

Superpowered Functional Proteomics for Every Lab

Powerful Biology Accelerating the Future of Medicine



Automated Highly Multiplexed Cellular Proteomics

Powerful Functional Proteomics for Every Lab

Introducing the IsoPlexis IsoLight and IsoSpark Systems



The future of advanced medicines relies upon deeper access to in vivo biology to create durable, curative impacts on diseases. Our systems, which drive convergence of dynamic proteomics and single cell biology for the first time, are creating this deeper connection to accelerate curative medicines.

The IsoLight and IsoSpark Systems.

The IsoLight and IsoSpark are fully automated, end-to-end systems for highly multiplexed biomarkers,

uniquely enabling multiplexed and fully automated proteomics to be decentralized, providing immediate insights. The IsoLight is a higher throughput instrument with a footprint of 72 cm, and the IsoSpark is a compact system which allows for advanced cellular analysis in a benchtop instrument of just 46 cm in footprint.

The all-in-one systems run multiple highly-multiplexed applications:

- Single Cell Secretome
- Single Cell Pathway Omics
- Low Volume Bulk Proteomics

The IsoLight and the IsoSpark systems provide new and accessible layers of biological data at the single-cell level and the ability to interrogate the secreted and intracellular proteome, highly multiplexed from single cells and population, for the first time. This allows researchers to connect more deeply to in vivo biology and predict complex responses to therapies and disease in cancer



reddot winner 2021
innovative product

immunotherapy, cell and gene therapy, COVID-19, autoimmune disease, and many other areas.

IsoSpeak Software.

IsoSpeak is the first automated informatics suite for advanced, functional cellular mapping and visualizations to reveal correlative insights into functional immune biology. The software's push-button interface and advanced automation allows users to visualize, target, and utilize data from direct functional proteomic profiling of both single cell and bulk populations for downstream analysis. IsoSpeak generates advanced visualizations with same-day turnaround to stratify samples, reveal functional differences, pinpoint biological drivers, and allow better collaboration.



“As a cancer research center with a key focus on CAR-T and other cell therapies, we feel that IsoPlexis will enable us to better characterize response and potentially predict whether cancer patients will respond to CAR-T therapy before treatment.”

Christine Brown, City of Hope

Break-through Cell Separation From Blood, Tissue or Bone Marrow

Isolate your specific cells without the need for centrifugation or Ficoll

Introducing the MARS™ by Applied Cells

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 RBC 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 and high purity at the same time.

White Blood Cell Isolation

In contrast to conventional Ficoll gradients and centrifugation-based cell washing, the MARS requires no human intervention once the blood is stained and loaded. Cell viability studies demonstrate MARS cell isolation results in less activation and better viability flanked by well-maintained percentages of WBC subpopulations.

The MARS SamplePrep (SP) and CellSeparation (CS) systems automate blood sample processing with minimum human intervention, which could significantly reduce time and human error. The minimized hands-on time allows WBC isolation to run in the background of your day and no longer requires your full attention.

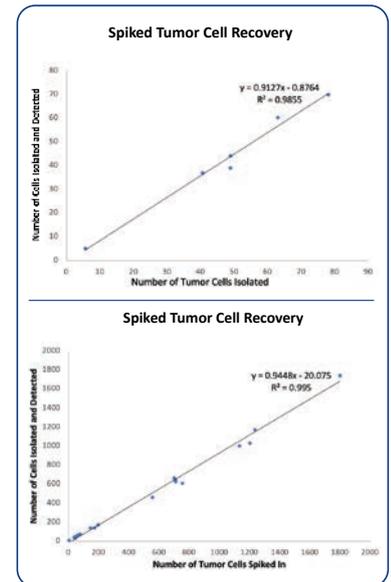
Is WBC preparation not enough? Do you need a specific cell type?

From rare tumor cells to specific T-cell subpopulations, the MARS system can enrich target cells with high recovery, high purity, and high reproducibility. The unique multi-physics approach provides enabling research and cost-effective clinical solutions to a large field of applications, such as Genomics, Tumor Biology and Cell Therapy, with full automation for every lab. MARS CS system incorporates an in-flow magnetic module for immune-magnetic positive or negative separation of target cells with sensitivities of up to one cell in 5 million. This is why MARS is the platform of choice for CTCs, DTCs and MRDs. Furthermore, separated cells

were shown to have preserved activation and proliferation, necessary for downstream functional studies. MARS Bar allows for higher throughput and the separation of up to 150-200 million target cells on each of the three magnetic modules with a processing rate of 1 - 20 million cells/min.

Improve performance & consistency in your tumor biology workflows

MARS presents an automated cell separation and sample preparation platform that enables high speed rare cell isolation with high purity and recovery, and without centrifugation.



The MARS experience offers:

- WBC isolation without Ficoll
- Rare cell isolation
- Centrifugation-free cell separation
- Fully automated workflow
- High recovery – High purity – High reproducibility

MARS Cell Separation Sample Prep and Cell Separation



In meeting all the desired capabilities of a cell separation tool



MARS
Is the missing piece

**One Cell.
Genotype +
Phenotype.**
Because the
complexity of cancer
needs both.

Discover true Single-Cell Multi-Omics

DNA Seq and Protein Analysis

Introducing the new Mission Bio Tapestri Platform



The Tapestri Platform was developed to enable the accelerated and accessible detection of genomic variability. It delivers targeted solutions for high-impact application

areas, including hematologic malignancies, solid tumor profiling, genome editing validation, or anything of interest using your custom-designed solution. This novel approach to single-cell DNA analysis paired with targeted gene panels offers a powerful strategy for detecting rare subclones, resolving mutational co-occurrence patterns, zygosity and reconstructing phylogenetic lineages. Tapestri provides to you the sensitivity, accuracy and capability of detecting low abundance clones, needed for single cell genomics to eventually enhance clinical decisions and impact personalized medicine.

Break Out of the Limitations of Bulk.

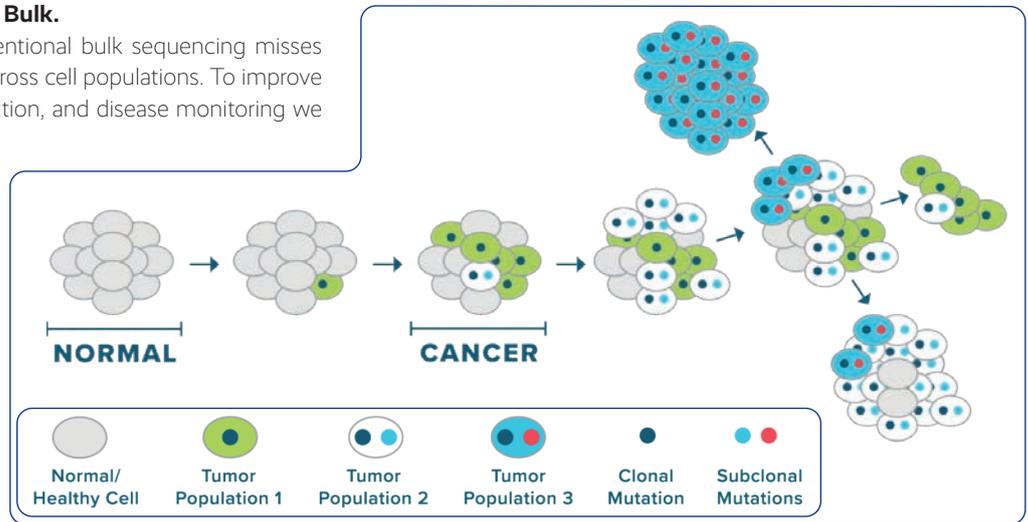
The average read-out from conventional bulk sequencing misses the underlying genetic diversity across cell populations. To improve patient stratification, therapy selection, and disease monitoring we need insights into mutation co-occurrence within every single cell. The Tapestri Platform revolutionizes the capability to directly assess the clonal architecture of a sample. 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. In addition, oligo-tagged protein

antibodies can now be added to your Tapestri experiments to uncover true multi-omic information from thousands of single cells. It's the ability to understand heterogeneity at the single-cell level that is poised to help move precision medicine forward.

- Single-cell DNA & protein analysis from up to 10,000 cells
- SNV, indel, CNV and LOH calls from DNA
- High sensitivity for rare clones – down to 0.1%
- Genotype and Phenotype from the same single cell
- Intuitive software solution for single-cell DNA and protein analysis
- Compatible with TotalSeq™-D antibody content from BioLegend

The Precision Genomics Platform™.

Tapestri is the first and only single-cell multi-omic platform capable of detecting SNVs, CNVs, and protein changes simultaneously from the same cell.



“No technology prior to Tapestri has been able to give us the resolution to decipher co-occurring mutations in the same clones. These insights are especially important in our study of resistance mechanisms and combinatorial therapies in key clinical trials.”

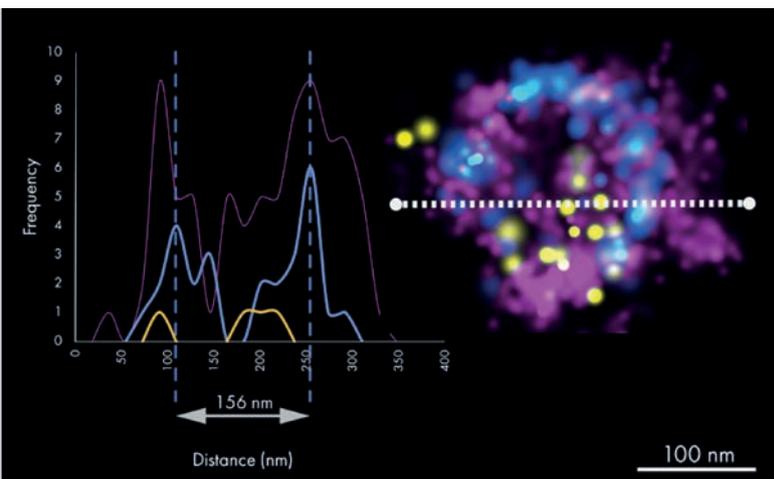
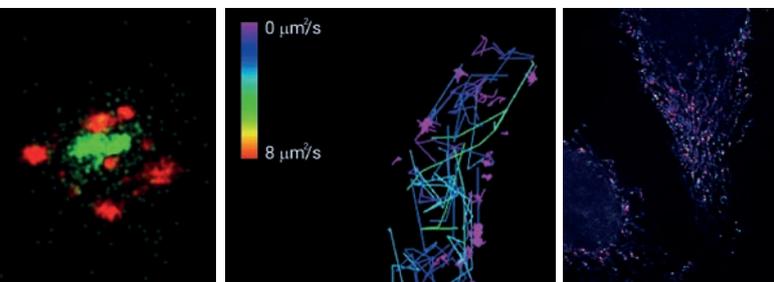
Catherine Smith, MD, UCFS, Helen Diller Family Comprehensive Cancer Center

astONshing

Single Molecule Imaging at your Lab Bench

Meet the Nanoimager

The Nanoimager of Oxford Nanoimaging (ONI) is the world's first, desktop-sized microscope capable of observing individual molecules within living cells. It offers various modes of operation including dSTORM, PALM, smFRET and supports illumination modes from epifluorescence to TIRF. With this range on offer, it's easier than ever to get the most out of fluorescence microscopy, both when imaging fixed samples stained with immunofluorescence protocols or during live-cell imaging.



Advanced Microscopy For All

Created by scientists for scientists, the Nanoimager delivers the highest precision for single molecule and advanced imaging.

This highly sophisticated research tool enables super-resolution applications dSTORM, PALM and single particle tracking with ultimate precision, even at 20 nm scale, by stabilizing both drift and vibrations. Integrated analytics tools deliver faster, accessible data even before your task completes.

Proven in the lab

The Nanoimager has earned its place in the great seats of academia and research. Hoffmann-La Roche, Univ. Zürich, the University of Cambridge, Harvard and Cancer Research UK are just a few of the users deploying the Nanoimager for diverse applications in microscopy.

● Single-Particle Tracking

- Microfluidics compatible
- Whole body heating
- Dedicated tracking analysis

● dSTORM & PALM

- Resolution up to 20 nm
- Real time rendering
- 3D imaging

● Single-Molecule FRET

- Interactions within 1-10 nm range
- Individual and group events
- Dedicated smFRET analysis

● Unique, compact design

- Compatible with BSL3 safety cabinets
- Minimal space requirements in BSL4 facilities

Interested in evaluating super-resolution microscopy?

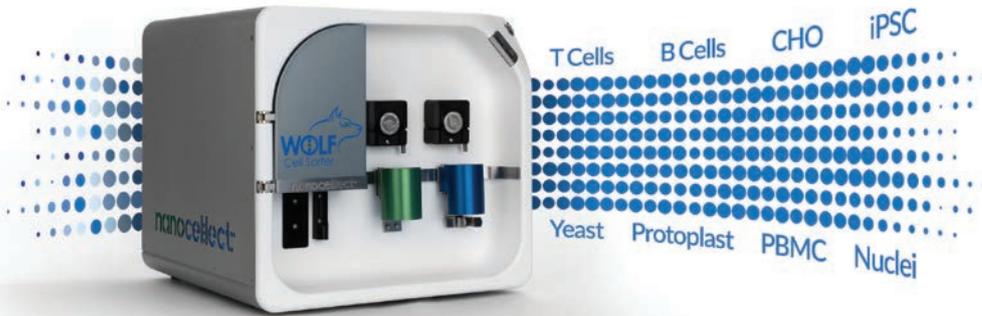
Nanoimager Applications

- Tracking Viral Particles & Extracellular vesicles
- Protein Complex Assembly
- Host Pathogen Interactions
- Single Molecule Tracking
- Quantitative Cellular Imaging
- Molecular Mechanisms and Interactions

Healthy Cells. Better Science.

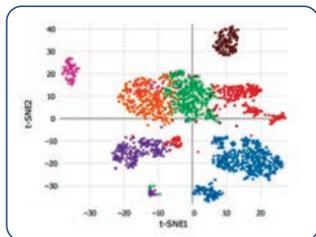
Increase Library Quality and Complexity with a gentle Cell Sorter

Introducing the new NanoCollect WOLF® G2 Cell Sorter



The quality of sequencing results is directly dependent on the quality of the sample that is prepared. When isolating a target population for the sequencing workflow, it is critical to maximize cell viability. Using the WOLF upstream of loading your sample allows not only the isolation of the target cell population, but also removal of dead cells, debris and doublets, while allowing the cells to remain

Unsorted PBMCs



WOLF Sorted PBMCs

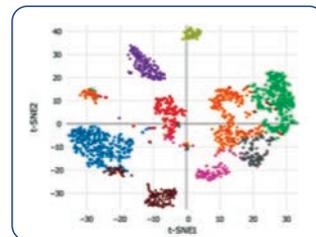


Figure: t-SNE projection of cell colored by automating clustering in unsorted and WOLF sorted PBMCs.

The WOLF Cell Sorter is a novel microfluidic-based cell sorter compatible with several sequencing platforms. At less than 2 psi, the WOLF is gentler than conventional cell sorters, enabling healthier cells and higher cellular DNA, as well as RNA integrity post-sort. Low shear stress during cell sorting avoids potential gene expression changes induced by traditional sorters. In addition, the WOLF excels at excluding dead cells and debris; therefore, maximizing the data generated per dollar spent on sequencing reagents and analysis time. Furthermore, the WOLF's microfluidic cartridges are completely disposable, everything the sample and sheath fluid touch is sterile and free from sample to sample contamination.

healthy due to the gentle sorting mechanism. Thereby, the library quality and complexity can be significantly increased. Because of these features, the WOLF Cell Sorter is a registered **10x Genomics Compatible Partners Program** product, and is equally compatible with the targeted DNA-sequencing platform **Tapestri** from Mission Bio.



Figure 2: WOLF to QIAseq scRNA-Sequencing Workflow

In combination with the N1 Single Cell Dispenser, the WOLF Cell Sorter can dispense 1 to 100 cells directly into a 96 or 384 PCR plate, seamlessly transitioning from cell sorter to library preparation. For this purpose, the WOLF is validated with QIAGEN's QIAseq RNA library preparation kits.

Coupled with sterile microfluidics, easy-to-use design and software and less than one minute clean-up time, the WOLF Cell Sorter is not only ideally suited for genomic sample prep, but also for gene editing, cell line development, and a variety of other applications requiring single cell isolation.

Cell sorting has never been so easy!

Introducing the new WOLF G2 with two lasers and up to nine fluorescent channels.



- Healthy Cells
- Simple and Intuitive
- High Sensitivity and Resolution
- Contaminant- and Biohazard-Free
- Compact and at your bench
- Expanding the WOLF's Capabilities

Tired of Adapting your Experiment to the Vessels Compatible with your Sampler?

Introducing the 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:
Agilent's NovoCyte Penteon, Quanteon and Advanteon

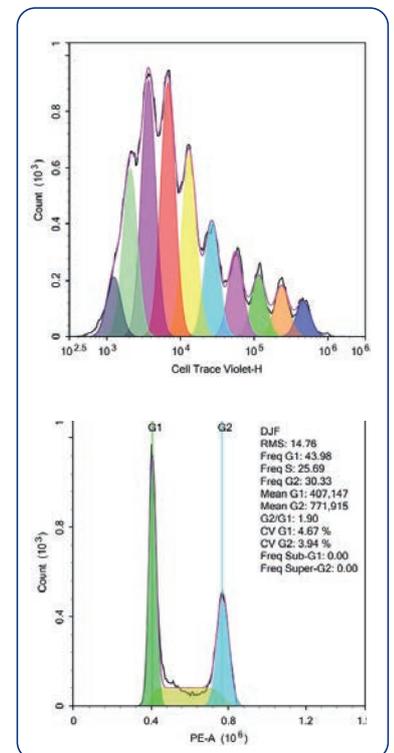
Continuously monitors fluidic levels for you: A fluidic station capable of sensing low fluid or high waste levels eliminates the need of manual inspection. Fluidics consumption is estimated before plate runs to ensure uninterrupted sample acquisition.

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

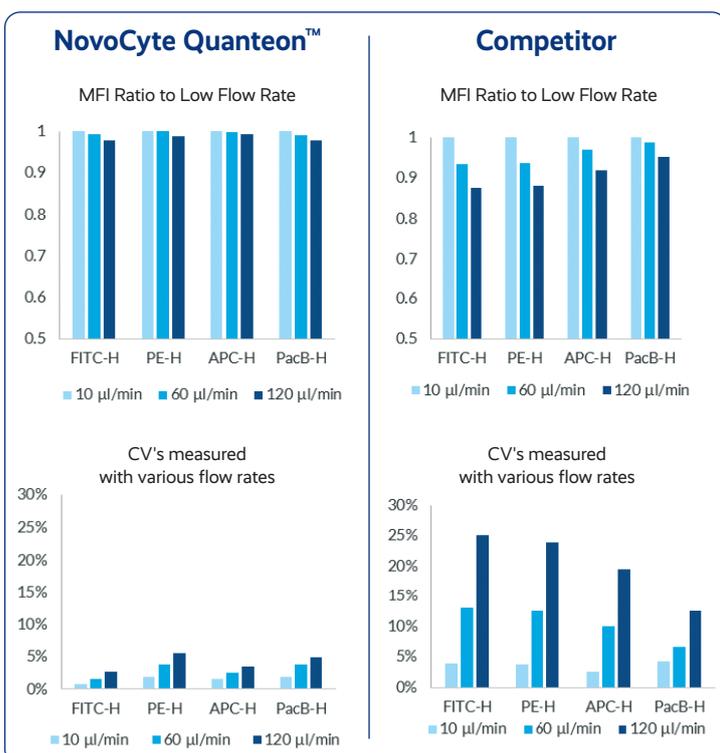


Image – Sort – Isolate

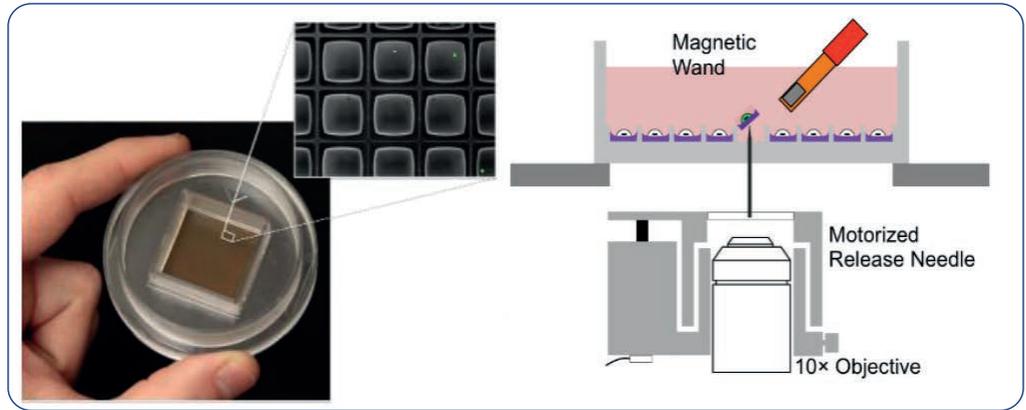
Single cell analysis with image-based sorting

Introducing the CellRaft by CELL Microsystems

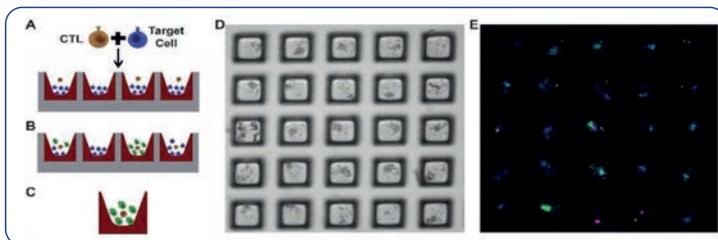
Sorting and isolating single cells is a key sample preparation step in many contemporary workflows including genome editing by CRISPR/Cas9, single cell genomics and differentiation of induced pluripotent stem cells (iPSCs) along with a broad range of other methods. While flow sorting is broadly applied, it is also restricted, typically only supporting suspension cells and not allowing morphological analysis of attached cells. Furthermore, flow cytometry sorting needs cells to be moved through microfluidics, frequently causing damage particularly to fragile cells such as stem cells.

Cell Microsystems has developed the CellRaft AIR System to allow imaging-based cell sorting and isolation of single living cells prior to downstream analyses. The AIR System is a bench-top instrument comprising an internal microscope with both brightfield and three-channel fluorescent imaging capabilities.

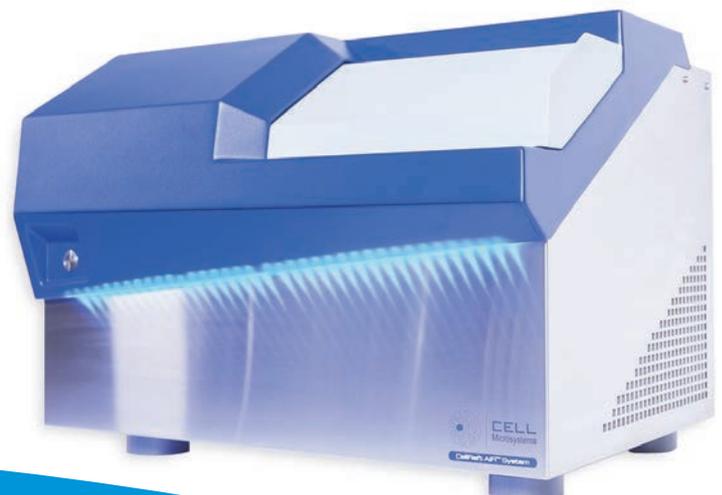
The core technology builds on a disposable microwell array on which cells are seeded and imaged. While the array can be handled as common culture with cells seeded in bulk and sharing the media, the bottom of this dish contains thousands of rafts to which cells will attach.



Researchers at the University of North Carolina, Chapel Hill, used the CellRaft technology to monitor thousands of T-cells for cytotoxicity against dendritic cells expressing the M1p antigen associated with influenza infection. This study was carried out as a proof-of-principle study for cytotoxic T-cell activity which will lead to experiments revealing anti-cancer T-cell receptor sequences. Dendritic cells displaying M1p antigen peptide (Hoechst staining and viability staining) and CD8+ T cells (CellTracker Far Red, single cell per well) were both isolated from HLA-A*02:01 serotype and seeded into the CellRaft microwell array. Microwells containing multiple DCs and only 1 CD8+ T lymphocyte, identified by automated image analysis, were tracked over the course of several hours. T-cells exhibiting high cytotoxicity toward target cells could be individually isolated. Using standard PCR methods and Sanger sequencing, the T-cell receptor sequences of each phenotypically cytotoxic cell could be determined.



Upon imaging, the software allows either user-specified selection of cells to be collected as individuals, or cytometric analysis to automatically collect cells based on desirable characteristics according to fluorescent markers. Cells are isolated by moving the raft on which they are attached to and releasing the raft in a collection plate, hence abolishing detachment procedures and allowing the direct support of adherent cells. Imaging cells directly in the array format allows for complex morphological analysis of individual cells but also of co-cultures as explained here.



Please contact us for a detailed application note on this exciting way of analyzing cytotoxicity in co-cultures.

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

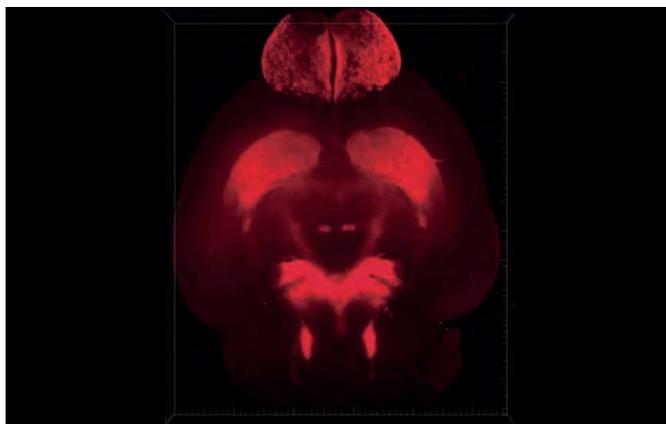
- Electrophoretic and passive clearing
- Holders of various sizes available

● 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



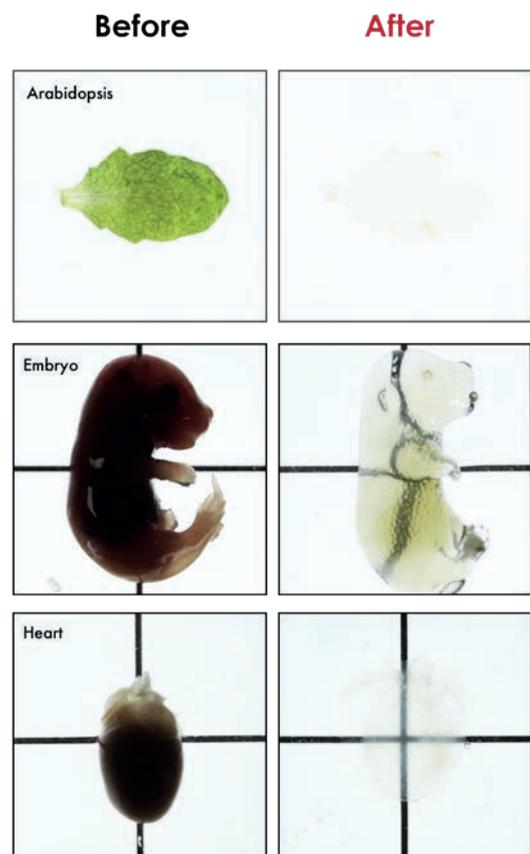
Whole adult mouse brain stained using DeepLabel with anti-TH (red).



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!

X-CLARITY Tissue Clearing Samples



Multicolor Fluorescence Imaging and Data Analysis in one Device

Logos Biosystems' CELENA® S Digital Imaging System

The CELENA S is a powerful digital imaging system that simplifies imaging and data analysis. Integrating advanced precision optics, a highly sensitive scientific grade CMOS camera, and a computer with user-friendly software, the CELENA S allows researchers to capture vivid, publication quality images with ease. Interchangeable objectives and filter cubes accommodate a wide range of imaging needs. Researchers can use the CELENA S for multiple applications, such as capturing and analyzing multicolor fluorescence

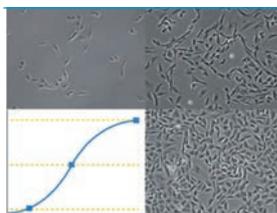
images, live cell imaging, and automated cell counting.

Are you curious to see the system or even better to see your cells or samples right on the system?



Multicolor Fluorescence and Brightfield Imaging

Long-lasting LEDs and hard-coated optical filters ensure robust fluorescence imaging. Adjustable LEDs allow precise control over the gain and intensity of transmitted light.

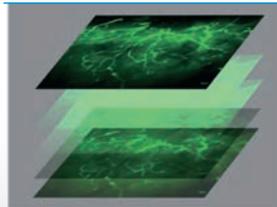


Live Cell Monitoring

Monitor live cells with the time lapse function or the growth monitor. Attach the onstage incubator to control the temperature, humidity, and CO₂ / O₂ levels.

Onboard Data Analysis

Analyze your images immediately upon capture. Save measurement data to a USB drive.



Z-stack Imaging

Capture multiple images along the Z-axis with the Z-stack function.

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 autofocus 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

Key Features:

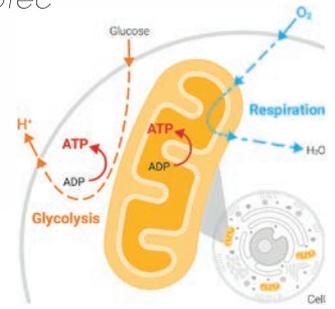
- Fully automated image acquisition and analysis
- Rapid multi-well plate imaging
- Powerful cell based assay software package
- Whole slide imaging
- Area scanning & image stitching
- Z-stacking & focus merging
- Time lapse live cell imaging

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



Discover the Drivers of Cell Fate, Function, and Fitness

Agilent Seahorse XF analysis platform



Are You Measuring What's Really Important to Your Cells?

To fully understand what drives cell phenotype and function, you must consider the influences of energy metabolism. Examining energy metabolism has led to new insights into biological function. In fact, some of the decade's most significant discoveries have hinged upon elucidating the role of energy metabolism in cellular processes. Agilent Seahorse XF analyzers provide the standard for measuring energy metabolism in live cells enabling robust measurements of mitochondrial activity, glycolysis, and ATP production rates in a microplate format.

- Automatic calculation of oxygen consumption and proton efflux rates
- Label-free detection of discrete bioenergetic changes in live cells – in real time
- Compatibility with both adherent and suspension cells, as well as isolated mitochondria
- Gentle mixing, measuring, and compound injections
- High sensitivity to analyze as few as 5000 cells per well
- Temperature controlled to maintain cell health and kinetics

Agilent Seahorse XF Assay kits allow you to gain deeper insight into your cell function. How are the cells generating energy? Has my treatment or the altered genetic background changed the metabolic phenotype? Agilent Seahorse XF Assay kits – built on validated biology – help you answer these questions and more.

- Cell Mito Stress Test Kit
- AReal-Time ATP Rate Assay Kit
- Glycolytic Rate Assay Kit
- Substrate Oxidation Kits
- Human T cell Activation Assay Kit

And did you know...?

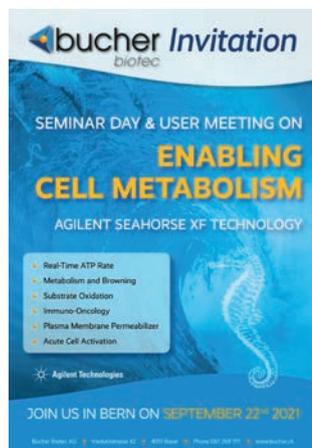
Having papers with functional data improves your chances of getting published in a top-tier journal? Observing intact cell behavior in real time provides much-needed context and confirmation of omics data. There are more than 7,000 publications that utilize Seahorse XF data. Visit www.agilent.com/chem/pub-database for a complete searchable list.

SAVE THE DATE

Invitation to our Seminar Day & User Meeting on

Seahorse XF Technology Provides a New Window on Cell Metabolism

Bern, September 22nd 2021



We would like to invite you to our upcoming seminar day. Further information will be distributed soon. We are looking forward to welcoming you in Olten!

Speakers:

- David Ferrick, Senior Director New Market Development, Agilent USA
- Tiia Snäkä, Depart. of Biochemistry, Univ. Lausanne
- Theodora Panagaki, Dep. of Medicine/Pharmacology, Univ. Fribourg
- Leonora Szabo, Univ. Psychiatrische Kliniken, Basel
- Roman Memedovski, VetSuisse Bern
- Svetoslav Kalaydjiev, Agilent Technologies, UK
- Audrey Lilly von Münchow, Bucher Biotec AG



Participation is free of charge! In order to register simply give us a call (061 269 1111) or send us an email (seminar@bucher.ch)

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.

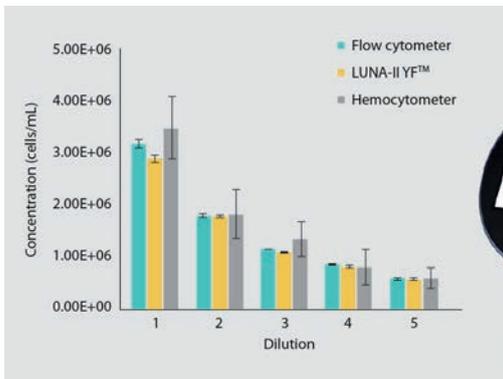


The LUNA-II automated cell counter accurately detects total/live/dead cells at concentrations ranging from 5×10^4 to 1×10^7 cells/mL and cell sizes between 3 and $60\mu\text{m}$, using brightfield imaging.

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



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 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 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' new 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

LUNA FX7™ Automated Cell Counter				
	LUNA™ 1-Channel Slides	LUNA™ 8-Channel Slides	LUNA™ 3-Channel Slides	LUNA™ Cell Counting Slides / PhotonSlides™
Compatible slides				
Sample throughput	1 sample	Up to 8 samples	Up to 3 samples	Up to 2 samples
Sample loading volume	50 µL	10 µL / chamber	10 µL / chamber	10 µL / chamber
Maximum analysis volume	5 µL	0.5 µL / chamber	1.3 µL / chamber	1.3 µL / chamber

Optimized Microplate Solutions

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.



In-solution Characterization of Protein Dynamics and Vesicles

Work in plasma, media or buffer with full temperature control

Introducing the Fidabio Platform

The active state of proteins is dependent on many factors including oligomeric state, environment, or temperature. Naturally, the in vitro study with methods requiring immobilization or strict buffer conditions is very limited. Detection directly under native conditions ensures you that your decisions are based on the most biologically accurate data.

Flow induced dispersion analysis (FIDA) is offering analysis of protein dynamics and vesicles in solution and is tolerant to complex matrix composition. FIDA is based on the analysis of the hydrodynamic radius of a molecule (or particle) which will change when interacting with binding partners, change of oligomeric state or even change of conformation. As the only requirement for FIDA analysis is the detection of the molecule over time in a capillary, FIDA is hardly limited in size or composition of the analyzed molecule allowing the work with peptides, proteins, DNA, RNA, complexes or even large structures such as exosomes or condensates.

Here we are giving overview on some of the many applications where FIDA can provide additional information to conventional methods.

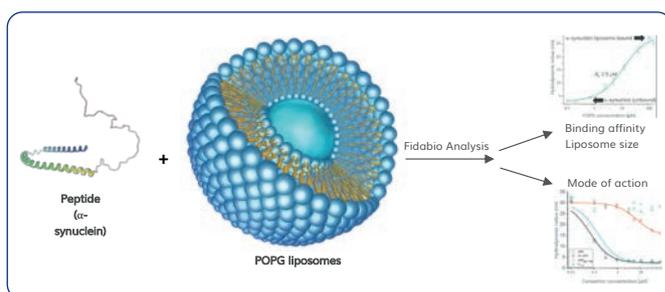
- **Protein degradation:** check out the AppNotes on protein degradation describing how in-solution studies with FIDA allows kinetic analysis of the formation of ternary complexes and how the transfer of ubiquitin from the ligase onto the target protein can be visualized.
- **Conformational changes in SAXS resolution:** Typically, small angular X-Ray Scattering is used to study conformational changes of proteins in solution with high resolution, but it is sensitive to buffer composition and restricted in the size of the protein complex. FIDA however can analyze conformation changes as low as 5% in radius in buffer and even complex solutions as in plasma.
- **Condensates:** FIDA can quantify and size condensates, including an autosampler for higher throughput. It also offers full temperature control on sample storage and independently on capillary compartment.



● **Exosome quantification:** Not only can FIDA analyze binding of antibodies to exosomes, but also it can determine the average size and concentration of exosomes. Note that FIDA has no lower size level of detection and can hence also take vesicles smaller than 25 nm in account.

● **Working with "problematic proteins"?** How often have you suffered from difficult to handle proteins which precipitate on chips, need additives like detergent to be soluble, or cannot be purified but need to remain in plasma or be prepared as nanodiscs? FIDA is very tolerant to buffer additives or complex solutions like plasma. As particles up to a size of 1000 nm can be used, work with nanodiscs is possible. Also, interaction partners do not have to be in the same buffer before the assay but buffers can mix within the capillary.

Want to learn more about FIDA? Contact us!



AppNote: Size-based characterization of peptide-liposome interactions.



- **FIDA TECHNOLOGY**
Detection under native conditions
- **APPLICATIONS**
Commanding immunogenicity
- **RESEARCH FOCUS**
Drug development and post launch safety
- **PRODUCTS**
Easy protocols – results within 5 minutes.

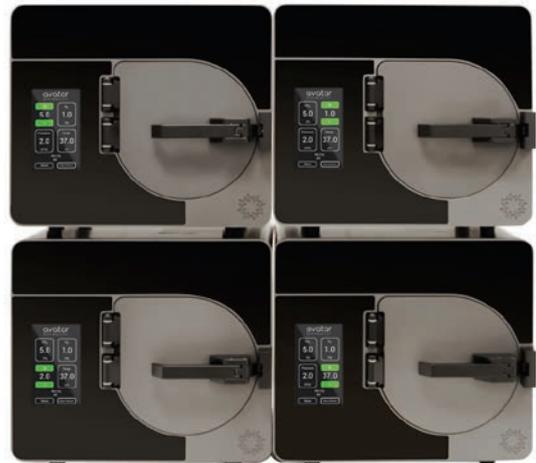
Control Your Stem Cell Destiny:

Improved Differentiation, Maturation & Proliferation of Stem Cells

Xcell Biosciences' Avatar™ System

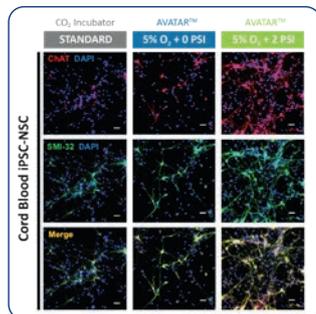
The ability to derive patient-specific neuronal cell types has proven to be a critical tool for human developmental studies, drug discovery, and regenerative medicine. The ability to direct the differentiation of stem cells into neuronal cell lineages or other cell types has enabled investigators to 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.



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

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.

UPCOMING EVENTS



Please visit us at these events:

- **WIRM 2021** (virtual event only)
Davos, 30. June – 3. July 2021
- **Swiss Physiology Meeting 2021**
Fribourg, 6. September 2021
- **Annual Meeting Basel Stem Cell Network 2021**
Basel, 10. September 2021
- **Swiss Seahorse User Meeting and Seminar Day**
Bern, 22. September 2021
- **Seminar Day on Drug Discovery**
Bern, 29. September 2021
- **ILMAC 2021**
Basel, 19. – 21. October 2021
- **Festival of Biologics 2021**
Basel, 9. – 11. November 2021



SAVE THE DATE

- **Seminar on Drug Discovery Research Essentials for Scientists in Academia and Industry**
Bern, 29. September 2021

Enabling Exosome Discovery

Accurately Detect and Fully Characterize Extracellular Vesicles!

Meet the ExoView® Platform from NanoView Biosciences



A step forward in characterization in the extracellular vesicles (EV) field, the fully automated ExoView platform provides multi-level and comprehensive EV measurement of EV size, count, phenotype, and biomarker colocalization. The ExoView platform provides previously unattainable information in a single, bias- and purification-free workflow. ExoView R100 is an affinity-based technology that allows specific populations of EVs to bind in a multiplexed manner to a functionalized ExoView microarray chip, using 35µL of sample volume only.

Characterize samples based on EV size distribution and count

ExoView quantifies EV sub-populations defined by surface markers. The platform counts EVs specifically, directly in the unprocessed sample and excludes any contaminants, enabling EV quantification without purification. Linear range spans 3 orders of magnitude. In addition, EVs as small as 50 nm in diameter can be analyzed with excellent peak-to-peak resolution in heterogeneous samples.

Characterize EV based on unique protein signatures

NanoView Biosciences provides the ability to measure up to 4 markers on a single extracellular vesicle. To assess protein expression profile, both surface and luminal markers can be measured, while the EVs

are simultaneously counted and sized. Detect low-abundance proteins on the smallest EVs.

Characterize EV subpopulations from multiple samples

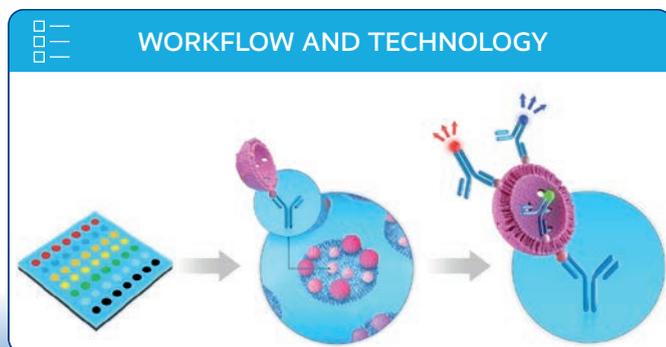
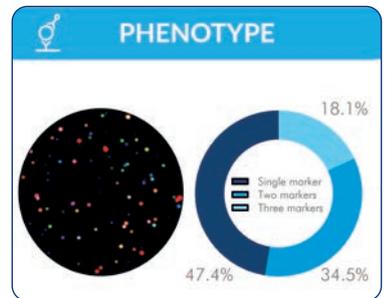
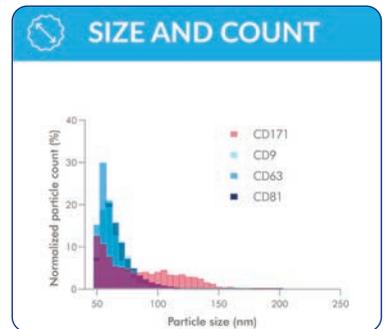
In the ExoView workflow, EVs are captured on a microarray chip using antibodies. Subsequent EV permeabilization allows staining and probing of cargo proteins at the single-EV level. ExoView single-molecule sensitivity enables detection of even the smallest EVs with low protein expression.

Custom antibody capture for detection of rare, disease-specific EVs

Use the new ExoFlex®-Kit to utilize your own, proprietary antibodies against your protein of interest for the capture of disease-specific EVs. Characterize multiple populations of EVs from a single sample and benefit from automated washing, staining and analysis of up to 9 samples simultaneously.

The fully automated instrument can measure complex samples without the need for purification, while reducing costs, saving time, and eliminating purification biases. The new chipwasher reduces hands-on time for 16 samples to under 5 minutes!

Contact us in order to learn how the ExoView can help you identify unique EV populations.



- ### Sample Matrices
- Blood plasma
 - Blood serum
 - Cerebrospinal fluid (CSF)
 - Cell culture with or without bovine EVs
 - Saliva
 - Urine
 - Follicular fluid
 - Synovial fluid

PURIFICATION NOT REQUIRED
Measure the changes in your sample, not the biases from your purification technique

FLUORESCENCE
3 color fluorescence (Blue, Green, Red)

EV CARGO
Probe for EV luminal proteins and cargo

EV SIZE
Measure the size of EVs down to 50nm

KEY FEATURES

BIOMARKER COLOCALIZATION
Colocalize up to 4 biomarkers on single EVs

EV COUNT
Count EVs expressing specific surface markers