

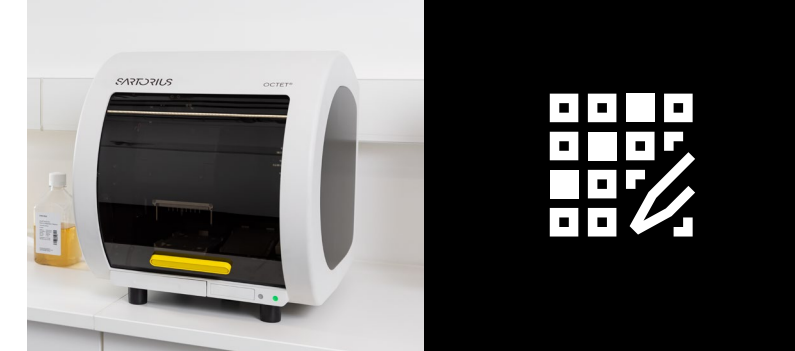
Sartorius Solutions for Monoclonal Antibodies (mAbs) Discovery and Development

Gain More Insights, Make Better Decisions

Therapeutic antibodies have recently emerged as one of the most successful strategies for the treatment of both hematologic cancers and solid tumors. Because they offer the promise of better specificity and safety than many other cancer treatments, this class of biologics is projected to continue increasing in importance.

Accelerate Your Antibody Development with Peace of Mind

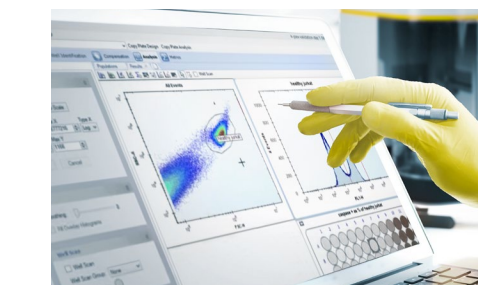
For development of breakthrough therapeutics you need revolutionary technologies providing rapid, multifactorial results to enable deeper insights and ensure the choice, quality, and integrity of your biopharmaceutical product.



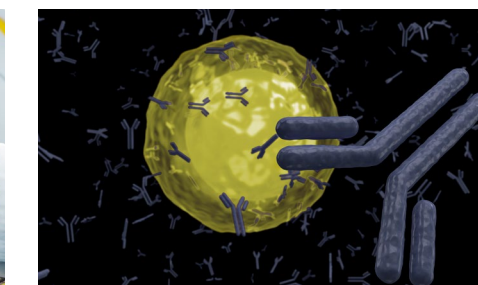
Cell and Protein Analysis Platforms for Tracking Complex Biological Processes

The CellCelector Automated Cell Imaging and Picking Platform, Incucyte® Live-Cell Analysis, iQue® Advanced Flow Cytometry, and Octet® Label-Free Analysis systems offer unique, high-capacity cell and protein analysis solutions for characterizing cell phenotype and function and tracking complex biological processes.

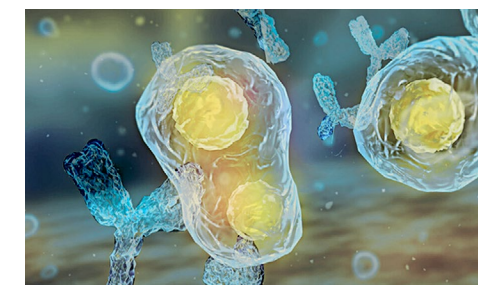
Legend:
■ CellCelector
■ iQue®
■ Incucyte®
■ Octet®



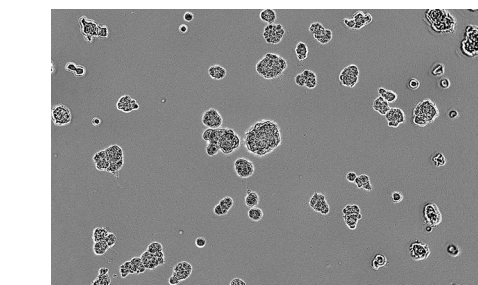
Antibody Library Screening
 Increase data throughput and quality by multiplexing antibody binding, specificity, and species cross reactivity.



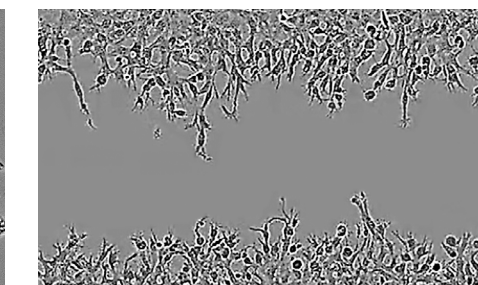
Functional Profiling
 Easily go from high-content functional assays to actionable information that helps you select candidates with desirable biological activity.



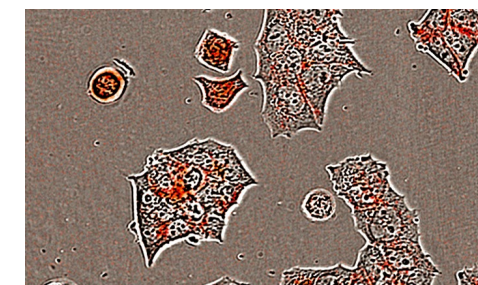
Cell Line Development
 Select antibody producing clones upstream of cell line development by simultaneously detecting IgG titer, cell health, and viability.



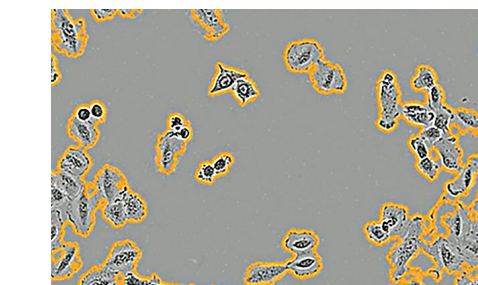
3D Tumor Spheroid Assays
 Track and quantify tumor spheroid formation, growth, and death in real time.



Cell Migration and Invasion
 Monitor and analyze migration and invasion with or without a chemotactic gradient.



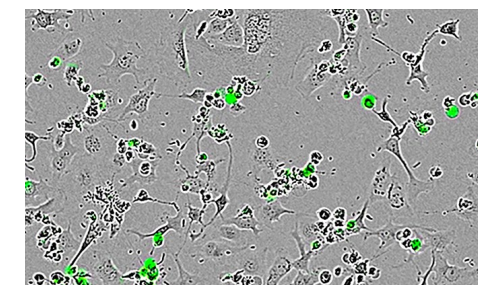
Antibody Internalization
 Quantify antibody internalization in 96- or 384-well formats.



Proliferation
 Measure cell proliferation in mono- or co-cultures, with or without labels.



Apoptosis
 Investigate aberrations in apoptotic pathways in intact, living cells.



Cytotoxicity
 Detect real-time measurements of cell death based on cell membrane integrity.

Find out more
 For more information, please visit www.sartorius.com/mAb-oncology

Complete with comprehensive analysis and visualization capabilities, our platforms will empower you with actionable results, faster!

Essentials for Every Lab



Sartoclear Dynamics® Lab



Picus® NXT Electronic Pipette



Midi Plus Pipette Controller



Vivaspin® Ultrafiltration Devices and Vivapure® Virus Purification Kits

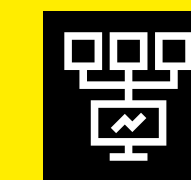


Rapid Contamination Control—Microsart® Mycoplasma and Sterility Testing

Insightful Solutions for Biologics Drug Discovery with a Focus on Monoclonal Antibodies (mAbs)

Simplifying Progress

Ensure Confidence in Your mAb Discovery and Development Program



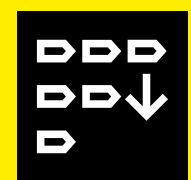
More Insight Through Complete Cellular and Molecular Interaction Analysis Studies



Better Reproducibility with Orthogonal Assays and Integrated Data Acquisition



Higher Confidence in Quality, Purity, and Integrity of Your Product



Increase Productivity by Streamlining the Discovery and Development Workflow



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Solutions and Services for Molecule Development

iQue® Advanced Flow Cytometry Platform— Multiparametric and Actionable Results for More Insight
 A high-throughput, suspension cell and bead-based analysis platform for antibody screening and functional profiling. The fastest way to generate high content data from small sample volumes.

- Screen your libraries in days, not months
- Sample volumes as low as 1 µL, reduce reagent costs
- Screen cells in suspension and targets in their natural conformation


See specific applications in “Cell and Protein Analysis Platforms” section.



Incucyte® Live-Cell Analysis System— See What Your Cells Are Doing and When
 Enable real-time, live-cell imaging and analysis directly inside your incubator.


- Use with non-perturbing Incucyte® reagents to detect dynamic biological changes
- Measure kinetic effects of your antibody treatment on target cells
- Accommodates multiple users and applications in parallel

See specific applications in “Cell and Protein Analysis Platforms” section.




Octet® Bio-Layer Interferometry (BLI) Detection Systems for Label-Free Detection—Perform Protein Quantitation and Kinetics Characterization Assays
 Measure molecular interactions in real-time without the need for detection reagents and enable advanced, fast, and fluidics-free direct detection of specific biomolecules.

Rapidly determine product titer, screen for specific glycosylation content and perform off-rate analysis to select optimal clones using both purified and unpurified samples




Cell Line, Media and Testing Service—Benefit From Our Experience in Custom Cell Line Development
 The Sartorius CHO Platform bundles the industry-leading Cellca Cell Line Development service with a fully optimized cell culture media system, cGMP cell banking, protein characterization services and biosafety testing to create an integrated solution for protein-based therapeutics.

- From DNA to a fully characterized Master Cell Bank in less than 5 months



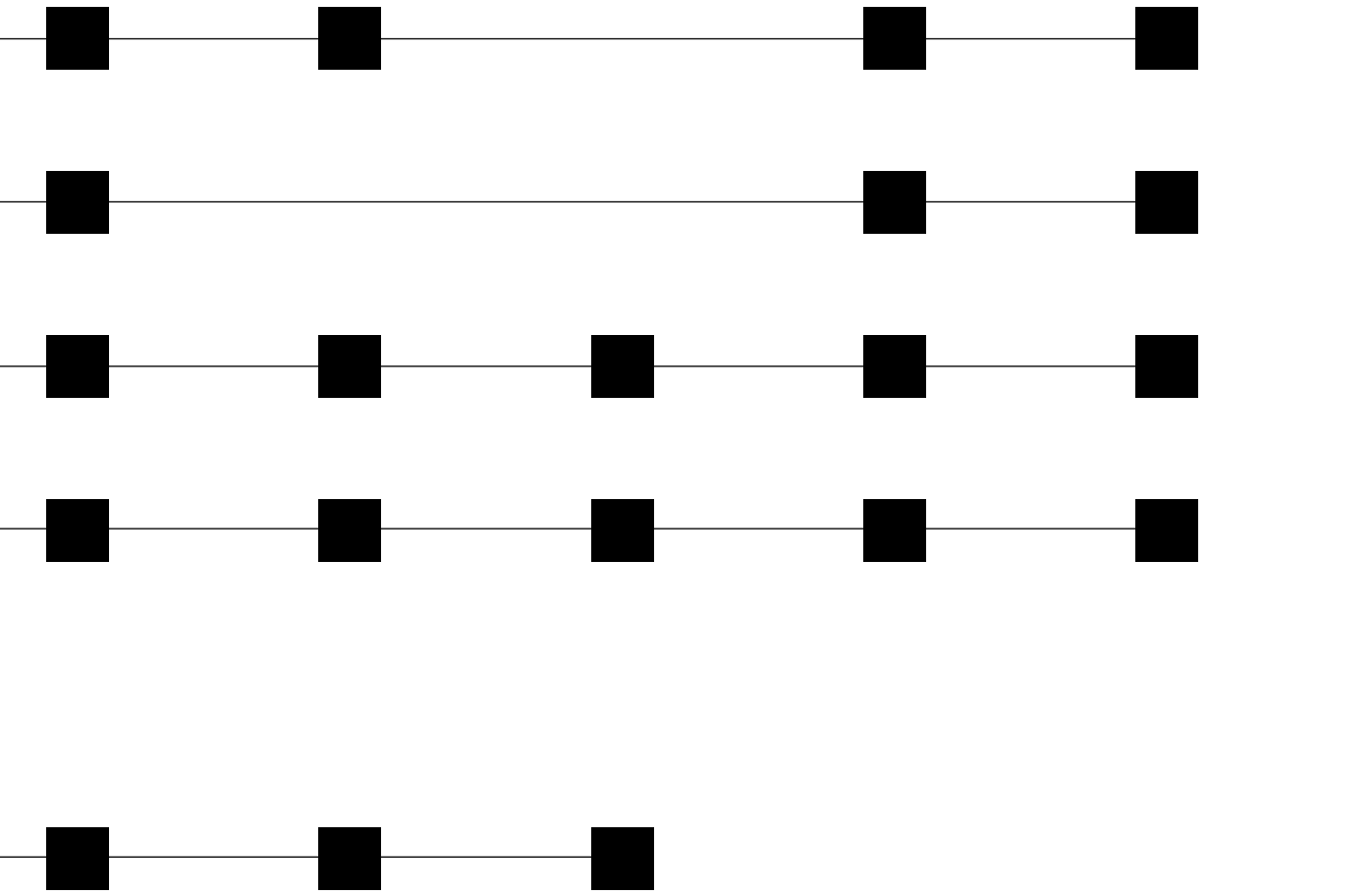
CellCelector Automated Cell Imaging and Picking System— Select and Screen Single Cells for Antibody Discovery

- High-throughput single plasma B-Cell and Hybridoma clone screening for antibody discovery
- Massively parallel co-cultivation of different cell types for functional studies
- Rare single cell detection and isolation



Molecule Development Workflow

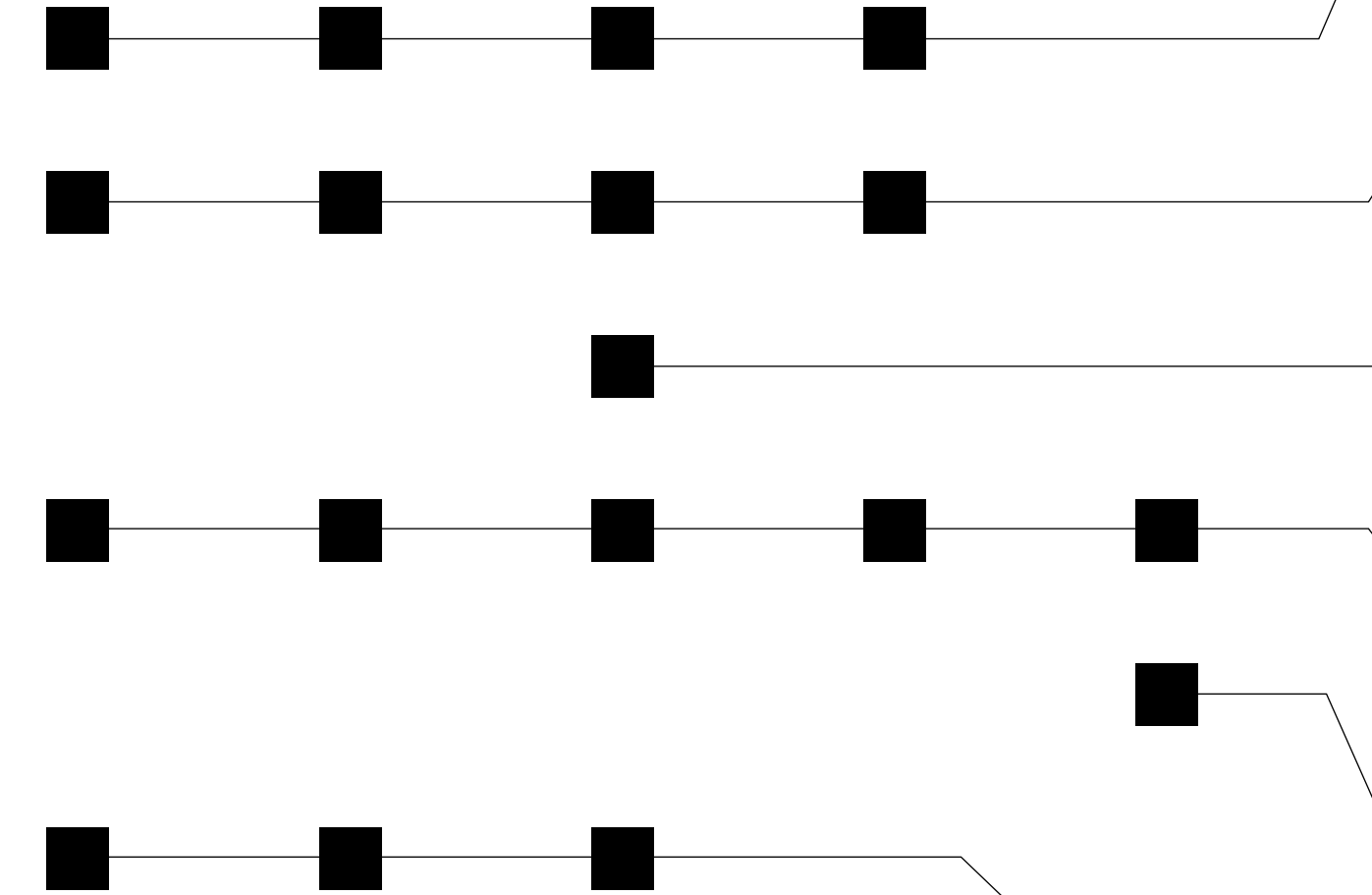
- Target Identification**
 Multiparametric and actionable results for more insight and better decisions
- Library Screening**
 Screen whole-cell binding hybridoma, single B-Cells or phage library to identify positive hits
- Hit Confirmation**
 Confirm hits in kinetic binding assays
- Lead Optimization**
 Assess and optimize the properties of lead antibodies
- Candidate Characterization**
 Analyze the structural properties of the lead antibodies as well as binding and functional properties



Find out more
 For more information, please visit
www.sartorius.com/biologics


Cell Line Development Workflow

- Gene Cloning and Initial Clone Selection**
 Rapid screening of minipools for product titer, cell health and growth
- Clone Selection and Confirmatory Analysis**
 Early identification of high productivity clones with optimal critical quality attributes
- Cultivation and Media Optimization**
 Screen culture conditions and media formulations for optimal growth and protein production
- Cell Line Evaluation and Characterization**
 Characterize top clone for stability, productivity, and quality attributes of the protein
- Cell Banking**
 Research Cell Bank (RCB), Master Cell Bank (MCB), and Working Cell Bank (WCB) preparation



CellCelector Automated Cell Imaging and Picking System— Select and Screen Single Cells for Antibody Discovery


- Single cell cloning and picking
- Integrated monoclonality, viability and productivity proof
- Characterize tens of thousands of clones in parallel



Solutions and Services for Cell Line Development

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iQue® Advanced Flow Cytometry Platform— Multiparametric and Actionable Results for More Insight
 A high-throughput, suspension cell and bead-based analysis platform for antibody screening and functional profiling. The fastest way to generate high content data from small sample volumes.


- Screen your libraries in days, not months
- Sample volumes as low as 1 µL, reduce reagent costs
- Screen cells in suspension and targets in their natural conformation

See specific applications in “Cell and Protein Analysis Platforms” section.




Ambr® 15 Cell Culture Bioreactor System— Improve the Overall Efficiency and Speed of Your Cell Line and Media
 Ambr® 15 Cell Culture is a high-throughput automated micro bioreactor for predictive cell line and media screening. Rapidly evaluate multiple bioreactor cultures at microscale, thus increasing your productivity in cell line development and saving on materials and labor.

- Rapid screening of clones and media optimization
- Data-rich culture profiles with automated sampling
- Large multifactorial experimental designs (DoE) in real-time



Cell Line Development Services— Expand Your Capabilities with Our Cell Line Development Services
 The Sartorius CHO Platform bundles the industry-leading Cellca Cell Line Development service with a fully optimized cell culture media system, cGMP cell banking, protein characterization services and biosafety testing to create an integrated solution for protein-based therapeutics.

- From DNA to a fully characterized Master Cell Bank in less than 5 months
- The platform offers reduced costs and development risks, proven results, and exceptional flexibility



Fill-it Automated Cell Banking System— Produce Large, Homogenous Banks of Cells Under cGMP Conditions
 Fill-it Automated Cell Banking System offers improved consistency and shortens process times compared to manual processing, giving the potential to increase batch sizes for cell banking and dramatically reduce QC costs.

- Fits in a standard biosafety cabinet
- Facilitates easy loading and operation
- De-caps racks of cryovials held in either 96-, 48- or 24-vial racks
- Provides automated cell banking compatible with wide microtube range

