MERCK

CULTIVATE CONSISTENCY

Comprehensive solutions for thriving cell cultures

Millipore®
Preparation, Separation,
Filtration & Monitoring Products

Sigma-Aldrich®
Lab & Production Materials

PREPARE → GROW → ANALYZE

Cultivate Consistency

Discovery requires a solid foundation. From cell preparation and growth to investigation and analysis, our comprehensive portfolio provides the quality and consistency to ensure meaningful, reproducible results

Advance your research with consistent and comprehensive cell culture solutions.

PREPARE

Establishing a successful culture begins with preparing cells and media with the highest standards. Count on our extensive collection of validated cell lines, high flowrate filtration systems, and diverse cryopreservation products to set up your cell culture for success.

- **Cell Lines & Primary Cells**
- **3D Cell Lines**
- **Cell Freezing Solutions**
- **Sterile Filtration**
- **Essential Labware and Equipment**
- **Lab Water Purification**
- **MilliSentials™ Lab Tools**

GROW

Creating conditions similar to those that exist *in vivo* is essential for cell culture. To ensure a consistent environment throughout your experiment requires well-characterized materials and high-quality products. From sterile media and reliable sera to cell culture inserts and flasks, we have the tools to help you optimize cell growth.

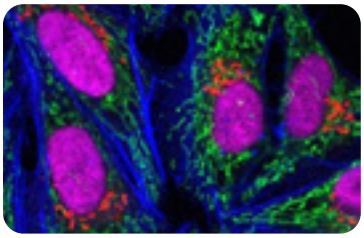
- **Quality Cell Culture Media**
- **Accountably Sourced FBS and Other Sera**
- **Supplements, Growth Factors, and Attachment Factors**
- **3D Cell Culture Tools and Supplements**
- **Millicell® Specialty Culture Inserts and Plates**
- **MultiScreen® Filter Plates**
- **Essential Millipore® and Corning® Cultureware**

ANALYZE

Researchers need state-of-the-art reagents and tools to understand and quantify cell health and function. From counting to live imaging, our wide range of advanced technologies will help you analyze faster, with greater precision, and with more insight into cellular processes.

- **Cellular assays for viability, toxicity, migration, oxidative stress, and more**
- **Dyes and fluorophores for live cell analysis**
- **Antibodies rigorously validated for diverse applications**
- **Scepter™ 3.0 Handheld Cell Counter**
- **Millicell® DCI Digital Cell Imager**
- **CellASIC® ONIX2 Microfluidic Live Cell Imaging System**

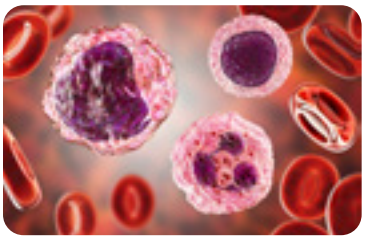
Establishing a healthy, predictive culture begins with preparing cells and media according to the highest standard. Rely on our comprehensive portfolio of validated cell lines, high flow-rate filtration systems, and diverse cell freezing solutions to successfully expand cells for downstream analysis or banking.



Cell Lines

Count on cell lines of the highest quality through our partnership with the European Collection of Authenticated Cell Cultures (ECACC) and the European Bank for induced Pluripotent Stem Cells (EBiSC). This repository delivers the most diverse selection, including:

- Mammalian cell lines
- Cancer cell lines
- Stem cell lines
- Engineered cell lines
- Primary cell lines



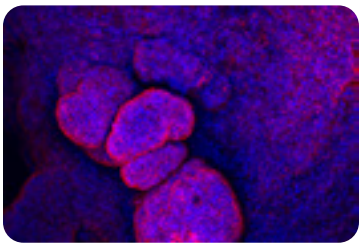
Primary Cells

We have partnered with PromoCell®* to offer primary cells and optimized media and reagents. Human primary cells are validated for cell type, specific markers, cell morphology, and proliferation capacity. Our expanded primary cell portfolio includes a wide range of human blood and stem cells.

*These products are available in select geographies.

In partnership with BioIVT, we offer a comprehensive portfolio of ready-to-use normal and disease state peripheral blood mononuclear cells (PBMCs) from a variety of immune cell subtypes. From basic research to drug discovery and translational studies, we provide reliable access to fully characterized, HLA-typed PBMCs isolated from a wide variety of donors.

Along with Cell Applications Inc., we also offer a wide range of over 100 primary human and animal cell types. These cell lines have been cited extensively in peer-reviewed research articles and patents.



3D Cell Models

Modern 3D cell culture tools, reagents, and techniques provide more predictive in vitro cell models for a diverse array of applications, including cancer research, drug discovery, and regenerative medicine. Our portfolio of 3D cell lines includes:

- iPSC colon organoids
- iPSC lung organoids
- Patient-derived gastrointestinal organoids
- Patient-derived lung organoids

Cell Freezing Solutions

Protect your cells from the formation of damaging ice crystals during freezing by using our application-tested cryoprotectants, freezing containers and ready-to-use media, including:

- Sterile-filtered dimethyl sulfoxide (DMSO)
- CryoStor™ and other DMSO-containing cell freezing media
- CryoSOfree™ and other DMSO-free formulations
- CoolCell® alcohol-free freezing containers from Corning®

Sterile Filtration

Sterilize your cell culture media and buffers with our extensive portfolio of high-flow rate filters. We have been a trusted partner in high-performance, specialty membranes and filter devices for over six decades.

- **Stericup® Quick Release Vacuum Filtration Device** With ergonomic design updates that optimize usability and streamline the filtration process, protect your cell cultures with the renowned performance of Millipore® membranes.
- **Stericup E® Filters** With significant waste reduction and the same high-quality Millipore® membranes, it's easy to meet your lab's sustainability goals.
- **Millex® Syringe Filters** Ideal for reducing sample loss in your processes, Millex® syringe filters are optimal including HPLC sample prep and filtration of antibiotics and tissue culture additives.
- **Corning® Filters** We also partner with Corning® to offer the range of filters for cell culture to provide you with the optimum selection of highest quality, high performance filtration.

Whatever your application, we have the right filter for you.

Essential Labware and Equipment

Every research facility requires reliable laboratory equipment - high-quality labware and tools that ensure successful cell culture projects and reliable, reproducible data. We offer a wide range of laboratory essentials and equipment from Sigma Aldrich® and our partners at B Medical Systems and Eppendorf®. Explore these product portfolios and discover the labware and tools that are ideal for you research and pharmaceutical applications.

- B Medical Systems Refrigerators and Freezers; which provides a range of cold storage options from +5 °C to -41 °C/-32 °C and -82 °C.
- Eppendorf® Equipment and Consumables; including centrifuges, incubators, and PCR cyclers.

Lab Water Purification

The importance of pure, endotoxin-free water for use in cell culture can never be overstated. Our industry-leading pure and ultrapure water purification systems and unparalleled technical support are the basis of trouble-free culture rooms and meet every need in the general lab space.

Discover the new Milli-Q IQ 7000 series Ultrapure and Pure Water Systems

MilliSentials™ Laboratory Supplies

The MilliSentials™ line of general lab equipment is aimed at increasing your lab's efficiency through updated and innovative general lab equipment. Featuring modernized, enhanced devices that simplify routine tasks in the laboratory, these products help streamline your applications.

MilliSentials™ Lab Labeling System

For a complete laboratory labeling solution with labels that can withstand anything your lab throws at them, look no further than the MilliSentials™ Lab Labeling System. Label with ease with adaptable labels that can withstand different solvents and temperatures. Connect throughout the lab with a compact WIFI capable printer and custom-designed laboratory labeling software.

MilliSentials™ Aliquoting Pipette Controller

Pipette smarter with precise control over your aliquots. The MilliSentials™ Aliquoting Pipette Controller combines automatic aliquoting functions and exact control over liquid dispensing in a single device. With an ergonomic design, the MilliSentials™ Aliquoting Pipette Controller enhances your liquid handling.

MilliSentials™ Vortexer

Mixing liquid samples is a staple of every laboratory protocol. With the MilliSentials™ Vortexer, the modern, compact design meets with powerful agitation to accommodate liquid samples of all sizes. The state-of-the-art vortexer provides powerful agitation at a reasonable price while minimizing bench space.

Creating extracellular conditions as similar as possible to those that exist in vivo is critical for successful, relevant cell culture. To ensure a consistent environment throughout your experiment requires well-characterized materials and high-quality products. From sterile media to cell culture inserts and flasks, we have the tools for optimal cell growth.

Cell Culture Media

Support the growth of your cells with comprehensive classical and specialty media options, in ready-to-use liquid or reconstitutable formats.

Classical media selection includes:

- DMEM, RPMI 1640, MEM, Ham's, and more
- With or without L-glutamine
- Stablilized with L-alanyl-L-glutamine

Specialty media for specific cell types include:

- Pluripotent and multipotent stem cell media
- Primary, CHO, hybridoma, insect, and plant cell formulations

FBS and other serum

The most widely used growth supplement for cell culture media, serum, provides a mix of hormones, growth and attachment factors, buffering agents, and other nutritional components. Protect against disruptions to cell growth with high-quality cell culture fetal bovine serum (FBS) and other sera specific to your cell culture project and budget:

- **FBS Classic** suitable for general cell culture applications
- **FBS Premier** meet international standards with enhanced contamination testing, certification, documentation, and validation
- **FBS Select** suitable for specialized cell and tissue culture such as stem cells and cardiomyocytes
- **Human serum** suitable for transplantation and cell therapy, tissue engineering, and the expansion of mesenchymal stem cells from adipose tissue or human bone marrow
- **Other animal sera** suitable for immunodetection applications, such as Western blotting and immunohistochemistry

Supplements/Growth Factors Attachment Factors

Promote robust cell proliferation with our application-tested supplements

- Growth factors; including fibroblast growth factor (FGF) and transforming growth factor (TGF)
- Cell attachment factors; such as fibronectin, laminin, and collagen
- Cell culture supplements; including bovine serum albumin (BSA), amino acids, and more
- Antibiotics; such as pen-strep, ampicillin, and gentamicin
- Transfection reagents; including Escort™ lipid reagents, Roche® X-tremeGENE™ transfection reagents, and more.
- Roche® Reagents; such as epidermal growth factor, transforming growth factor, laminin, and more.

Cell dissociation reagents

Our dissociation reagents include trypsin and other enzymes, plus nonenzymatic reagents like EDTA and gentler solutions to enable safe, effective detachment in more fragile culture systems.

- Trypsin
- StableCell™ Trypsin
- Accumax® and Accutase® solutions
- ECM-digestion enzymes

General reagents for cell culture

Reliable, quality-controlled chemical reagents and tools are critical for consistent success of your cultures—for use in growth formulations, the preparation of everyday buffers, gels, and other lab solutions, and for monitoring the health of your cultures:

- Salts
- Agarose
- Detergents
- Carbohydrates
- Millicell® Disposable Hemocytometers

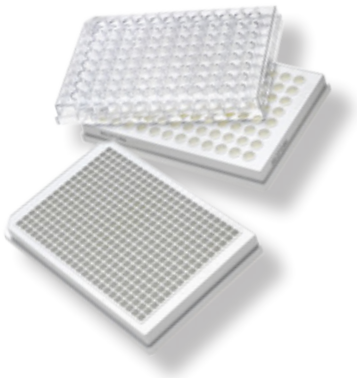
Specialty Culture Inserts and Plates

Promote cell growth in the 2D environment with our wide range of specialty cultureware. Our portfolio includes everything from chamber slides to membrane-based inserts and plates. Millicell® cell culture inserts and plates provide cells access to media from both the apical and basolateral surfaces to closely mimic what occurs *in vivo*.

To recapitulate diverse and optimized growth environments, choose from Millicell® inserts (standing, hanging, organotypic) and plates (24 or 96-well). Our extensive variety of membranes and filters include:

- HA inserts
- PCF inserts and plates
- PET inserts and plates

MultiScreen® plates (96- and 384-well) ensure compatibility sensitive detection and imaging systems. With diverse configurations, MultiScreen® plates are perfect for varied media formulations and solvents. These filter plates are automation compatible and available for:



- Chemiluminescent and fluorescent screening assays
- Sample preparation and storage
- ELISA and flow cytometry assay
- Enzyme and receptor ligand binding assays
- Cell migration, invasion, and chemotaxis assays

Product customization is available including barcodes, membrane selection, and packaging.

Corning® Cultureware and Consumables

Support your cultures with a comprehensive line of high-quality cell culture solutions and consumables from Corning® including serological pipettes, flasks, and dishes:

- Corning® CellBIND® surface culture dishes
- Corning® Osteo Assay surface multiwell plate
- Corning® Ultra-Low attachment cell culture flasks

3D Cell Culture Tools and Supplements

Advanced 3D cell culture techniques, such as tumor spheroids, stem cell organoids, and tissue engineering via 3D bioprinting, can more closely model in vivo cellular responses. These improved 3D cell culture models accurately replicate the natural tissue environment and provide more meaningful and impactful scientific conclusions.

Specialty 3D Culture Media

To maintain a healthy in vivo environment, each 3D organoid cell line requires a unique set of quality, serum-free media. Our offering of specialty 3D tissue culture media includes:

- DMEM/F12
- N2
- N27
- L-WRN and more

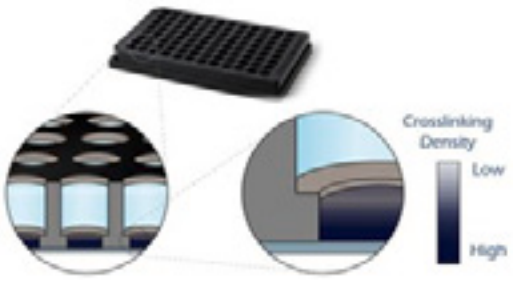
3D Culture Plates and Scaffolds

In vivo, mammalian cells grow in complex, three-dimensional environments. The chemical composition and 3D shape of the extracellular matrix (ECM) that surrounds the cell dictates many of its physiological responses. Our 3D cell culture portfolio provides the tools and scaffolds to facilitate the growth of cells in a 3D environment:

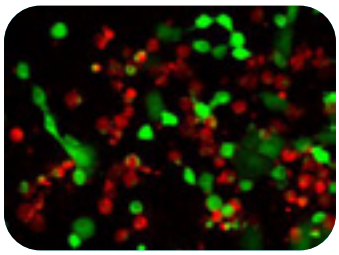
- Nanofiber, collagen, polystyrene and polycaprolactone scaffolds
- ECM and MaxGel™ Human ECM Hydrogels
- Tissue Specific dECM Hydrogels
- TrueGel3D® Hydrogels
- ECMatrix™ Laminin Substrates

For high throughput testing projects and other processes where the sample preparation of hydrogels is difficult and unsuitable, hydrogel culture plates are necessary. Researchers can proceed directly with seeding cells without any hydrogel preparation – after cell seeding, users can establish a viable 3D culture environment within a few days.

- Cytosoft® Elastic Modulus Plates
- TrueGel3D® HTS Hydrogel Plates



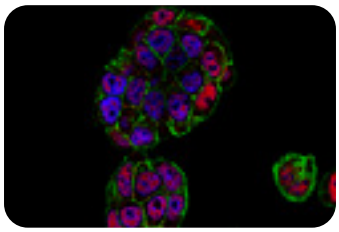
Cell analysis allows researchers to understand and quantify cell health and function. From cell quantitation to live cell imaging and analysis, count on our wide range of technologies to help you with any stage of cellular analysis.



Cell Assays

Our convenient kits are designed to boost efficiency and enhance reproducibility while monitoring cellular health. These quantitative and optimized cellular activity assays measure:

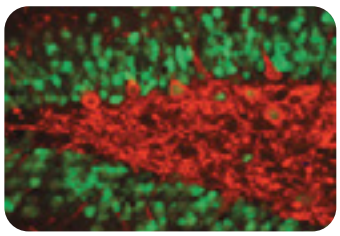
- Cell viability and proliferation
- Toxicity and apoptosis
- Oxidative stress
- Mycoplasma detection and elimination, and more



Roche® Cellular Assays

Roche® cellular analysis assays ensure that every step of monitoring cell health and activity is as efficient and robust as possible. Our Roche® partnership produces many quality products, including:

- X-tremeGENE™ transfection reagents
- Liberase™ reagents and kits for cell isolation & separation
- Kits for inducing cell proliferation or measuring cell viability and cytotoxicity.



Live Cell Dyes and Reagents

Analyzing cellular events in real time can lead to new biological discoveries that were once unattainable using traditional cellular analysis techniques. Our live cell dye and reagents portfolio includes:

- PKH and CellVue® Fluorescent Cell Linker Kits; fluorescent membrane labeling of live cells over an extended period of time with no apparent toxic effects
- LentiBrite™ Fluorescent Biosensors; pre-packaged high-titer fluorescent lentiviral particles for the study of autophagy, apoptosis, cell structure, and more
- BrightCell™ Photostable media; live cell imaging cell culture media and supplements developed to protect cells from light-induced cellular damage

Antibodies

As a leading antibody developer, we provide antibodies of the highest quality, validated for use in diverse immunodetection applications including Western blot and flow cytometry, with many suitable for use in purification, ChIP, and multiplexed assays.

ColorWheel® Flow Cytometry Antibodies and Dyes

Setting up successful flow cytometry experiments involves considering many factors such as instrument and dye compatibility, optimal antigen expression to dye brightness ratios, and more. ColorWheel® flow cytometry antibodies, dyes, and isotype controls use an oligo-based proprietary technology designed to minimize the added complications from these factors, bringing simplicity to your flow cytometry workflow without having to compromise on quality.

Benefits include:

- **Simplicity:** 3-step reagent prep protocol with < 5 minutes of hands-on time
- **Flexibility:** pair any ColorWheel® dye to any ColorWheel® antibody
- **Sustainability:** 5+ year shelf life with no preservatives

ZooMAb® Recombinant Antibodies

Highly reproducible antibodies are crucial for reliable results. Our ZooMAb® recombinant antibodies represent a new generation of monoclonal antibodies that are specifically engineered using our proprietary technologies to provide state-of-the-art consistency and applications performance.

ZooMAb® antibodies are:

- Designed with user-friendly formulation, handling, and storage features
- Validated in multiple immunoassay applications
- Highly reproducible with superior specificity and affinity

The Next Phase in Cell Monitoring

Your cell culture workflow wouldn't be complete without the tools to help you monitor your cells. With the Scepter™ 3.0 and Millicell® DCI and other connected lab instruments, you can stay connected to your cells and gain access to your data with simplicity and ease.

Scepter™ 3.0 Automated Cell Counter

From monitoring cell population during growth to normalizing cell density, simplify your cell counting with an automated, ergonomic, hand-held device—without leaving the culture hood.

The Scepter™ 3.0 instrument is the next generation in cell counting:

- Coulter-based accuracy that enables precise cell counts in less than 30 seconds
- No sample prep, dedicated reagents or hazardous dyes
- Wirelessly transfer results from your instrument directly to your computer or printer

Eliminate the errors inherent in manual cell counting and reduce the possibility of compromise to downstream assays.

Millicell® DCI Digital Cell Imager

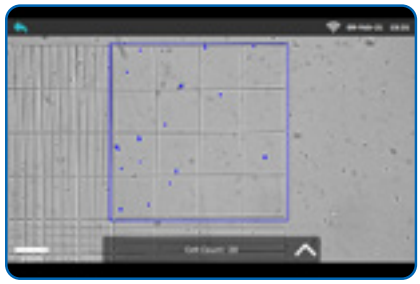
Assess the health of your cell cultures with efficiency and cut out the repetitive daily techniques that are associated with cell passaging.

The Millicell® DCI instrument streamlines cell culture measurements with advancements such as:

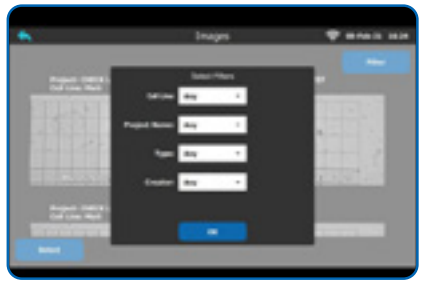
- An intuitive interface that automates analysis
- In-vessel measurement of confluency and estimated cell counts
- Adherent cells, spheroids, and organoid culture analysis
- Reduced user bias

Easily access your data outside of the lab for greater flexibility. With Millicell® Cloud Services, images are automatically transferred from the Millicell® DCI instrument and stored to the Cloud via Wi-Fi. Your data can then be viewed, sorted, and re-analyzed as desired using the web-based application.

Slide bars allow you to quickly adjust **measurements** based on cell size and mask area



An automatic grid finder can be used for hemocytometer-based measurements



Annotate and organize your projects to quickly find and sort data later

CellASIC® ONIX2 Microfluidic System

Amplify your live cell imaging capabilities with a dynamic, easy-to-use analysis system that enables precision control of the cell culture environment.

Program automatic changes to gas, temperature, media and more, or add/withdraw treatments without disturbing culture as you watch cells react in real time. Microfluidic plates enable unprecedented imaging of both adherent and suspension cells—from microbes to yeast and countless mammalian phenotypes.

Merck has brought together the world's leading Life Science brands, so whatever your life science problem, you can benefit from our expert products and services.

Millipore®

The Millipore® portfolio of Merck offers an ecosystem of industry-leading products and services, spanning preparation, separation, filtration and monitoring – all of which are deeply rooted in quality, reliability and timetested processes. Our proven products, regulatory and application expertise are a strong foundation you can rely on to consistently perform at the highest level.

Sigma-Aldrich®

The Sigma-Aldrich® portfolio of Merck offers a strong and ever-expanding offering of lab and production materials. Through our technical support and scientific partnerships, we help connect our customers with a whole world of progress.

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To place an order or receive technical assistance

In the U.S. and Canada, call toll-free 1-800-521-8956
For other countries across Europe and the world, please visit: **SigmaAldrich.com/offices**
For Technical Service, please visit: **SigmaAldrich.com/techservice**

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