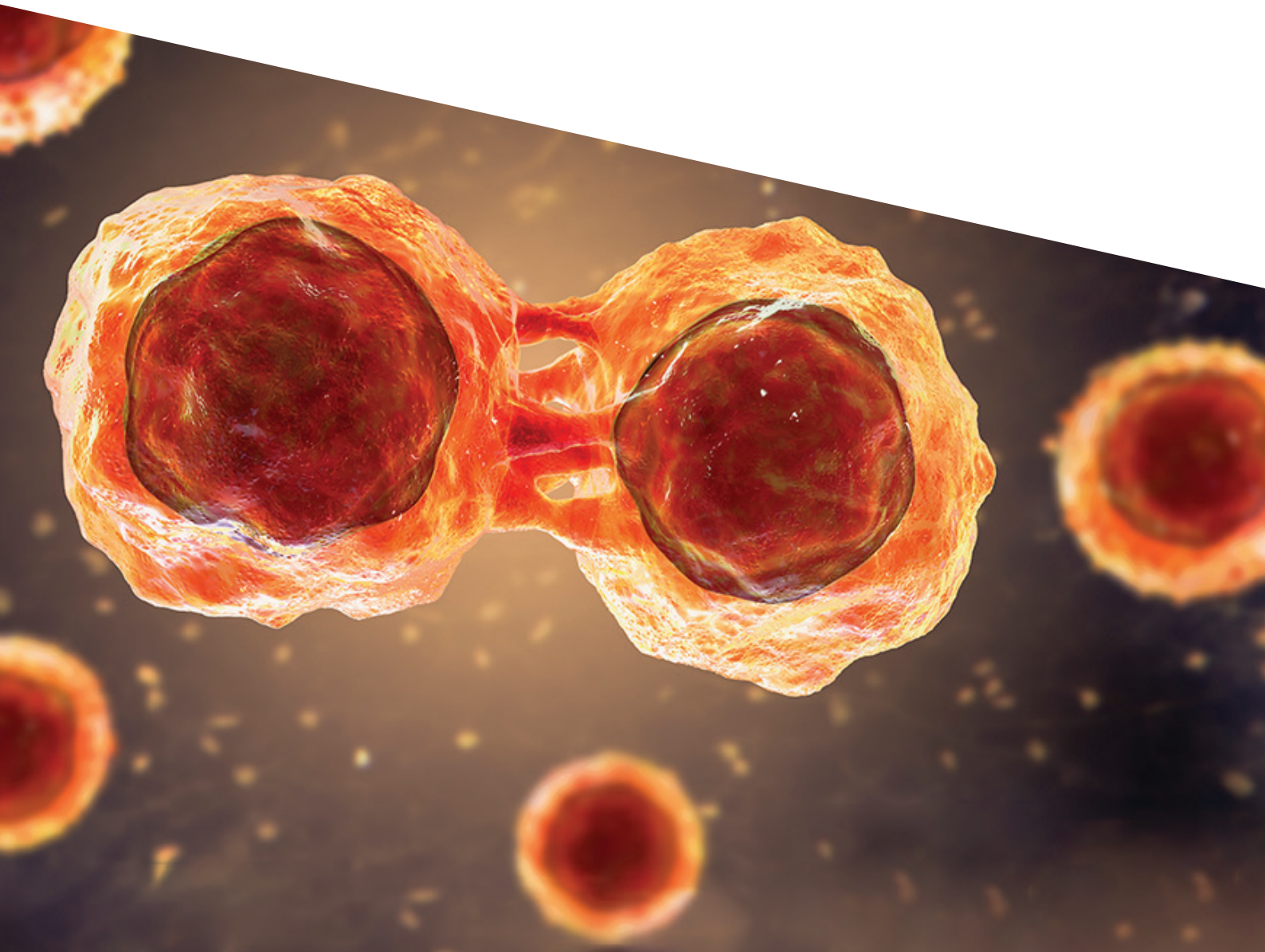
Your Partner in Cell Research

OLS®
OMNI Life Science



Unraveling the Potential of Stem Cells

Opportunities for New Medical Treatments

From Stem Cell Dissociation to High-Content Imaging
Comprehensive workflow to assure your success

- **Tissue Grinder and Dissociator:** Stem cells are isolated using the Tissue Grinder and Dissociator. Since stem cells are found in diverse tissues in low cell numbers, optimization steps may be necessary here. Alternatively, this process can be substituted by using induced pluripotent stem cells (iPSCs) as starting material..

- **CASY^{VIVO} Cell Counter & Analyzer:** Count and analyze a wide range of cells, sizes and shapes from large stem cell aggregates to small bacteria. The counter provides unmatched precision at high speed.

- **Stem Cell Maintenance Kit:** A complete, pluripotent stem cell maintenance medium, including HiDef-B8 Supplement and DMEM/F12 Medium. The kit is designed for maintenance and expansion of human pluripotent stem cells (PSCs) in an undifferentiated state.

- **Neural Cell Culture and Growth Kit:** The convenient kit enhances cell survival, growth, and neuronal differentiation, serving as superior alternative to the N-1 Bottenstein formulation. The kit ensures consistency and reproducibility in experimental conditions.

- **CERO 3D Incubator & Bioreactor:** Expansion of stem cells, their differentiation or long-term culture of spheroids/organoids are conducted by their cultivation in the CERO 3D Incubator & Bioreactor.

- **CEROplates:** Further growth can be accomplished by cultivation of spheroids/organoids in ultra low-attachment CEROplates. The plates are available as 6-, 24-, 96-, and 384-well plate format.

- **SPAchip Detection Kits:** Accurately measure intra-cellular pH, Ca2+ levels, and OH radicals in real time through fluorescence intensity changes with multiple fluorescent probes, providing valuable insights into cellular processes.

- **CellRaft Air System:** Effectively generate highly viable single cells and monoclonal cell colonies. Monoclonality is confirmed by time-course imaging. Cells and colonies of interest are automatically transferred into a 96 well plate without the use of fluidics.

- **WiScan Hermes High Content Imaging:** Publication-quality images of spheroids/organoids can be taken at a high speed by using the WiScan Hermes High Content Screening Workstation.

TIGR Tissue Grinder and Dissociator

Single cell dissociation for tissue models

- Enzyme free
- Integrated cell strainer
- Single pack tubes

The TIGR Tissue Grinder and Dissociator provides a unique and effective concept to generate single cells. Enzyme-free and purely mechanical, it avoids cleavage and abrasion of membrane proteins, thus improving cell viability. The dissociation needs less than 5 min., 4 slots, which can be operated independently, allow high-throughput tissue dissociation.

CASY^{VIVO} Cell Counter and Analyzer

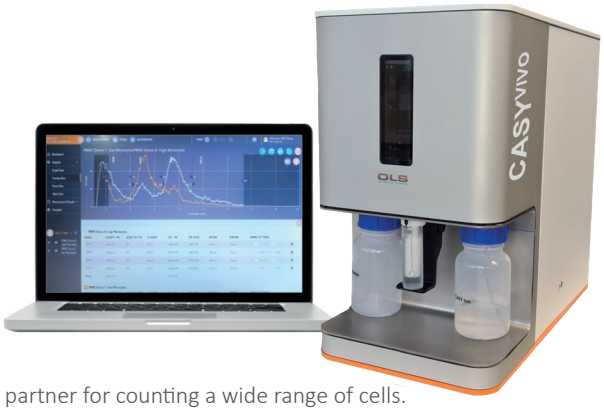
Accurate counting of different cells and sizes

- Accurate and reproducible
- Simple and fast
- Cell number and volume

Stem cells or cell lines, primary cells or PBMCs, even yeast or bacteria are counted in seconds. Each time an accurate and reproducible result will be gained that includes cell concentration, -volume, -viability or -aggregation. Whether you have precious samples or like to reduce manual handling, CASY^{VIVO} offers the solution.

CASY^{VIVO}'s advanced technology is a combination of Electronic Sensing Zone improved by Pulse Field Analysis. This unique combination enables the detection of each cell volume analyzed, independently of the cell size or shape. As a result, CASY^{VIVO} provides accurate cell number as well as the cell volume. These outstanding capabilities make CASY^{VIVO} extremely valuable when working with challenging samples like induced Pluripotent Stem Cells (iPSCs).

Wouldn't it be great if you could simply analyze your iPSCs without the need to stain or singularize cells? Well, you can do exactly that with the CASY^{VIVO}. Use a small volume of your cells and measure.



Ideal partner for counting a wide range of cells.

Without prior singularization steps CASY^{VIVO} precisely detects the single cell volume and automatically calculates the correct cell number - even for samples with highly aggregating cell types.

Additionally, CASY^{VIVO} delivers valuable insights into cell quality - metrics like cell size, peak, and homogeneity help to identify subtle changes.

Finally, CASY^{VIVO} uses its unique Electronic Current Exclusion (ECE) to distinguish between viable and dead cells, providing precise viability information. This information perfectly matches results you may generate using a Flow Cytometer but without the need to stain.

Stem Cell Maintenance Kit

Enhanced survival and growth of stem cells

- Animal-free, serum-free, weekend-free
- Maintainance of PSCs
- Improved survival and growth

Stem Cell Maintenance Kit

This optimized, serum-free medium is designed for maintenance and expansion of human pluripotent stem cells (PSCs) in an undifferentiated state.
The kit includes DMEM/F12 Medium, Highly Stable and the HiDef-B8 Supplement that ensures improved growth and survival.
The unique formulation offers a flexible feeding schedule (including weekend-free maintenance) and the ability to choose the matrices and passaging methods that best suit specific applications.

Next to the convenient Stem Cell Maintenance Kit, the HiDef-B8 Supplement and the DMEM/F12 Medium, Highly Stable are offered individually.

Stem Cell Growth	Volume	Art.No
Stem Cell Maintenance Kit* HiDef-B8 400X Supplement and DMEM/F12, Highly Stable	1x 500 ml + 1x 1.25 ml 6x 500 ml + 6x 1.25 ml	990803 990803-6
DMEM/F12 Medium, Highly Stable	1x 500 ml 6x 500 ml	990801 990801-6
HiDef-B8 Supplement only, 400X	1.25 ml 6x 1.25 ml	LSS-204-1 LSS-204-6
Ready-CEPT Cell Viability Enhancer	200 µL 12x 200 µL 12x 10 µL	LSS-301-200-1 LSS-301-200-12 LSS-301-10-12

* The Stem Cell Maintenance Kit includes DMEM/F12, Highly Stable and HiDef-B8 400x Supplement. To receive the complete medium just add 1.25 mL (1 vial) HiDef-B8 400X Supplement to 500 ml of DMEM/F12, Highly Stable.

Neural Cell Culture and Growth Kit

Survival and growth of neural cells

- Animal-free
- Improved survival
- Alternative to the N-1 Bottenstein

Neural Cell Culture and Growth Kit

Survival and growth of neural cells can be facilitated by the Neural Cell Culture and Growth Kit. This convenient kit includes DMEM/F12 Medium, Highly Stable and the HiDef-N-2 Neural Supplement.

The HiDef N-2 Neural Supplement has been historically shown to improve survival and expression of neuronal cells, including neurons in primary culture, and serves as an effective substitute for the N-1 Bottenstein formulation. It is used in various applications in research as differentiation of stem cells into neural cells or culture and expansion of neural progenitor cells. The HiDef N-2 Neural Supplement ensures consistency and reproducibility in experimental conditions, reducing variability associated with undefined components.

Neural Cell Culture	Volume	Art.No
Neural Cell Culture and Growth Kit HiDef-N2 100X Neural Supplement and DMEM/F12, Highly Stable	1x 500 ml + 1x 5 ml 10x 500 ml + 10x 5 ml	990804 990804-10
DMEM/F12, Highly Stable	1x 500 ml 6x 500 ml	990801 990801-6
HiDef N-2 Neural Supplement only, 100X	5 ml 10x 5 ml	LSS-501-1 LSS-501-10

STEMin1 System for Human Mesenchymal Stem Cells (MSC)

Superior cell expansion capacity and faster growth

Serum-free, xeno-free system	Description	Volume	Art.No
STEMin1 Medium	Maintains MSCs in their spindle-shaped, fibroblast-like morphology	500 ml	AL520-500ML
STEMin1 Attachment Solution	Ready-to-use substrate for attachment and expansion	10 ml	TCL206-10ML
STEMin1 Dissociation Solution	Defined dissociation solution fro MSCs	100 ml	TCL208-100ML
STEMin1 Neutralizer	Terminates disaggregation of by neutralizing	100 ml	AL520-500ML
FREEZin1 Cryopreservation	Cryopreservation medium for MSCs	50 ml	TCL098-50ML

CERO 3D Incubator and Bioreactor

Empowering advanced 3D cell culture and tissue engineering

- Intuitive
- Standardized
- Flexible
- Modular

The CERO 3D Incubator & Bioreactor is a new, revolutionary instrument creating an optimal cell culture environment. It offers a special 3D cell culture technology that monitors and controls temperature, pH and carbon dioxide levels. Indeed, this is an ever-evolving a state-of-the-art, dynamic culture system that accelerates your processes, reduces costs and hands-on time and allows multiplexing. It provides optimal nutrition, and gas diffusion thus increasing size and lifespan of your cultures.

CERO 3D Incubator and Bioreactor ensures up to 100.000 organoids in one CEROtube in optimal cell culture conditions

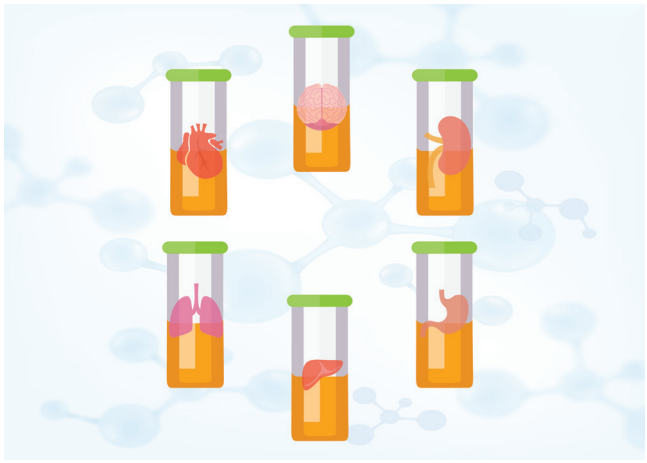
Stem Cell Applications

The CERO 3D Incubator and Bioreactor allows for:

- **Scalable expansion:** achieve high cell density and viability for various stem cell types, accelerating production for therapeutic uses and research.
- **Efficient differentiation:** supports directed differentiation into diverse cell types (cardiomyocytes, neural cells, hepatocytes, macrophages, microglia, etc.), aiding cell therapy development.

Benefits:

High cell density and viability
Scalable production for clinical applications
Cost-effective manufacturing of stem cells



CERO 3D enables the scalable expansion and differentiation of stem cells, and the cultivation of diverse cell models e.g. heart, kidney, liver

Scan the QR code to see the success stories of the CERO 3D Incubator & Bioreactor

Where precision meets innovation - boost your 3D cell models

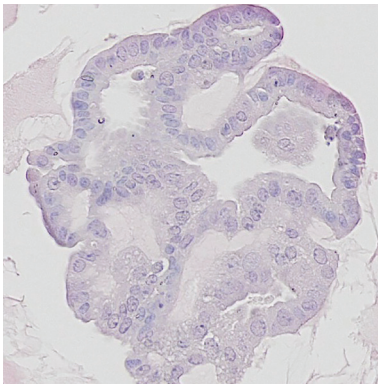
Efficient Generation of Organoids

CERO 3D provides an ideal environment for the cultivation and expansion of organoids derived from both iPSCs and adult stem cells, enabling researchers to create complex 3D models of various tissues and organs, including stomach organoids.

Benefits:

Enhanced organoid viability and maturation
Supports various cell lines
Improved reproducibility
Cost-effective production of organoids

Gastric Organoids



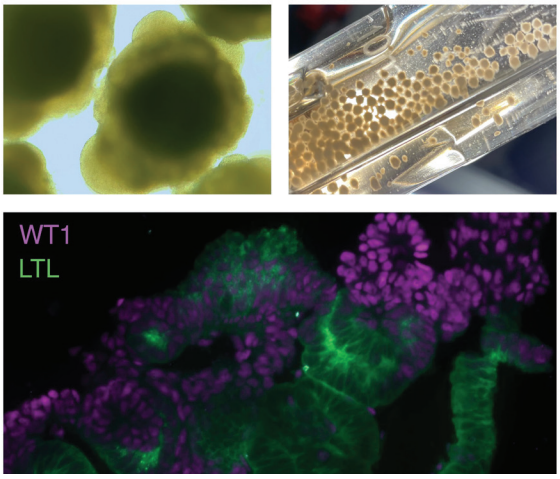
HE staining of gastric organoids showing single layer of epithelia cells composed by the different cell types found in the stomach.

> ***"The generation of gastric organoids is a crucial step in the study of Helicobacter pylori infection and gastric carcinogensis. The CERO 3D Incubator & Bioreactor allows the generation in a much more efficient, reproducible, physiological and cost-efficient way compared to any other approach"***

Dr. Raquel Mejias-Luque
TUM, Germany

Kidney Organoids

The CERO 3D system enables efficient generation of iPSC-derived kidney organoids, by directly inoculating cells, eliminating the need for ultra-low attachment plates. During the cultivation in the CERO 3D, organoids from mature structures like proximal tubules (LTL-positive), and express key markers such as WT1, indicating kidney development.



iPSC-derived kidney organoids thriving in the CERO 3D bioreactor. *Courtesey: Prof. Schermer (Nephrolab Cologne, Kidney Research Center Cologne, KRCC), Germany*

! Find the perfect stem cell maintenance kit for improved survival and growth on page 4.

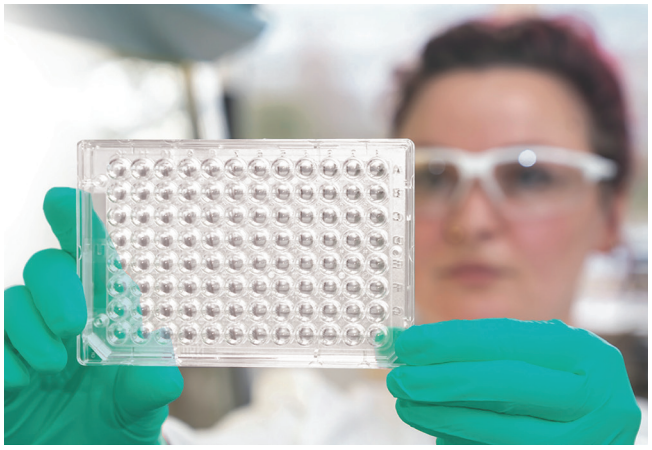
CEROplates, Ultra-Low Atttachment

Simple process for 3D aggregates

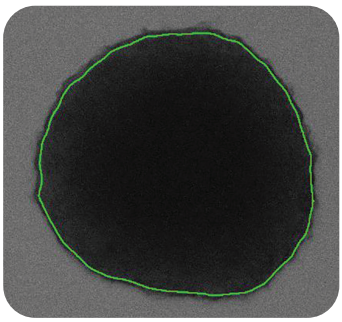
- Uniform spheroids
- Organoid formation
- 6, 24, 96 or 384 well plates

Designed to address the challenges of spheroid culture, CEROplate ultra-low attachment, offers unmatched performance and reliability, setting a new standard in three-dimensional cell culture.

The ultra-low attachment CEROplates, simplify the process for growing 3D aggregates. It features clear wells with U-bottom or flat-bottom to make sample monitoring simple. The unique well geometry of the microplate aids in the formation of an unattached, round-shaped, single spheroid or organoid in the center of each well. This allows to assay and analyze 3D aggregates in the same plate without transfer.



Different plate formats are available



Experience Fast and Reliable Spheroid Formation

CEROplate enables the rapid formation of uniform spheroids, often within just 2 to 24 hours, depending on the cell type.
CEROplate has been successfully tested with a wide range of cell lines, including challenging primary human hepatocytes, ensuring that even the most difficult cells can form spheroids with ease. Our product is sterile, endotoxin-free, and non-cytotoxic, making it a safe and effective choice.

CEROplate*	Unit	Art.No
6 well plate, flat-bottom	24x1 plate	2800113
24 well plate, flat-bottom	24x1 plate	2800112
96 well plate, U-bottom	6x4 plates	2800109
384 well plate, U-bottom	6x4 plates	2800111

*CEROplates are compatible with existing readers, imaging systems, liquid handling and automated workstations.

CellRaft AIR System
Cell Engineering and Colony Isolation

- Viability of monoclonal colonies
- Image-based proof of monoclonality
- Gently isolate clones without fluidics

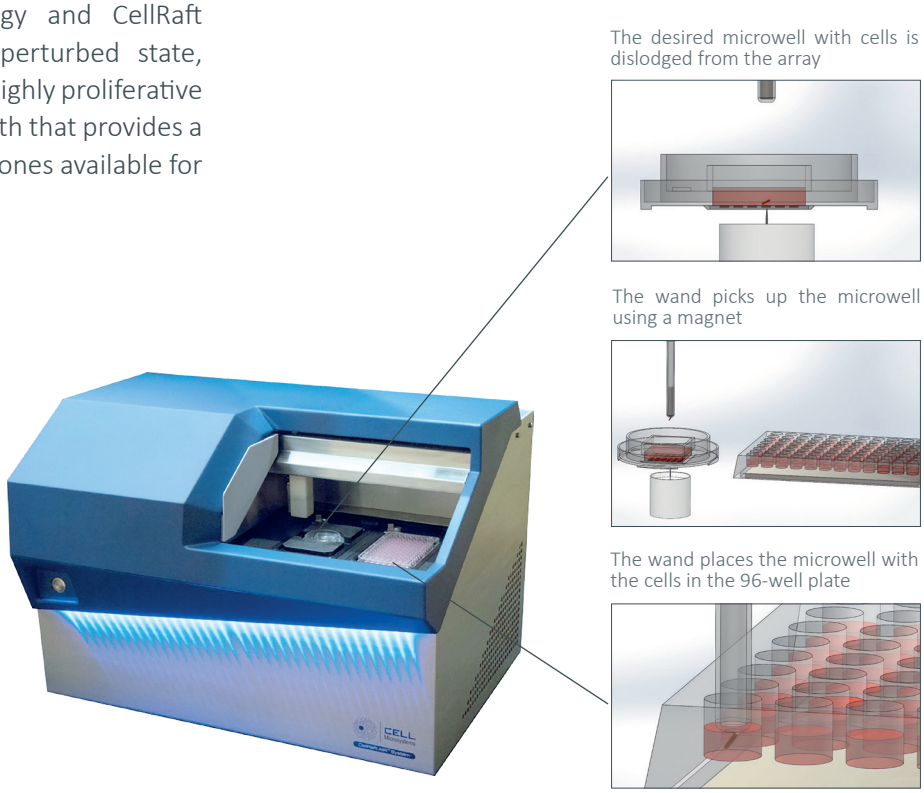
Generate phenotypically verified single cell-derived colonies in as little as 72 hours, with just 15 minutes of hands-on time, and 10 to 50x the number of clones compared to traditional methods. Cells share and enrich a common culture media while remaining separated. This contiguous media approach is much more favorable and dramatically increases cell viability.

Eliminate the need for trypsin, fluidics, or limiting dilution while getting more clonal colonies, even in difficult to clone cells.

The CellRaft AIR System is an integrated platform that uses proprietary CellRaft technology and CellRaft Arrays to maintain cells in an unperturbed state, leading to improved viability of cells, highly proliferative colonies, and superior clonal outgrowth that provides a dramatic increase in the number of clones available for downstream applications.

Applications:
Monoclonal cell line development
Stem cells e.g. iPSC
CRISPR gene editing
Organoids
Single-cell genomics

- Obtain 10 - 50X more viable monoclonal colonies or organoids.
- Grow single cells in a flask-like environment, without physically separating them, eliminating perturbation to cell physiology and ensuring viability and vitality of single cells as they develop into clones.
- Identify cells of interest using powerful, label-free brightfield analysis software with user-defined parameters.
- Automatically and gently isolate CellRafts containing cells or colonies of interest for downstream endpoint analysis or clonal expansion.

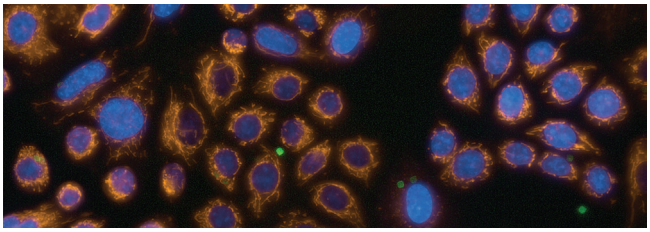


Rapid imaging, software-guided identification and automated isolation by the CellRaft AIR system - an integrated platform

SPAchip technology
Live monitoring inside a living cell

- Works in living cells
- Non-toxic
- Monitoring of pH, Ca, OH-radicals

The SPAchip technology, designed for live monitoring inside a cell, represents a cutting-edge advancement in cellular biology and bioengineering. SPAchips are intracellular silicon microchips functionalized with several biomolecules (fluorescence probes, proteins, peptides, and other). SPAchips can be introduced directly into living cells to provide real-time data on various intracellular processes, such as ion concentrations, pH levels, temperature, and molecular interactions. These chips are typically made from biocompatible materials to avoid cellular disruption and enable long-term monitoring without harming the host cell.



SPAchip measuring pH and calcium simultaneously

The SPAchip® Difference: A Leap in Live Cell Analysis

Multiplex Capability: SPAchip enables multiplexing with same-wavelength probes, transforming cellular metabolism studies.

Surface Functionalization: Allows diverse bio-molecules to be printed on SPAchips, supporting in-depth tracking of cellular activity.

Non-Invasive: Non-toxic for safe, long-term intracellular measurements.

Eco-Friendly: Reduces plastic and consumable use for sustainable lab practices.

Versatile Application: Integrates easily with existing lab setups, supporting varied applications.

Name	Description	Art.No
CytoCHECK SPAchip pH red single detection kit	Measures intracellular pH levels	S-001-PHR
CytoCHECK SPAchip pH green single detection kit	Measures intracellular pH levels	S-001-PHG
CytoCHECK SPAchip pH dual detection kit	Red and green emission to measure intracelluager pH levels	D-001-PHGR
CytoCHECK SPAchip Calcium single detection kit	Measures intracellular calcium levels	S-002-CAG
SpheroCHECK SPAchip pH green single detection kit	Monitoring of intracellular and extracellular pH in living 3D models such as spheroids.	SS-001-PHG
CytoCHECK SPAchip Calcium & pH multi detection kit	Simultaneous monitoring of both cytosolic calcium and intracellular and extracellular pH levels	M-001-PC
CytoCHECK SPAchip OHrad ROS single kit	Real-time monitoring of intracellular reactive oxygen species (ROS)	S-003-ROSG

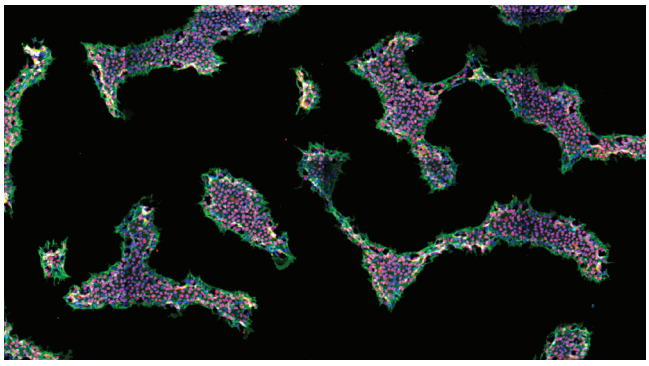
WiScan Hermes High-Content Imaging System

Ideal solution for high-content and high-throughput screening

- High-throughput
- High quality images
- Flexible and versatile

Dedicated to high-content imaging and analysis for image-based assays in cell biology studies and drug discovery processes, the High-Content Imaging System brings publication quality images at high-throughput speed to the research lab. Its built-in applications are extremely easy to use, and are operated at the push-of-a-button. Hermes is a sophisticated and flexible system, offering up to 7 fluorescence colors, bright field option, and a large range of air objectives and oil objectives. The system is ideal for a large variety of applications, including phenotypic screening, zebrafish models, spheroids and 3D models.

WiScan Hermes System easily generates publication-quality images



Human induced pluripotent stem cell colonies labeled for pluripotency markers, which facilitate quantification of the population of cells.
Red= Oct4 pluripotency marker
Blue= DAPI
Green= SSEA-4 protein

Spheroids and 3D imaging

- Capture properly focused images of spheroids in an ideal growth environment in U-shape bottom plates
- Easily spot spheroids using unique methodology of rapid scanning for spheroid localization
- Simple and labour reducing automated analysis of spheroid relevant features
- Monitor spheroid growth over the entire plate using plate view
- Classify spheroids of specific, desired features using sub-population tool
- Apply live/dead spheroid assay to monitor viability of 3D stem cell and tumour spheroids
- Visualize spheroid morphology over a range of depths using flexible multi-plane definitions

Fast, automated imaging with oil immersion objectives, shorter exposure, brighter image, higher resolution

- Super-resolution radial fluctuations (SRRF) live-cell imaging
- Fluorescence in-situ hybridization (FISH)
- Microbiology, virology & yeast studies
- Spot / foci / granule visualization
- Mitochondria, and focal adhesion imaging
- Unique hardware automatically adds immersion oil to objectives
- No user intervention; no oil spilling
- Autonomous, rapid image acquisition for:
  - Full-plate scanning
  - Time-lapse imaging of live cells
- Optimized autofocus, X, Y, Z motion and long-duration oil capsules for easy maintenance

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