![bucher biotec Update logo]

bucher Update
biotec

- **DNA & RNA from FFPE Samples**
- **Consistent Nuclei Isolation**
- **Spatial Multi-Omics**
- **Microfluidic Cell Sorting**
- **Single Cell DNA Seq**
- **Tissue Clearing**
- **Cell Culture under Hypoxia and Pressure**
- **Metabolic Phenotyping**
- **Reliable Flow Cytometry**
- **Digital Imaging & Cell Counting**
- **... and many more**

Save Time – Save Resources

Essential Tools for
Scientists in Academia and Industry

Cover Image created with DALL·E

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

Dive Deep with Spatial Omics

Your complete *in-situ* platform for single-cell spatial genomics

Introducing the Vizgen MERSCOPE™ Platform

To truly understand cell biology and gene expression, researchers need tools that preserve the natural complexity of tissues. They need to capture the heterogeneity of cells to know how tissues are organized and how those cells interact. This is what **in-situ** single-cell spatial genomics achieves.

Operating at the intersection of genomics and traditional biomarker imaging technologies, highly multiplexed in situ detection captures the nuances of gene expression by profiling single cells – both common and rare – in their native environment. It's a new dimension of biology that can provide rich insight into how an organism functions.

Why MERSCOPE?
Position yourself at the forefront of scientific discovery with the MERSCOPE™ Platform, the industry's first high-plex, *in-situ* single-cell spatial genomics solution. MERSCOPE uses MERFISH technology to directly map and quantify the spatial distribution of hundreds to tens of thousands of RNA species in individual cells, **without the need for downstream sequencing**.

MERFISH technology expands on the capabilities of single molecule FISH (smFISH) by using combinatorial labeling, sequential imaging, and error-robust barcoding to detect RNA with sub-micron accuracy. This gives researchers a window into the intracellular organization of the transcriptome within every cell.

**Profile Large Tissue with Subcellular Resolution**
With the MERSCOPE platform, Vizgen combines MERFISH technology with high resolution imaging, fluidics, image processing, and automation to deliver a complete end-to-end spatial genomics solution. Your lab can quickly begin generating data with a platform that provides all the components required to obtain and analyze high quality spatial genomic measurements, powered by MERFISH technology.

MERFISH • **M**ultiplexed **E**rror **R**obust **F**luorescence *In-Situ* **H**ybridization
Profiling 483 genes with subcellular resolution across a full mouse coronal slice
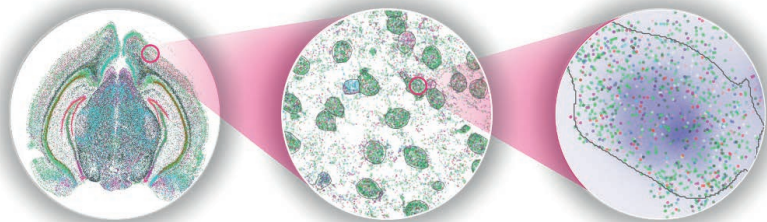
WHOLE SECTION	WIDE FIELD OF VIEW	SUB-CELLULAR
9 x 7 mm	200 x 200 micron	12 x 12 micron
Organization of tissue	**Cell interaction/function**	**L2/3 IT Glutamatergic neuron**

- **High Cell Throughput**
  - Several hundred thousands of cells
- **Flexibility**
  - +20 tissue types, including mouse and human
  - Fresh, fixed-frozen, FFPE
- **Massive Multiplexing**
  - Up to 1'000 genes, 1cm^2 of tissue
- **Simultaneous Protein Co-Detection**
- **100nm Resolution**
  - Single-cell and sub-cellular imaging
- **Unparalleled Sensitivity**
  - Identifying lowly expressed genes

Latest Updates

Vizgen's 1'000 Gene Panel Breakthrough
Amplify your spatial transcriptomics with Vizgen's 1'000 Gene Panel for MERSCOPE®. Double your gene targets without compromising data quality, delving deeper into complex biological systems.

Cutting-edge Data Release: MERSCOPE Advancements
Unlock early access to merFISH data on the innovative MERSCOPE® Platform. Dive into our expanding database, featuring Protein Co-Detection and FFPE Human Immuno-Oncology insights.

Advanced MERFISH Chemistry
Stay at the forefront with enhanced MERFISH chemistry. Extend sensitivity to degraded RNA samples, including FFPE, for superior translational research. Anticipate data releases showcasing this advancement in the coming months.

Nucleic Acid Purification: Pure and Simple®

Extract RNA and DNA from FFPE with Confidence

Introducing 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.
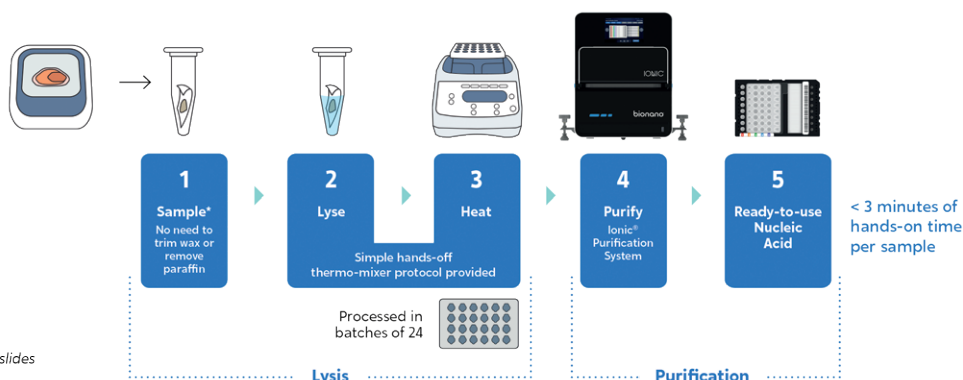
● **Simplify Lysis**
Deparaffinize, lyse, and de-crosslink in a single reaction without using harsh chemicals

● **Eliminate Bias**
Extract targeted 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

1 Sample*	2 Remove Paraffin	3 Lyse	4 Heat	5 Binding	6 Wash Buffer 1	7 Wash Buffer 2	8 Spin Dry	9 Elute	10 Ready-to-use DNA

Bionano Ionic® Isotachophoresis Workflow

1 Sample* No need to trim wax or remove paraffin	2 Lyse	3 Heat	4 Purify Ionic® Purification System	5 Ready-to-use Nucleic Acid

Simple hands-off thermo-mixer protocol provided

Processed in batches of 24

< 3 minutes of hands-on time per sample

*Compatible with scrolls or slides

Lysis   Purification

Untangle the Complexity of Cancer with True Multi-Omics

Single-cell DNA sequencing and protein analysis

Introducing 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.

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.

**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).
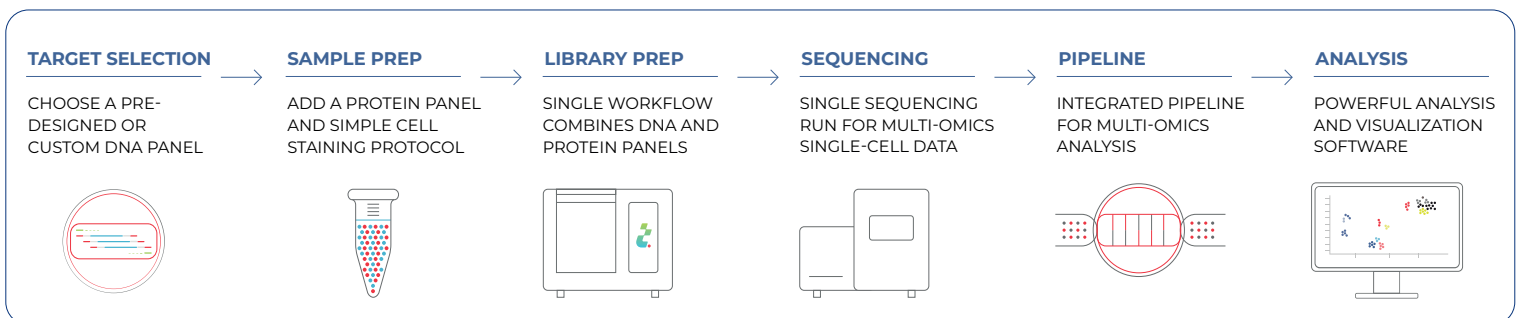

Obtain multiple analytes from a single cell:

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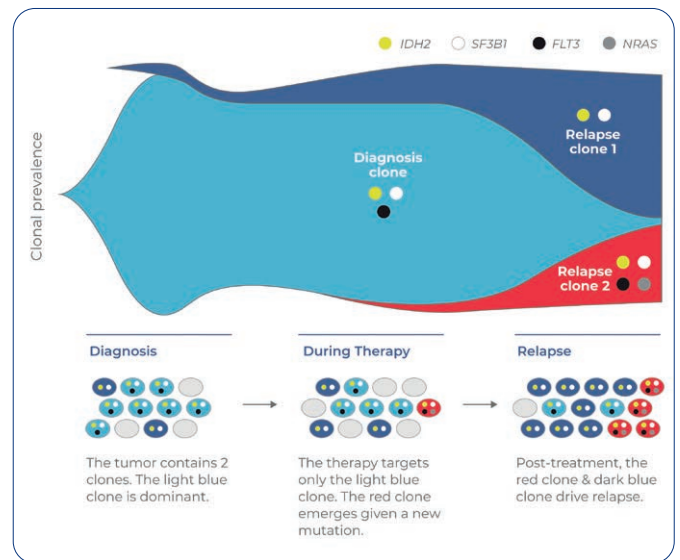
- **NEW:** do more single cell with less – 20,000 cells input possible
- Single-cell DNA & protein analysis from up to 10,000 single cells
- High sensitivity for rare clones – down to 0.1%
- Intuitive software for panel design, data analysis and visualization
- Compatible with TotalSeq™-D antibody content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

TARGET SELECTION	SAMPLE PREP	LIBRARY PREP	SEQUENCING	PIPELINE	ANALYSIS
CHOOSE A PRE-DESIGNED OR CUSTOM DNA PANEL	ADD A PROTEIN PANEL AND SIMPLE CELL STAINING PROTOCOL	SINGLE WORKFLOW COMBINES DNA AND PROTEIN PANELS	SINGLE SEQUENCING RUN FOR MULTI-OMICS SINGLE-CELL DATA	INTEGRATED PIPELINE FOR MULTI-OMICS 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.

Need a Training Refresher? Dive Deeper into Agilent Seahorse Excellence!

At Bucher Biotec, we take pride in guiding existing and new users through optimal Seahorse XF utilization. Book our training refresher sessions, where we share best practices and ensure you harness the full potential of the Agilent Seahorse.

Let us make your Seahorse XF experience seamless and productive. Explore, learn, and elevate your research with confidence!

Our Training Provides:
Comprehensive Sessions: Dive into focused training sessions for a solid understanding of Seahorse, laying the groundwork for successful experiments.
Best Practices Insights: Gain key insights into best practices from our specialist, maximizing Seahorse performance for your unique research needs.
Hands-On Learning: Build confidence in instrument handling and experiment execution through practical, hands-on Seahorse equipment training.
Efficient Troubleshooting: Learn to troubleshoot effectively, ensuring smooth navigation through challenges and maintaining experiment continuity.

Why Choose Our Training:
Our training refresher provides not just operational guidance but a comprehensive approach to empower you for successful Seahorse experiments.

Book Your Training Refresher Now:
Take the next step in unlocking the full potential of your Seahorse instrument. Secure your spot for the training refresher and let us guide you through Seahorse technology intricacies, making your research journey enriching and efficient.

Contact us at
seahorse@bucher.ch

Michael Colombo, MSc.
Application Scientist

Healthy Cells. Better Science.

Cell Sorting made for every lab

Introducing the NanoCellect WOLF® G2 Cell Sorter

The WOLF G2 instrument has significantly expanded the capabilities of gentle benchtop microfluidic cell sorting with two lasers and up to nine colors, while maintaining simple workflows for either bulk sorting or single-cell dispensing. Single-cell sorting can be completed in 96- or 384-well plates when using the WOLF G2 in conjunction with the N1 Single-Cell Dispenser. This flexibility in performance makes it ideal for use in many different research fields and application areas like single-cell genomics, cell line development, gene editing, antibody discovery, immunology, infectious disease, basic research, and more.

Microfluidic Cartridges

Unique to NanoCellect are disposable cartridges that allow for bulk sorting or single-cell sorting. The sorting cartridges use a piezo-acoustic actuator that gently directs cells into collection channels; an embedded cell sorting verification system gives instant feedback of sorting accuracy. And because the cartridges are disposable, there is no chance of sample-to-sample contamination or biohazardous aerosols.
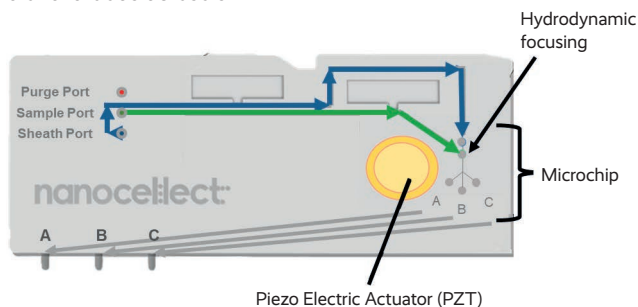

Figure: Sample solution (green line) and sheath fluid (blue line) travel through their own respective channels within the cartridge ultimately mixing at the microchip.

New! CS1 Chiller-Stirrer Accessory

Applications with temperature sensitive samples, like Stem Cells or Neuronal Cells can be challenging to sort. Such applications would benefit from modules such as the CS1 Chiller-Stirrer by keeping both sheath fluid and sample at the desired temperature during the sorting process.

Additional to the cooling mechanism, the CS1 Chiller-Stirrer can provide stir function for samples that settle quickly or aggregate. This will maintain single-cell suspension which will improve sort recovery and purity.

Cell sorting has never been so easy!
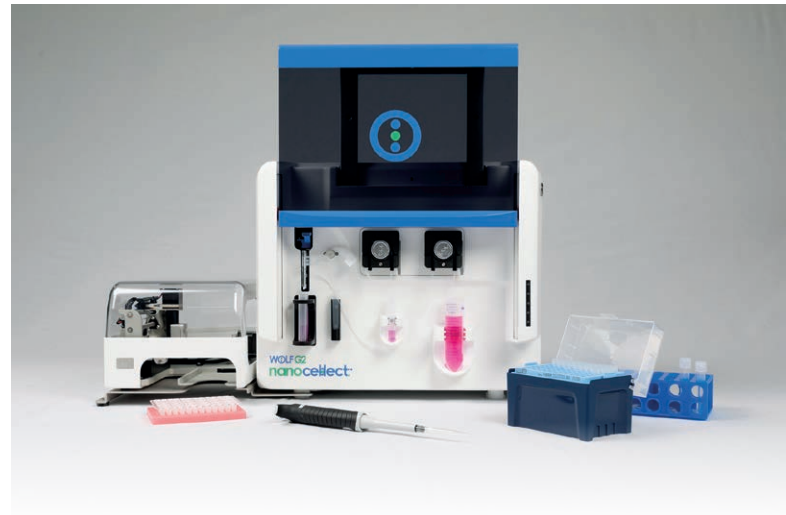
Healthy Cells
At < 2 psi, the WOLF G2 is gentler than any conventional cell sorters, enabling healthier cells post-sort, especially for engineered lines, primary cells, and stem cells.

High sensitivity and resolution
All laser configurations afford < 250 MESF sensitivity, along with forward and back scatter, providing as low as 1 µm resolution.

Compact and at your bench
At 2 cubic feet, NanoCellect's benchmark for access and performance allows every lab for the flexibility to do analysis and sorting into tubes or 96- and 384-well plates.

Simple and intuitive
Intuitive software, fixed optics, no fluidics cart and less than one minute clean-up time.

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.

Expanding the WOLF's capabilities
With up to two lasers and up to nine fluorescent channels, the WOLF G2 aligns with a broad set of research applications and experiments. Three different laser configurations allow options specific to your needs.

Healthy Cells. Broad Capabilities. Better Science.

Flow Cytometer Performance you can trust with the Flexibility you need

Agilent NovoCyte Penteon™, Quanteon™ and Advanteon™

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 multi-color 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.

The NovoSampler Q™, which can be integrated into different laboratory automation platforms, efficiently processes both FACS tubes (using a 40-tube rack), Eppendorf tubes, and 24-, 48-, 96-, and 384-well plates. **It is the only sampler that adapts itself to your desired vessel type.** 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
Easy startup & shut down: Quick startup with automated fluidic rinsing takes only minutes to prepare the instrument for your daily use. The configurable pre-scheduled shutdown thoroughly cleans at a specified time each day to eliminate the hassle of end-of-day manual cleaning.

Embedded quality control: Quickly run daily QC, automatically generate comprehensive QC reports, and conveniently track performance over time with Levey-Jennings plots. The automatic QC test ensures proper performance monitoring on not only a day-to-day basis, but also over long-term use.

Flow Cytometers with Exceptional Reliability:
Agilents NovoCyte Penteon, Quanteon and Advanteon

Continuously monitors fluidic levels for you: A fluidic station capable of sensing low fluid or high waste levels eliminates the need of manual inspection. Fluidics consumption is estimated before plate runs to ensure uninterrupted sample acquisition.

Hassle-free fluidics: Electronically monitored valves and sensors allow for automatic clog detection and recovery. A feedback control system continuously manages sheath flow rate to maintain great stability.

**Consistent results, fast or slow:** Equipped with high quality lasers, optical filters and detectors to ensure consistent signal detection, and combined with fluidic feedback control mechanisms to maintain steady flow rates, the NovoCyte systems are the flow cytometers you can always rely on.

NovoCyte Systems have demonstrated superior stability across a wide range of sample flow rates, a critical requirement for a high end flow cytometer to provide consistent results under variable operating conditions. The NovoCyte family gives you peace of mind so you can focus more on your experiments.
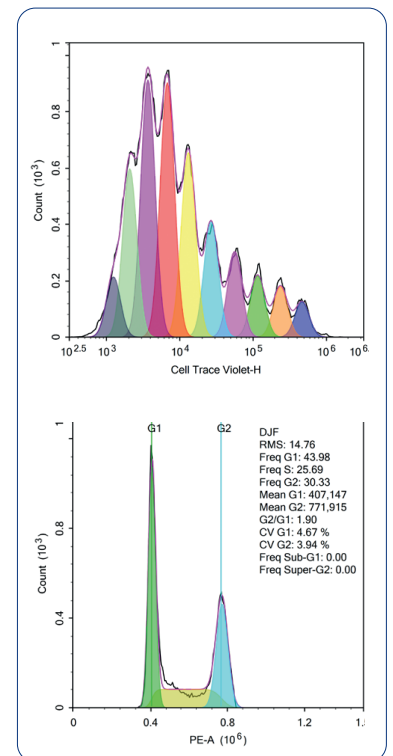
Advanced Data Analysis made easy by NovoExpress®

● Cell Proliferation Modeling
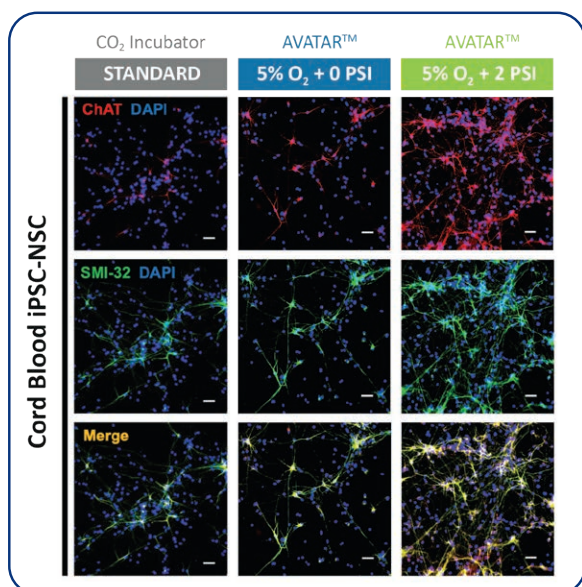● New Cell Cycle Analysis Module
● Heat-map Data Display
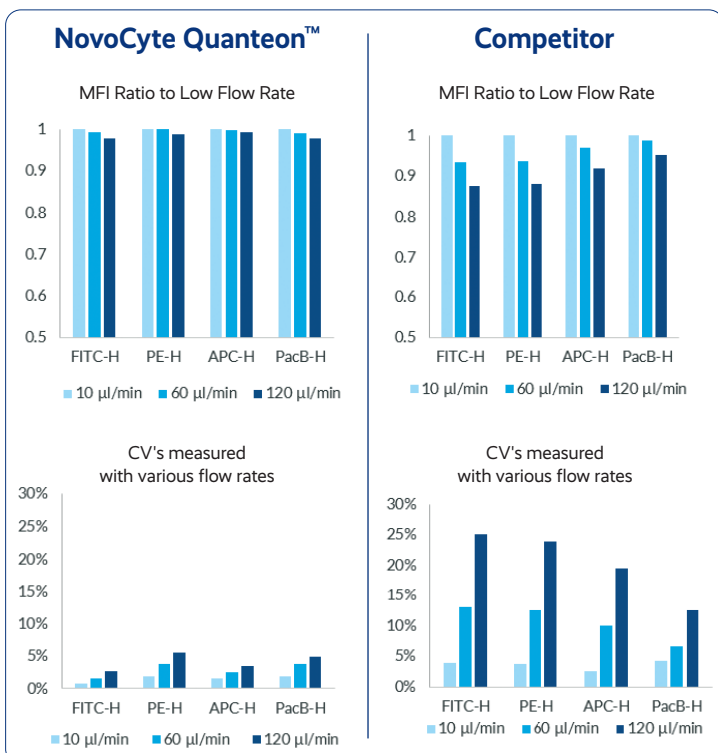
Control Your Stem Cell Destiny:
Improved Differentiation, Maturation & Proliferation of Stem Cells
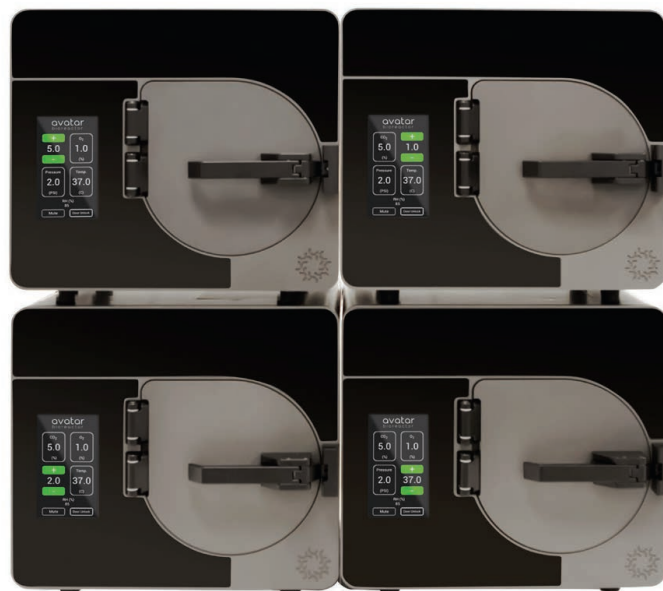
Xcell Biosciences' Avatar™ System

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.

cently 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.

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, re-

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*

Automate Functional Proteomics

The Gold Standard for Single Cell Functional Proteomics

Introducing the Brucker IsoLight and IsoSpark Systems

Brucker's functional phenotyping reveals the rare subsets of cells that simultaneously secrete multiple cytokines. These polyfunctional cells are responsible for orchestrating immune responses and are predictive of patient response and disease progression in vivo. Unmasking these highly polyfunctional cells is imperative in accelerating the development of advanced, curative medicines. Brucker developed a new library of cells characterized by functional proteomics to complement the genomic-based Human Cell Atlas. The Functional Cell Library (FCL) adds a unique layer of proteomic data on the wide range of superpowered immune and tumor cell types uniquely identified by Bruckers single-cell functional proteomics.

Functional Immune Landscaping

Accelerate the ability to clarify lead candidate choice and durable biomarkers using the proteomic secretome from each single cell to accelerate the path to higher efficacy with targeted immune therapies.

Intracellular Signaling Omics

Identify adaptive phosphoproteomic signaling networks from rare subsets of single cells, targeting the entire set of signaling pathways to eliminate resistance and metastases.

High-Plex Walk-Away Immunoassays

For the first time, unleash walk-away multiplexed proteomics in very low sample volumes, with an analytics suite that saves resources and time while delivering key omic insights.
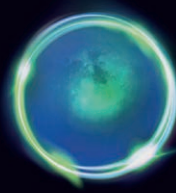
Brucker's mission is to leverage the superhuman cells in all of us to change the course of human health. The Functional Cell Library provides the bridge to leverage unique functional phenotyping data to patient responses in vivo for translational and clinical applications. IsoLight and IsoSpark systems, which uniquely reveal these superhuman cells through single-cell and proteomic innovations, are enabling customers to advance the future of medicines against complex diseases.

PSI™ Enables Cell Engineering and Therapy from Discovery to Predicting Outcome

Learn how Bruker's polyfunctionality strength index PSI helps you discover and reveal the key potent cell subsets that correlate to *in vivo* outcome in cell therapy throughout discovery and development.
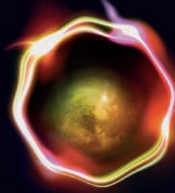
In this Application Note you'll find:

- Use Polyfunctionality and PSI to reveal synergies and mechanism with novel Combination Therapies
- Use PSI to clearly reveal differences in bioprocessing methods for product manufacturing process optimization
- Predict patient response to a CAR-T therapy using pre-infusion product PSI, demonstrating its potential as a biomarker for clinical outcome
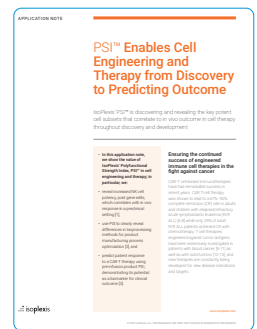
Supercharged Immunology
SUPERHERO CELLS

Cells responsible for orchestrating an immune response *in vivo* and whose function is predictive of patient response and survival.

Hyper Inflammation
SUPERVILLAIN CELLS

Cells responsible for promoting disease *in vivo* and whose function is indicative of inflammation and toxicity.

Aberrant Malignancies
SUPERVILLAIN CELLS

Tumor cells whose functional proteomic phenotyping provide insight into therapeutic resistance and disease progression.

*"Polyfunctional Cells are the Subsets with **Superpowers**."*

Rong Fan, Ph.D.
Associate Professor of Biomedical Engineering at Yale and co-founder of IsoPlexis

Sample to Genomics Solution

Single Cells or Nuclei from Solid Tissues in Minutes

Introducing S2 Genomics' new Singulator™ 200

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 nuclei or highly viable cells from small samples in high yield, for a wide range of single-cell analyses.

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 patent-pending 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.

With Singulator, researchers can now easily obtain suspensions of nuclei or high-viability single cells for a wide range of single-cell analyses.

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

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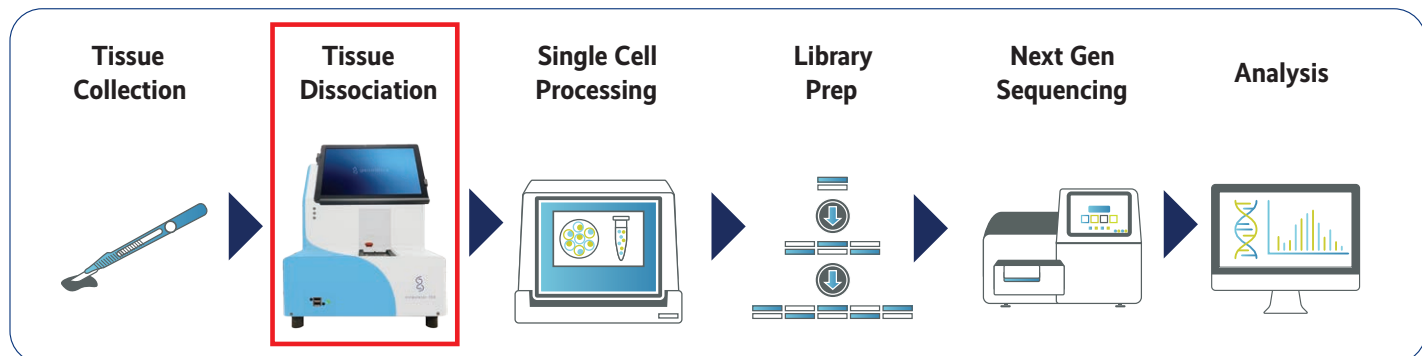Nuclei in ~7 minutes. 8 samples complete in ~30 minutes.

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

- Proven Technology
- Flexible Automation
- Higher Throughput

NOW SUPPORTING...

- FFPE Tissue Samples; Isolate nuclei from FFPE slices, enables snRNA-Seq for FFPE samples
- Ultra-Low Volume Nuclei Isolations using just 500 µl of NIR, save on RNase inhibitor, great for sub-10 mg samples

Tissue Collection	Tissue Dissociation	Single Cell Processing	Library Prep	Next Gen Sequencing	Analysis

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
- Fully automated image acquisition and analysis
- 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:

- **WIRM 2024**
  World Immune Regulation Meeting
  Davos, 13. - 16. March 2024

- **BIOS+ Exhibition**
  IOR Bellinzona, 27. / 28. March 2024

- **iPSZürich Symposium**
  Univ. Zürich, 5. April 2024

- BBT Seminar on **Save Time - Save Resources**
  Essential Tools for Scientists in Academia and Industry
  Bern, 12. June 2024

- **Latsis Symposium on**
  Genome and Transcriptome Engineering
  ETH Zürich, 13. / 14. June 2024

- **ILMAC Lausanne 2024**
  Lausanne, 18. / 19. September 2024

SAVE THE DATE

- **Bucher Biotec AG Seminar on**
  Save Time - Save Resources
  Essential Tools for Scientists in Academia and Industry
  Bern, 12. June 2024

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.

The **LUNA-II™ Automated Cell Counter** with unmatched speed, accuracy, and consistency of measurement, is a stand-alone instrument integrating precision microscopy optics, onboard computer, image analysis software, autofocus system, and built-in printer.

The LUNA-II automated cell counter accurately detects total/live/dead cells at concentrations ranging from 5×10^4 to 1×10^7 cells/mL and cell sizes between 3 and 60μm, using brightfield imaging.

LUNA-FL™ Dual Fluorescence Cell Counting
A quantum leap for automated cell counting and cell viability analysis. The LUNA-FL automated cell counter gives you sensitive and accurate live/dead cell counting results without limitation of cell types.

The LUNA-FL inherited the proven performance of the LUNA Automated Cell Counter with the brightfield microscopy 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. Resulating in the most accurate cell counting experience ever!

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

Yeast Cell Counter LUNA-II YF™
Yeast counting has never been this fast and easy. The LUNA-II YF is a fully automated, image-based yeast cell counter. Dual fluorescence optics, an autofocusing liquid lens, and an advanced counting algorithm produce yeast cell count and viability data in just 15 seconds.

No more subjectivity and wasted time on manual cell counting. LUNA-II YF counts yeast cells stained with fluorescent nucleic acid dyes with the precision and consistency of a flow cytometer, but in a much shorter time.
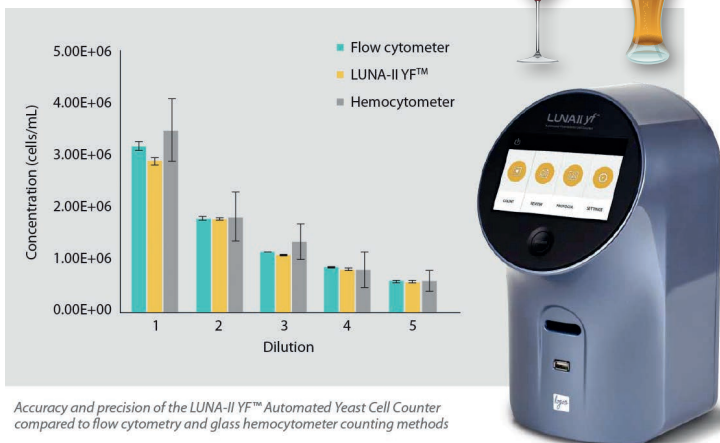
Accuracy and precision of the LUNA-II YF™ Automated Yeast Cell Counter compared to flow cytometry and glass hemocytometer counting methods

Rapid and Accurate Single Bacteria Cell Quantification
The QUANTOM Tx™ Microbial Cell Counter is an image-based, automated cell counter that can count individual bacterial cells in mere minutes. The sophisticated QUANTOM cell counting algorithm is the first of its kind, capable of detecting individual bacterial cells regardless of their diverse morphologies and arrangements. Multiple images of fluorescence-stained cells are captured and analyzed automatically for rapid and accurate bacterial cell counts.

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

Every Cell Matters
A Busy Bio-Lab needs an efficient Cell Counter

Logos Biosystems' LUNA-FX7™ Automated Cell Counter

Introducing the LUNA-FX7 - the automated cell counter that builds on the success of its predecessors. 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 sample simultaneously. To help monitor and optimize bioprocess-es, 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
- All-new optics
- Increased counting volume for the lowest CV per count
- Multichannel pipette-compatible 8-channel slides
- Fast and precise autofocus
- 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

Compatible slides	LUNA™ 1-Channel Slides	LUNA™ 8-Channel Slides	LUNA™ 3-Channel Slides	LUNA™ Cell Counting Slides / PhotonSlides™	LUNA™ Reusable Slides
Sample throughput	1 sample	Up to 8 samples	Up to 3 samples	Up to 2 samples	1 sample
Sample loading volume	50 µL	10 µL / chamber	10 µL / chamber	10 µL / chamber	10 µL
Maximum analysis volume	5 µL	0.5 µL / chamber	1.3 µL / chamber	1.3 µL / chamber	1.3 µL

A Microplate for every Workflow
## Microplates are the Currency of the Lab!

Agilent's standard and custom Microplate Solutions

Did you know that Agilent is a worldwide leader in the design and manufacturing of high-quality microplates for biological research and drug discovery?

Agilent provides standard and custom solutions for academic and government institutions and pharmaceutical and biotech organizations, as well as large and small OEM manufacturers of assay kits and lab instruments suppliers. All of Agilent's products are designed and built to obtain the highest quality results.

- Storage / Assay Microplates
- Filter Plates
- Reagent Reservoirs
- Customized Microplates – Tell us what you need!

Simply check the online Product Selection Tool via www.agilentmicroplates.com or contact us to receive a copy of the Agilent Microplate Solutions brochure.
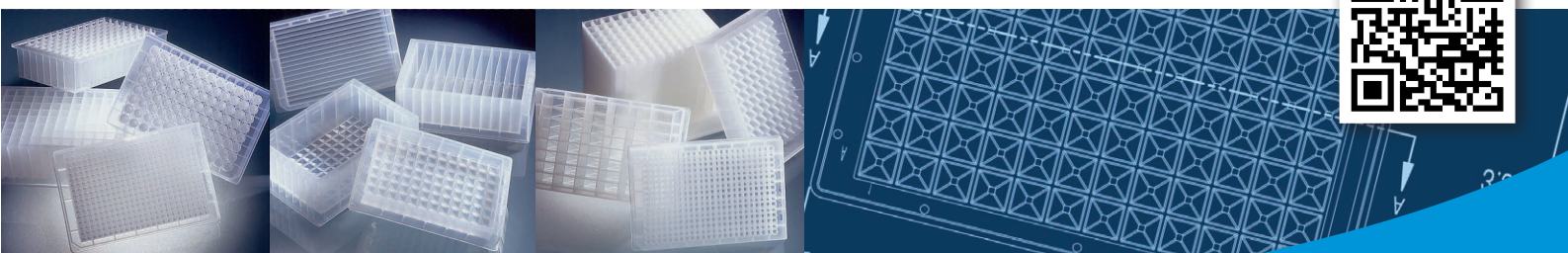
Cell Separation Made Simple!

Isolate your specific cells in a fast & gentle way

Introducing the MARS™ Platform by Applied Cells

The new MARS™ Platform: The only instrument to offer acoustic technology for sample preparation AND magnetic cell isolation technology for cell separation in one easy-to-use system.

With the MARS platform, Applied Cells developed a novel technology to standardize and automate cell preparation from complex samples such as whole blood, bone marrow or cancer tissue using an acoustic active-microfluidic chip to wash and remove red blood cells, debris, free dyes or other small particles. The proprietary method presents a unique advantage in enrichment of target cells, including rare tumor cells and immune cells with high recovery.

Cell Therapy
Modular systems automate cell processing and cell isolation in the development and manufacturing of cell-based drugs. MARS provides both high recovery and purity.

Tumor Biology
TIL, T Cells, NK cells, Neutrophils or Stem cells.

Genomics
Label-free, easy and fast enrichment of live single cells from samples including peripheral blood, bone marrow, solid tissue and many others.

The MARS experience offers:

- Consistent and reproducible results
- High recovery AND high purity
- A matrix-free continuous flow system with virtually no loss of cells
- Rare cell isolation (1 in 5 million bone marrow cells)
- High sensitivity MRD (minimal residual disease) isolation
- Stem cell isolation
- T cell isolation
- TIL and tumor cell isolation

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.
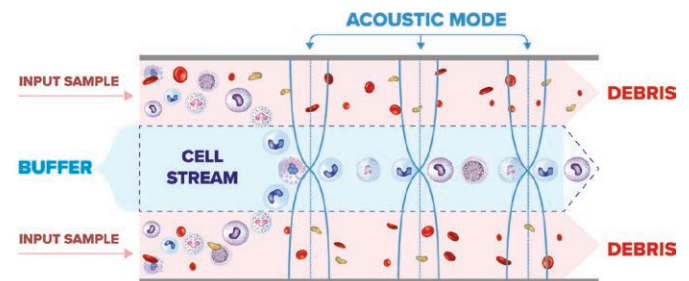
MARS CS

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.
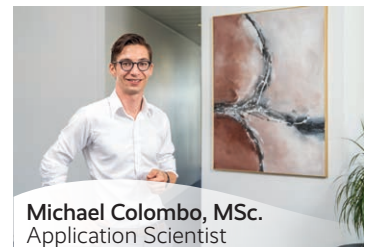
Bucher Biotec AG
Viaduktstrasse 42
CH-4051 Basel, Switzerland

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.
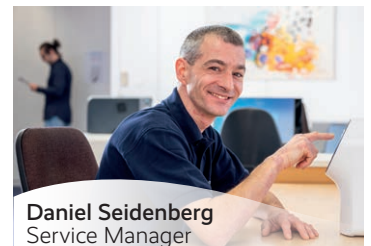Director Sales & Support

Matthias Vogg, Ph.D.
Product Line Manager

Michael Colombo, MSc.
Application Scientist
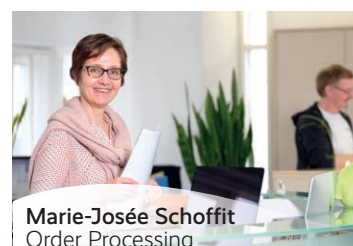
Vadim Saratov, Ph.D.
Application Scientist

Daniel Seidenberg
Service Manager

Dominik Pinck
Service Engineer

Daniel Tanner
Manager Order Processing

Marie-Josée Schoffit
Order Processing

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

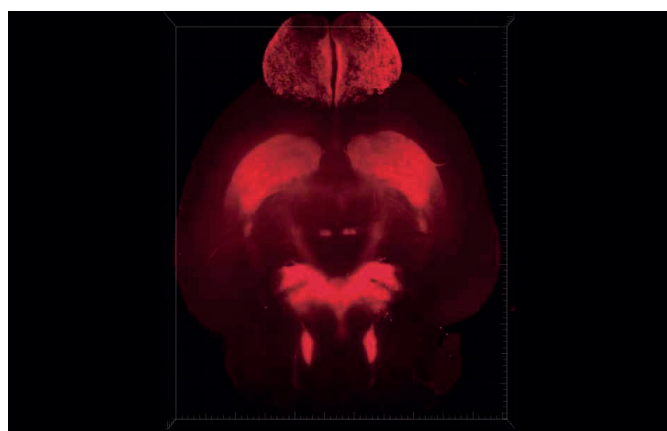- **Compatible with multiple tissue types and sizes**
  - Electrophoretic and passive clearing
  - Holders of various sizes available

- **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 Deep-Label, 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.

Accelerate your research with X-CLARITY!

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

X-CLARITY Tissue Clearing Samples

Before   **After**