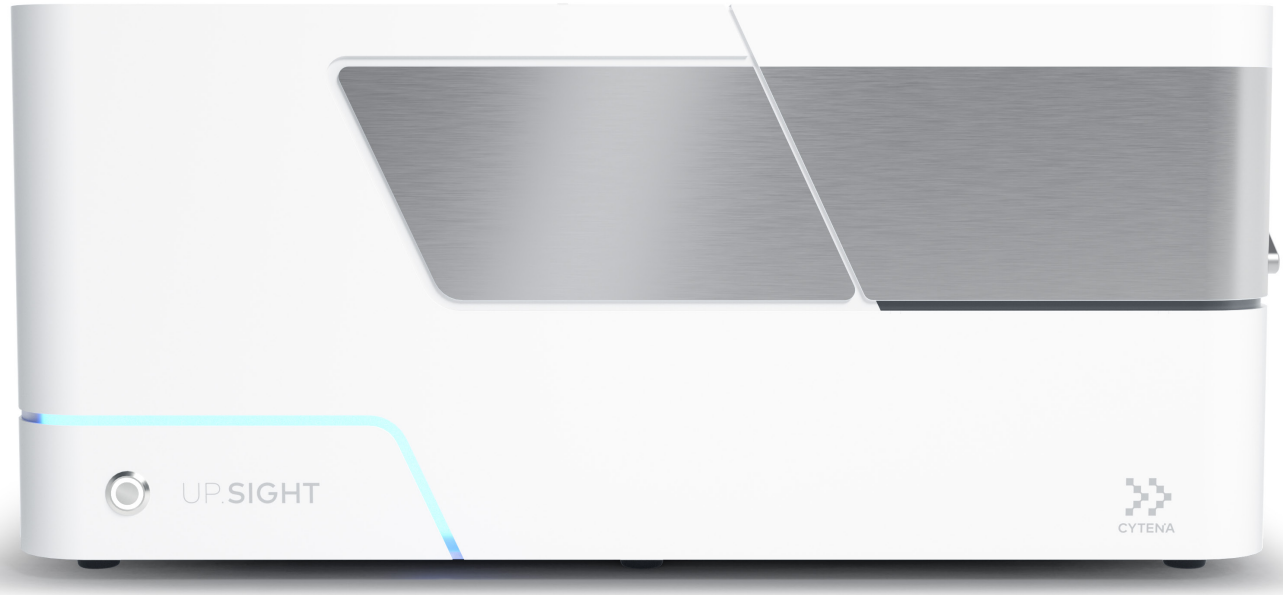
UP.SIGHT™

Welcome To A New Era In Cell Line Development



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Elevate Your Cell Line Development Workflow

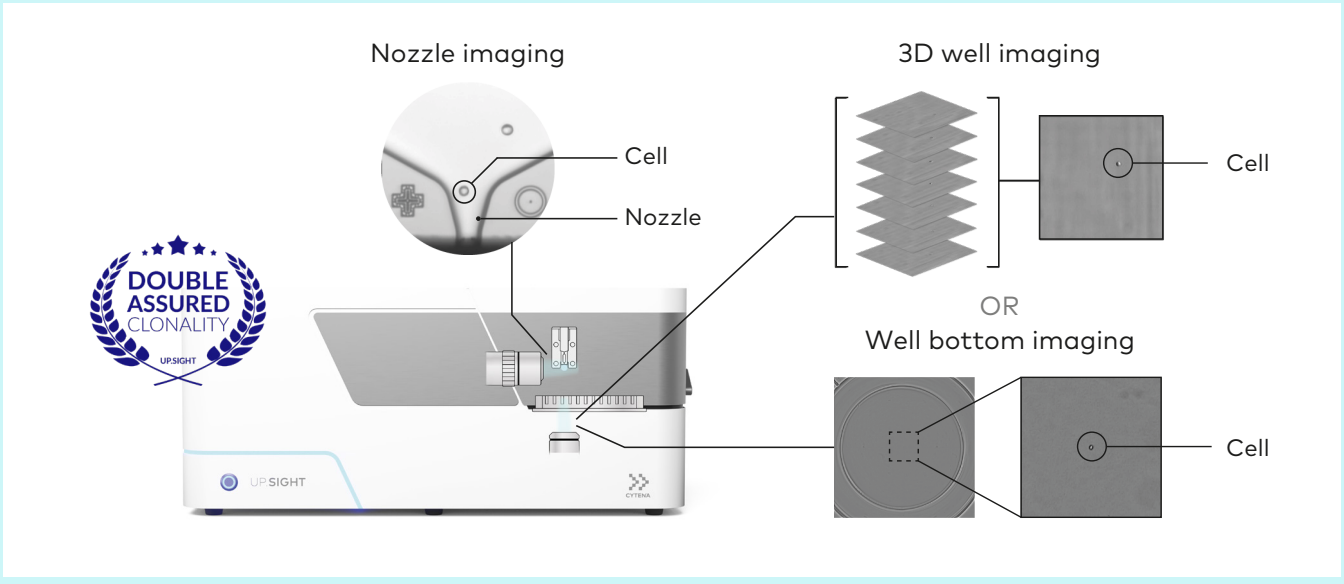
Biologics account for many of the best-selling drugs worldwide, emphasizing the importance of optimized cell line development workflows for producing the next generation of cell and gene therapies, monoclonal antibodies, and other modern therapeutics.

The UP.SIGHT provides the optimization your workflows require: with >97% single cell dispensing efficiency, up to 80% cloning efficiency, and the ability to monitor colony growth and measure titers, it is your all-in-one instrument for efficient, automated single cell dispensing and clone selection. By combining nozzle imaging with 3D well imaging (384-well plates) or traditional well bottom imaging (96-well plates and 384-well plates), our patented system ensures clonality from day zero with a probability of clonal derivation above 99.99%. Single-use cartridges and FDA 21 CFR Part 11 compatible C.STUDIO analysis software — which ensures your workflows are comprehensively documented — allow for easy integration into GMP workflows.

The Double Assurance Advantage: Ensured Clonality

The UP.SIGHT integrates two independent methods to ensure the clonality of your cells. First, live imaging of the dispensing nozzle verifies that only a single cell is placed into each well of your 96- or 384-well plate, discarding nonclonal droplets. Then, dispensing of individual cells is confirmed with plate imaging.

The UP.SIGHT facilitates traditional dispense-well bottom imaging workflows for 96-well plates and leverages revolutionary 3D well imaging for 384-well plates.



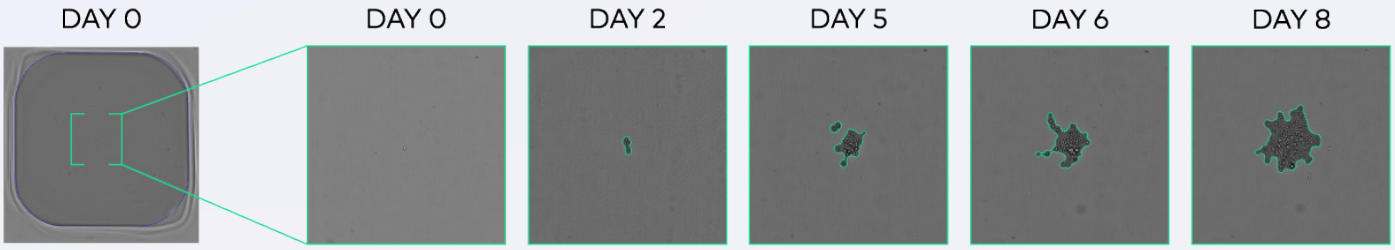
With 3D well imaging, you'll never be concerned about artifacts, plate scratches or edge effects. Additionally, you can skip pre-imaging centrifugation or cell settlement in the incubator, saving time while remaining confident of the monoclonality of your cells.

Reduced Risk of Cross-Contamination

The UP.SIGHT's exclusive EASY.ON cartridge, which has been precisely engineered by microfluidic experts for the gentlest cell handling to maximize cell viability, is the only component of the system that ever comes in contact with your sample. Each disposable cartridge contacts only a single sample, eliminating the risk of cross-contamination. Additionally, the EASY.ON cartridge is magnetically mounted for quick and effortless loading, making experimental setup easier than ever.

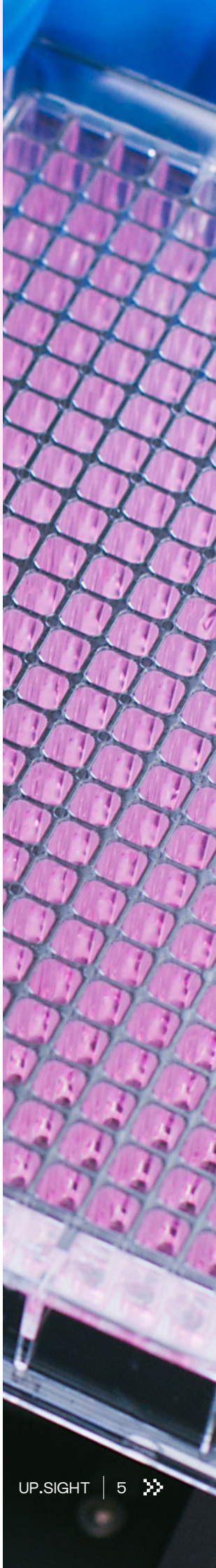
Your All-In-One Single Cell Cloning Solution

With an integrated imager, the UP.SIGHT enables a complete single cell cloning workflow. From ultra-gentle dispensing of single cells with >97% single cell dispensing efficiency, to doubly ensured clonality and imaging of adherent cells and cells in suspension over time, and achieving over 80% cloning efficiency, the UP.SIGHT does it all, right from day zero. You can even perform cell counting to select your best-growing clones.



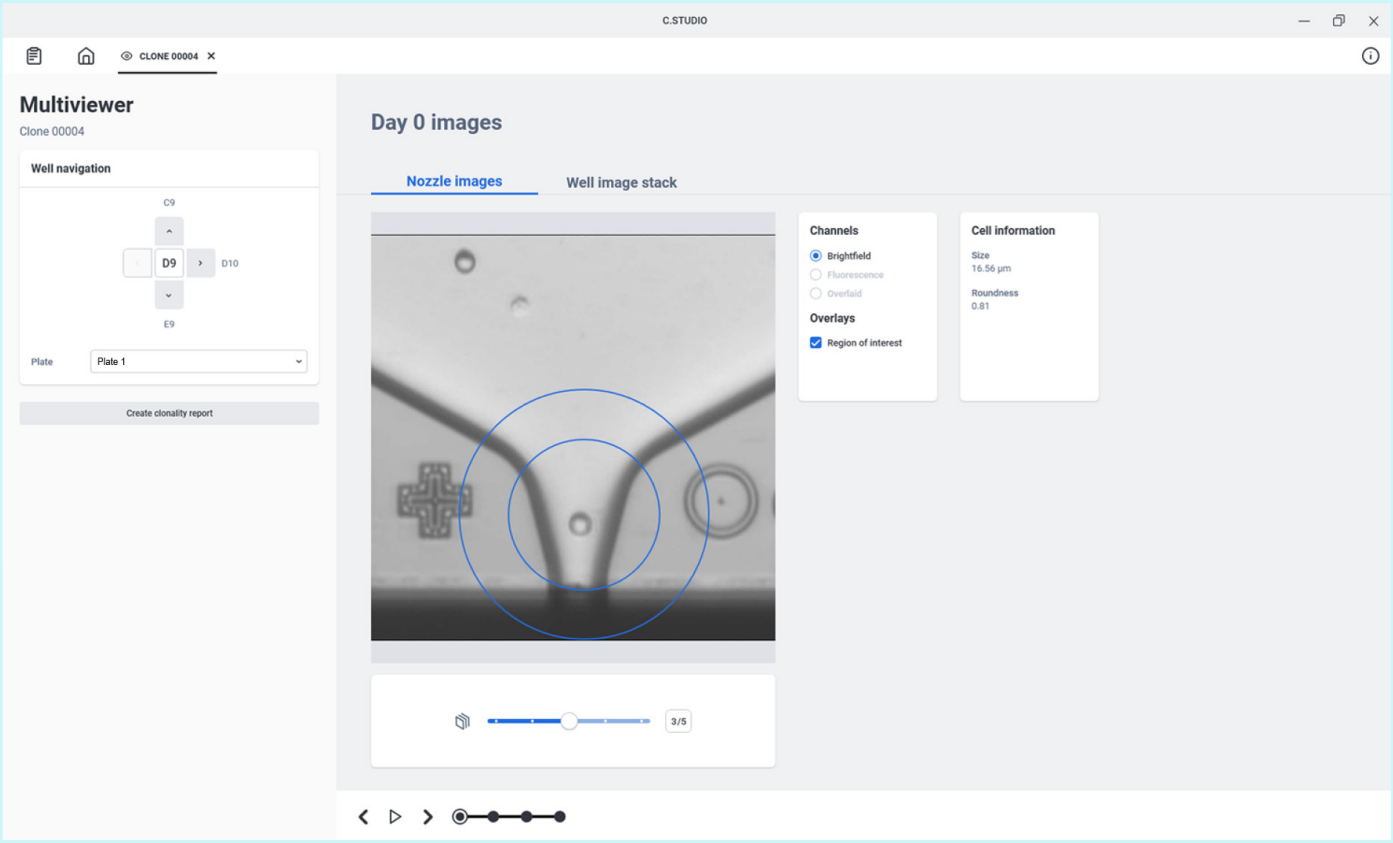
Identification Of High-Producing Clones With Titer Measurement

The UP.SIGHT can also be used to read our high-throughput 384-well F.QUANT titer assays, to rapidly and confidently measure monoclonal antibodies, Fc fusion proteins or human Fab fragments to select your most promising, high-producing clones.



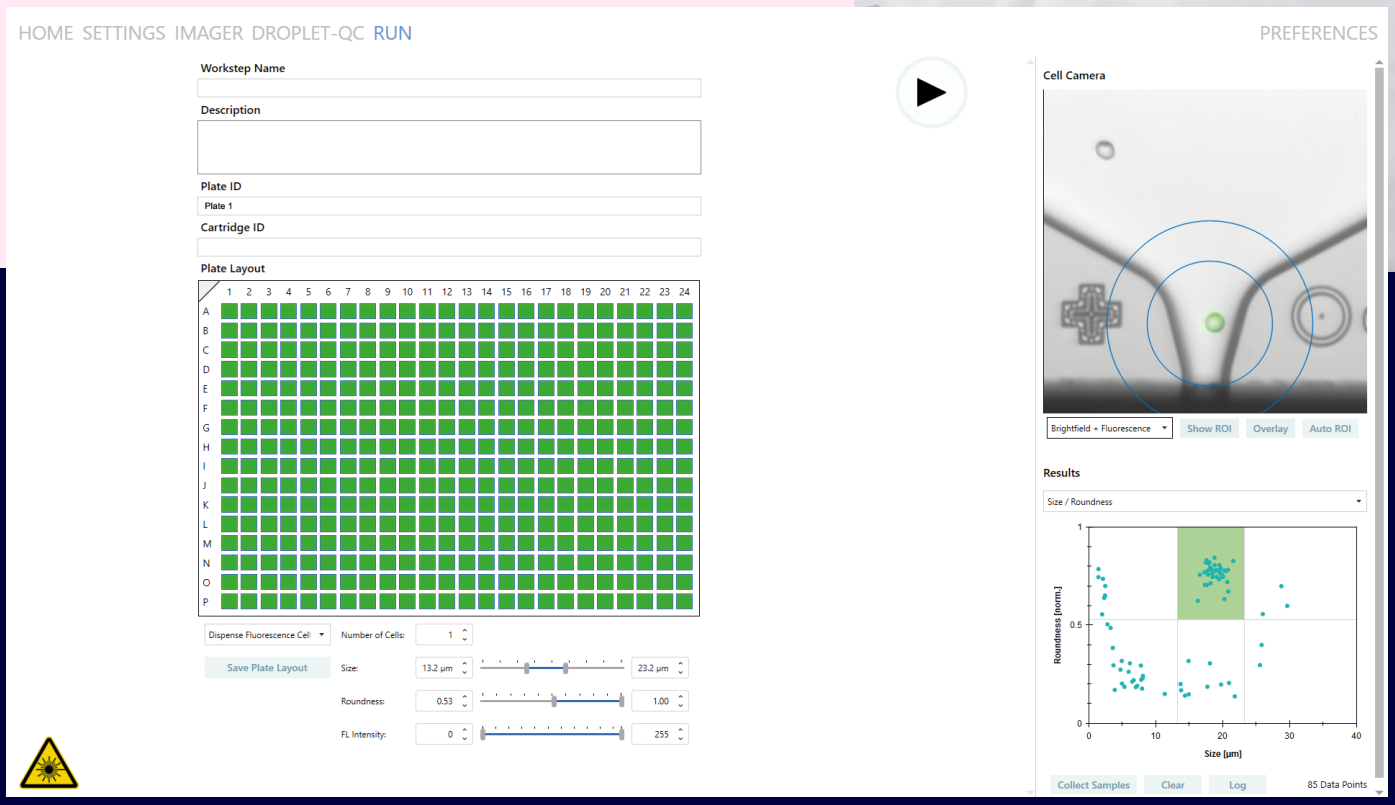
Comprehensive Clone Tracking With C.STUDIO Software

Our co-developed C.STUDIO analysis software allows you to easily integrate all data generated by the UP.SIGHT with external sequencing data and other custom data to track all clones throughout the entire cell line development cycle so you can pick the very best candidates. Supporting FDA 21 CFR Part 11, C.STUDIO software documents clonal derivation in a regulatory submission-ready clonality report and supports integration of your experimental procedures into GMP workflows.



Higher Yields + Faster Processing = Greater Insights

The UP.SIGHT was engineered to level-up your single cell cloning workflows, enabling higher yields at faster processing speeds. The instrument's operating software analyzes cell morphology according to user-specified parameters including size, roundness, and even fluorescence intensity when working with fluorescent cells. Quick and intuitive setup of thresholds for each parameter ensures that only desired cells are dispensed into wells.

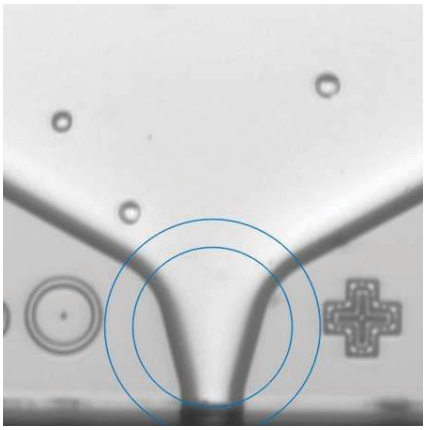


Additionally, the combination of our patented, automated dispensing technology with an industry-leading imaging system ensures higher clonal yields faster than ever: using 3D well imaging of 384-well plates, researchers can isolate and image hundreds of clones in approximately 35 minutes, with a fraction of the hands-on time required from typical workflows.

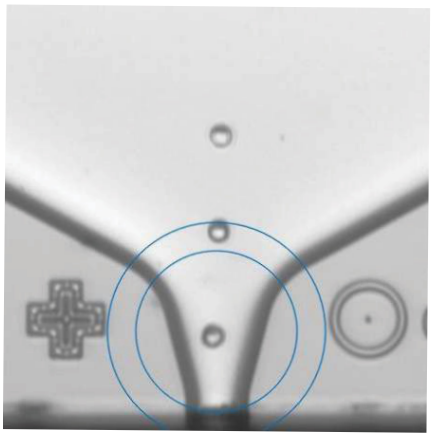
In Focus: Minimizing Cell Loss

Add an additional layer of optimization with the Cell Focusing technology, which gently aligns cells at the center of the dispensing cartridge for superior cell detection. This alignment ensures that cells and their morphology are perfectly captured and measured, reducing cell loss, increasing processing speeds, and offering significant improvements when working with rare cell types.

Cell Focusing **Off**

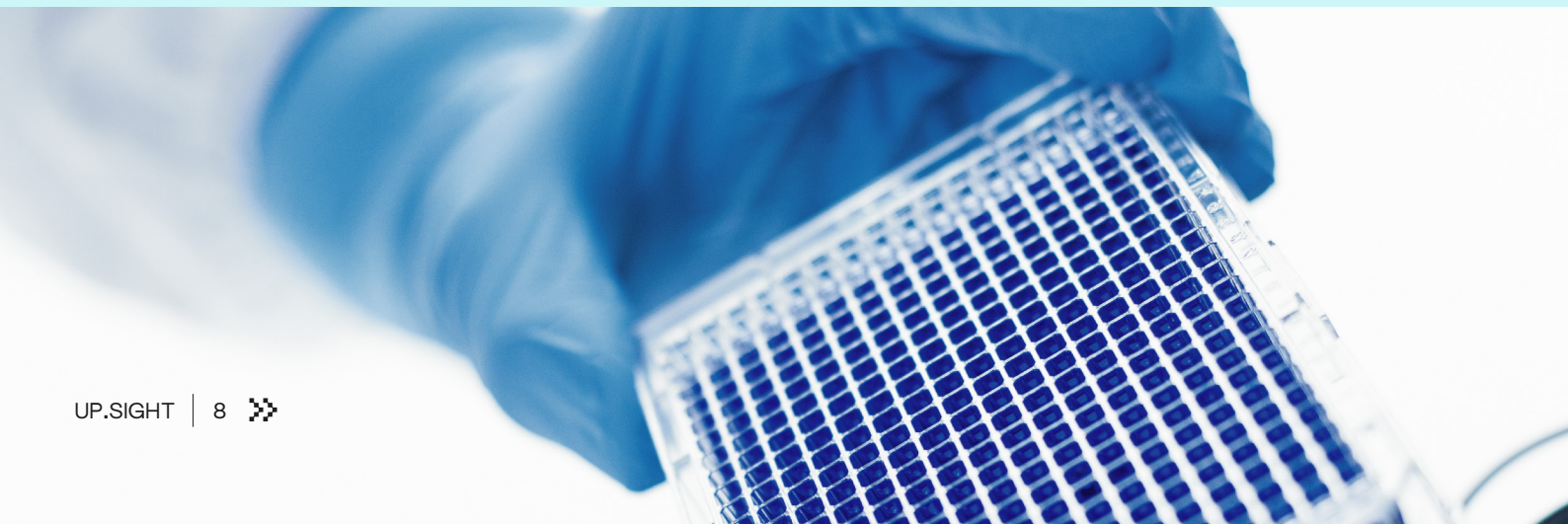


Cell Focusing **On**

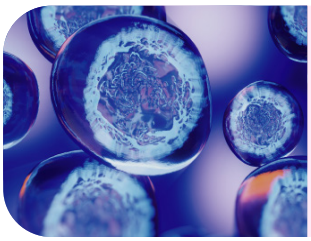


Tailor-Made For Automation

The UP.SIGHT was developed with automation in mind. With a programmable lid that opens and closes automatically for seamless integration with robotic arm plate carriers and the ability to save experiments as templates to facilitate quick and easy set up of future dispensing runs, the UP.SIGHT is the automated laboratory's tailor-made instrument for cell line development.



Impact Areas

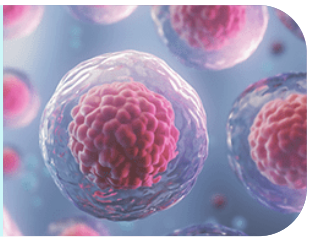


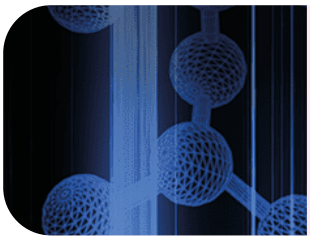
Monoclonal antibody development

Build upon the industry standard single cell dispensing technology and get double assurance of clonality with the UP.SIGHT. Combined technology of nozzle and 3D well imaging results in >99.99% probability of clonality ensuring that your monoclonal antibody product meets the strict regulatory standards for product consistency and reproducibility.

Cell therapy & stem cell research

Enhance cell well-being with UP.SIGHT's gentle dispensing technology. The disposable microfluidic chip assures gentle cell dispensing resulting in up to 80% clone recovery without loss of pluripotency. This kind-to-cells approach guarantees the selection of top clones, significantly improving the safety and efficacy of resultant cell therapies.



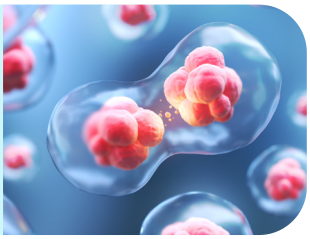


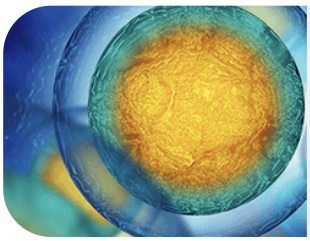
Gene therapy

Generate premium viral vectors from stable producer cell lines that you can rely on, when you work with the UP.SIGHT. With a >99.99% probability of clonality and smart automation, you will reduce batch-to-batch variation and enhance throughput, enabling you to select the most efficient lines for gene therapy manufacturing.

Monoclonal cell culture

The UP.SIGHT single-cell dispenser empowers bioprocess scientists with the gentle dispensing of monoclonal cells coupled with realtime tracking technology that enables precise monitoring from single cell to colony.





Automated cell line development

Automate your CLD with the UP.SIGHT for a streamlined biologics R&D process. With a double assurance of clonality and real-time colony tracking, your monoclonal producer cell lines will give rise to quality products that are consistent, safe and compliant from batch-to-batch.

Genetic engineering

Generate genetically engineered monoclonal cell lines using UP.SIGHT's gentle dispensing technology. The disposable microfluidic chip ensures gentle cell dispensing and prevents cell stress. With a >99.99% clonal probability and high cloning efficiency, you will be able to increase throughput and select the best cell lines for safe allogeneic cell products.

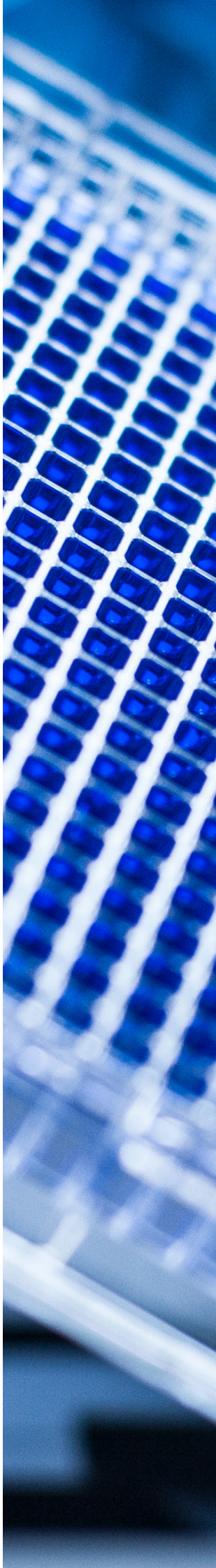
They said it. Not us.

"Axxam has revolutionized the limiting dilution process with the UP.SIGHT instrument over the past year. We experienced the power of this remarkable tool with its **intuitive interface and double assurance of clonality, enabling us to accelerate the production of stable monoclonal cell lines expressing a diverse range of targets** for our high-throughput screening campaigns. This invaluable asset has been an integral part of our cutting-edge research programs, ensuring our work remains at the forefront of scientific innovation."

— Paola Picardi, Principal Scientist, Axxam

"**Very gentle and reliable cell dispensing system that allows for automation of assuredly monoclonal cell line generation** with our very large and fragile protoplasts. The UP.SIGHT is easy to handle and easy to integrate into the existing lab due to its small footprint."

— Nicola Krieghoff, Scientist Strain Development, eleva GmbH



Technical Specifications

Samples	Eukaryotic cells
Cell size	5 – 40 µm
Sorting	Cell morphology and fluorescence
Cartridge	EASY.ON 40 µm disposable cartridge to avoid cross-contamination
Droplet volume	~200 pL
Plate types for dispensing	96- and 384-well plates
Nozzle imaging	Camera CMOS Magnification 10x Dual-channel: Brightfield and fluorescence
Fluorescence nozzle imaging (laser-based)	Ex. 488 nm Em. 520 +/- 36 nm
Well imaging	Camera CMOS Magnification range for 384-well to 6-well plates: 2.4x (resolution 4 µm/px) to 2.2x (resolution 4.36 µm/px) Brightfield
F.QUANT-based titer measurement (optional; LED-based)	Ex. peak 634 nm (50% Bandwidth: 626 - 642 nm) Em. 666-723 nm
Dispensing times	Single-cell dispensing 96-well plate: ~2 min Single-cell dispensing 384-well plate: ~8 min Single-cell dispensing plus 3D well imaging 384-well plate: ~35 min
Plate types for well bottom imaging	6-, 12-, 24-, 48-, 96-, 384-well plates
Well bottom imaging time	~6 min per plate
F.QUANT-based titer measurement time (optional)	~9 min per plate
Automation	Lid opening and closing Compatible with standard automation arm and gripper Compatible with third-party automation clients
Embedded computer	Windows
Compatibility	Standard biosafety cabinets class 2
Footprint	635 x 400 x 282 mm
Weight	40 kg
Certification	CE, CB, UL (TÜV), RoHS

We create the future of health.

CYTENA, A BICO COMPANY

CYTENA is a leading provider of high-precision instruments for isolating, dispensing, imaging, analyzing and handling biological cells. The company continues to build on the success of the single-cell dispensing technology it patented as a spin-off from the University of Freiburg, Germany, in 2014. Today, as part of BICO, the world's leading bio convergence company, CYTENA's award-winning devices are still manufactured in Germany and used at prestigious academic and pharmaceutical labs around the world to automate workflows in numerous application areas, including stable cell line development, single-cell omics, high-throughput screening and drug discovery. CYTENA's breakthrough innovations for the lab combine advanced automation, state-of-the-art software engineering and the latest insights in cell biology to maximize efficiencies in the life sciences and create the future of health. Learn more at www.cytena.com

info@cytena.com +49 761 21632000 www.cytena.com