include **live cell detection for large or aggregated cells**, new features such as internal storage and **advanced autofocus**, the ability to reanalyze data and Find Cells feature, and outstanding linearity and low variability in cell concentration and viability measurements.

The LUNA-III™ Automated Cell Counter incorporates machine learning trained algorithms first introduced in our most advanced model, the LUNA-FX7™. Enhance your lab's productivity and precision with the Luna-III™.

All our cell counters are compatible with the reusable slide for sustainability.

The **LUNA-FX7** is our most powerful cell counter, with unmatched cell counting accuracy, a maximum counting volume of 5 µL (10 times that of conventional cell counters), **all new optics**, dual fluorescence and brightfield illumination, a **fast and precise autofocus**, and **multichannel pipette-ready 8-channel slides** to count up to **eight samples simultaneously**.

To help monitor and optimize bioprocesses, the LUNA-FX7 has built-in quality control features and precision validation slides. 21 CFR Part 11-ready, the LUNA-FX7 improves the security and efficiency of your lab's workflow.

Unmatched cell counting accuracy

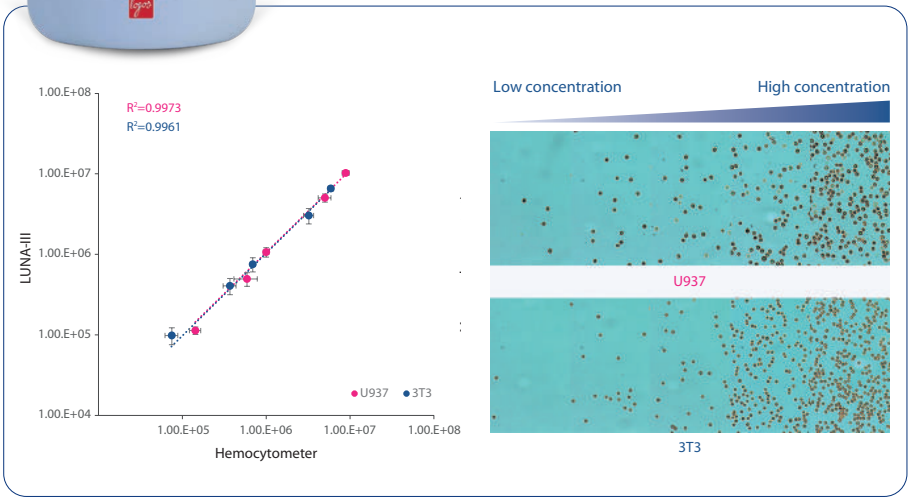
- Increased counting volume for the lowest CV per count
- More robust and sophisticated counting algorithms
- Customizable cell-detection protocols

Optimized for bioprocess production applications

- Quality control and validation software
- Range of standard validation slides

21 CFR Part 11 ready

- User access and rights management
- Online data storage and control
- Encrypted electronic records



LUNA-FL™ Dual Fluorescence Cell Counting
The LUNA-FL inherited the proven performance of the LUNA Automated Cell Counter with the brightfield microscope optics and the powerful and accurate cell counter algorithm. The integrated dual fluorescence microscope optics of the LUNA-FL allows you to precisely stain live / dead cells and thereby exclude undesirable debris. Resulting in the most accurate cell counting experience ever!

Rapid Single Bacteria Cell Quantification

Results in Minutes, Not Days

Logos Biosystems' QUANTOM Tx™ Microbial Cell Counter

Although smaller and simpler than their eukaryotic counterparts, bacteria are an incredibly diverse group of organisms that come in multiple shapes, sizes, and arrangements. Colony counting is highly variable and unreliable, as it is only an estimate of the viable cells present. Even expensive flow cytometers and laser scanning cytometers register each particle, single or clustered, as a single event.

The QUANTOM Tx™ Microbial Cell Counter is an image-based, automated cell counter that can detect individual bacterial cells in mere minutes. Its novel bacteria-optimized cell detection software can count individual bacterial cells in even the tightest clusters.

Please contact us in order to discuss your specific cell counting requirements.

Innovative Counting Process Ensures Accurate Counts

Staining
QUANTOM™ Total Cell Staining Dye easily permeates both gram positive and gram negative bacteria to stain both live and dead cells. QUANTOM™ Viable Cell Staining Dye efficiently labels viable bacteria.

Immobilizing
Stained cells are mixed with our bacteria-optimized loading buffer, loaded into QUANTOM™ M50 Cell Counting Slides, and spun in the QUANTOM™ Centrifuge to immobilize and evenly distribute the cells throughout the counting chamber to ensure accurate cell counts.

Counting
The QUANTOM Tx™ captures up to 10 high-resolution images and counts the cells in each. The highly sophisticated software can distinguish individual cells in various arrangements such as tight clusters or in sequence to produce accurate and reliable total bacterial cell counts.

Need a Training Refresher?

Master Your Cell Counting with LUNA™!

Are you getting the most out of your LUNA™ cell counters? Our comprehensive training sessions are designed to help you achieve unmatched accuracy and efficiency. From basic setup to advanced counting techniques, our experts will guide you through every step. Gain confidence in your results and optimize your workflow. Book your personalized LUNA™ training session today and take your cell counting to new heights!

Contact our Application Scientists at **info@bucher.ch**

Vadim Saratov, Ph.D.
Application Scientist

Michael Colombo, MSc.
Application Scientist

Cell Separation Made Simple!

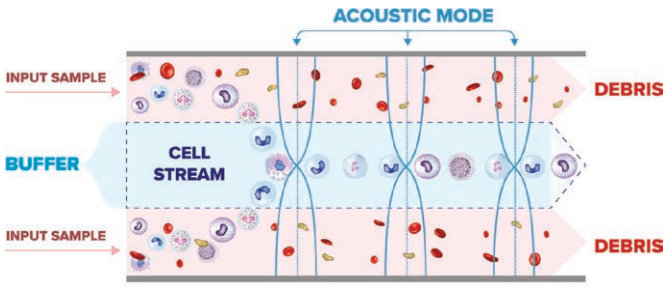
Isolate your specific cells in a fast & gentle way

The MARS™ Platform by Applied Cells

The MARS family of instruments provides a breakthrough solution to complete the workflow of cell separation and enrichment. Applied Cells' proprietary technology offers a unique advantage in the enrichment of target cells with high recovery, high purity and high reproducibility.

MARS Acoustics
MARS active-microfluidics acoustics allow for label-free immune cells separation from lysed cell debris, dead cells, and other small particles. The acoustic force within MARS® CPC (Cell Processing Chip) separates particles based on differences in their physical parameters (size, etc.) with high speed. The CPC is tunable to preferably enrich desired cells. Isolated cells are ready for single-cell phenotypic and genomic analysis as well as expansion.

MARS Magnetic Separation
MARS immuno-magnetic separation modules separate cells bound to magnetic beads from cells unbound to magnetic beads in flow channels, without the need for dedicated columns. No matrix means that the dead volume is reduced, and a minimal number of cells are trapped in the system, leading to unprecedented recovery.



Plasma Cell Isolation
Uncover new insights in Multiple Myeloma research through efficient CD138+ cell isolation.

Stem Cell Isolation
Transform the isolation of CD34+ hematopoietic stem cells (HSC), maximizing purity and recovery.

Cell Therapy Development
Streamline cell development from small-scale optimization, through upscaling to cell manufacturing.

Cell and Nuclei Enrichment
Effortlessly separate nuclei from complex samples with a gentle, single-step acoustic wash.

The MARS experience offers:

- Broad range of samples
- Consistent and reproducible results
- High recovery AND high purity
- High cell viability
- Minimal hands-on sample preparation
- Preprogrammed assay protocols
- Low conusmbales cost, low reagent consumption

MARS CS

Acoustic modules for sample washing and concentration combined with the magnetic module for positive or negative cell selection

MARS BAR

Magnetic technology for positive or negative cell selection

MARS SP

Acoustic technology for cell washing and cell concentration

Who's Who at Bucher Biotec AG

Meet the Team!

Challenge us for a detailed product evaluation!

Company Profile

Bucher Biotec AG is a privately held Swiss distributor company representing some of the most advanced US, European and Asian manufacturers of highly innovative life science research instrumentation, associated reagents and consumables.

Founded in 1978 by Paul and Anna Bucher the company management in 2003 changed to the next generation. Marc Bucher has taken over the lead of the company as CEO and Chairman. Anna and Paul Bucher remain members of the board.

We are extremely proud of our distinguished customer base in the pharmaceutical, biotechnology, agricultural, food and related industries, in all life science research oriented academic institutions, in numerous governmental, clinical and environmental labs and in all of the University hospitals.

Our highly competent, well educated team is focused on understanding our customer's needs in order to propose optimal solutions for demanding research tasks enabling the acceleration of scientific exploration.

Company Mission

Since our inception we strive to provide a truly high standard in customer support, pre- and post-sales, applications support as well as a comprehensive technical service.

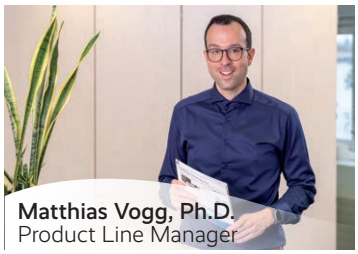
Bucher Biotec AG
Viaduktstrasse 42
CH-4051 Basel, Switzerland

Tel. +41 (0)61 269 1111
Fax +41 (0)61 269 1112
info@bucher.ch
www.bucher.ch

Challenge us for a detailed product evaluation!

Marc Bucher
CEO & Chairman

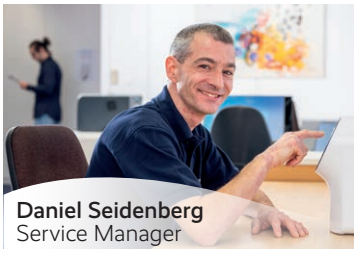
Georg Kienzle, Ph.D.
Director Sales & Support



Matthias Vogg, Ph.D.
Product Line Manager

Michael Colombo, MSc.
Application Scientist

Vadim Saratov, Ph.D.
Application Scientist



Daniel Seidenberg
Service Manager

Dominik Pinck
Service Engineer

Daniel Tanner
Manager Order Processing

Marie-Josée Schoffit
Order Processing

Visualize Live-Cell Function at Scale

Studying Cell Biology, Label-free and Powered by Microchips

Introducing the CytoTronics Pixel™ Systems

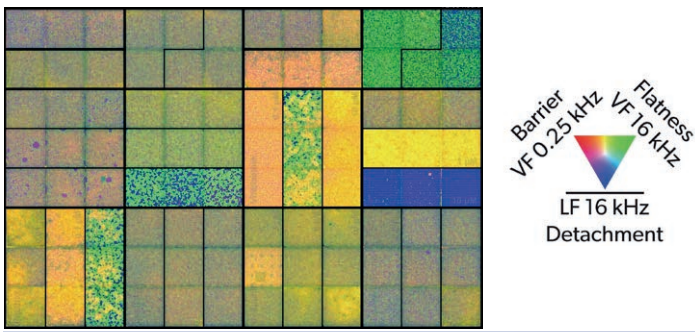
Pixel enables high-resolution, multiplexed, real-time assessment of live-cell characteristics, providing deeper understanding of how chemical or genetic perturbation affect cell function.

Addressing a Wide Range of Cell Biology Needs
Pixel enables functional and morphological mapping of live cells, combining readouts from multiple assays into one.

Applications:

- Cancer Cell Biology
- Cardiac Function
- Endothelial and Epithelial Cells
- Neuron Function
- Stem Cell Biology
- Mechanism of Action/Toxicology

A Breakthrough in Semiconductor-to-cell-biology Interface
At the core of the Pixel system is a proprietary microplate embedded with custom-designed semiconductor microchips at the base, providing thousands of measurement and stimulation electrodes in each well. The electrodes can **monitor cell viability**, **morphology**, **electrophysiology**, **metabolism**, and more while generating electrical images of single-cell spatial resolution. The system is designed for ease of use by enabling plating of any cell type with a wide range of biological coatings.



Multiparametric data at high throughput: A 96-well plate with MDCK cells was treated with a variety of compounds. RGB channels represent orthogonal measurements. Colors illustrate the diversity of observed compound responses at 48 hours post treatment.

The Pixel™ System
Pixel is a system of plate and reader options designed to suit your application and utilizes secure cloud-based data processing for real-time monitoring of your experiments. Users can implement a Pixel Primo for low-throughput applications, a Pixel Octo for high-throughput, or run both in parallel to screen tens of thousands of wells simultaneously.

Multi-modal Insights
Pixel's semiconductor-based 96- and 384-well plates cater to diverse requirements in cell biology applications by enabling **impedance based**, **electrochemical**, and **electrophysiological mapping** of **live cells**, with multiparametric real-time readouts at single cell resolution.

Users of a Pixel system gain immediate insights for endothelial and epithelial cells, cancer cell biology, mechanism of action/toxicology, stem cell biology, cardiac function, and neuron function, with more to come.

2024 R&D 100 WINNER

Pixel has won an R&D 100 award!
It's an honor for CytoTronics' novel semiconductor-to-live-cell-biology interface to be recognized as a breakthrough product by the global science and innovation community. Congratulations to the CytoTronics' team of go-getters and inspired thinkers for all their dedication to changing the way the world looks at cell biology.