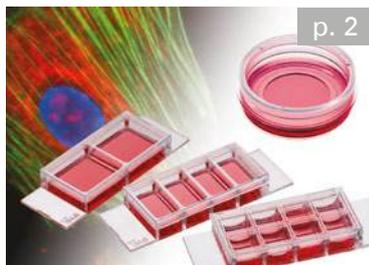


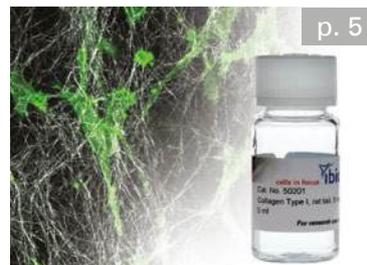
# The Product and Experiment Guide

Solutions for Your Research



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**CELL CULTURE & MICROSCOPY**



p. 5

**REAGENTS**



p. 6

**LIVE CELL IMAGING**



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**FLOW ASSAYS**



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**MIGRATION & WOUND HEALING**



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**CHEMOTAXIS ASSAYS**



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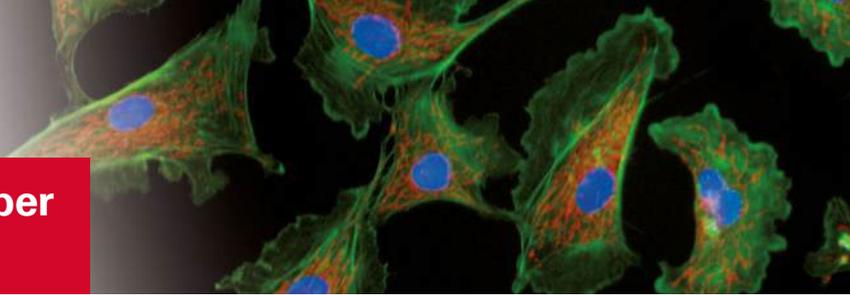
**ANGIOGENESIS ASSAYS**



p. 15

**IMMUNO-FLUORESCENCE**

# Find the Ideal Imaging Chamber for Your Application



## IMMUNO-FLUORESCENCE



GLASS SLIDE

### 3 Well | 8 Well | 12 Well Chamber, removable

Removable silicone chambers on a microscope glass slide for cell culture and immunofluorescence, suitable for upright and inverted microscopy and long-term storage

p. 15



GLASS COVERSIP

POLYMER COVERSIP

### μ-Slide VI<sup>0.5</sup> Glass Bottom | μ-Slide VI<sup>0.4</sup>

Slides with 6 parallel channels providing ideal optical conditions for immunofluorescence, available with different channel heights and coatings; with an ibidi Polymer Coverslip or a glass bottom

## MIGRATION & WOUND HEALING



POLYMER COVERSIP

### Culture-Insert 2 Well | 3 Well | 4 Well

Silicone inserts with a defined cell-free gap for wound healing, migration, 2D invasion assays, and co-cultivation of cells; available as individual inserts in a μ-Dish or as 25 pieces in a transport dish for self-insertion



p. 12



POLYMER COVERSIP

### Culture-Insert 2 Well 24

The complete solution for high throughput wound healing and migration experiments

## ANGIOGENESIS



GLASS COVERSIP

POLYMER COVERSIP

POLYMER COVERSIP

### μ-Slide Angiogenesis | μ-Plate Angiogenesis 96 Well

A slide with ibidi Polymer Coverslip or a glass bottom for tube formation assays, 3D cell culture, and immunofluorescence; also available with 96 wells for high throughput applications

p. 14

## CHEMOTAXIS



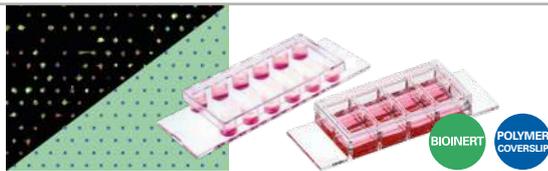
POLYMER COVERSIP

### μ-Slide Chemotaxis

A slide with a specialized geometry for chemotaxis assays with fast or slow migrating cells in 2D or 3D; stable gradients for more than 48 hours

p. 13

## SINGLE-CELL ASSAYS



BIOINERT

POLYMER COVERSIP

### μ-Slides With Single-Cell μ-Pattern

One cell per spot: Ready-to-use micropatterned slides with ideal spacing for single cell assays (e.g., CAR-T cell activity assay)

## TRANSMEMBRANE



POLYMER COVERSIP

### μ-Slide Membrane ibiPore Flow

A slide with a porous glass membrane and excellent optical properties, for transport and transmigration studies under static and flow conditions

## HIGH THROUGHPUT



POLYMER COVERSIP

GLASS COVERSIP

POLYMER COVERSIP

### μ-Plate 24 Well | 96 Well

Plates with a flat, clear bottom for brilliant images in high throughput cell microscopy applications; plate dimensions meet ANSI/SLAS (SBS) Standards

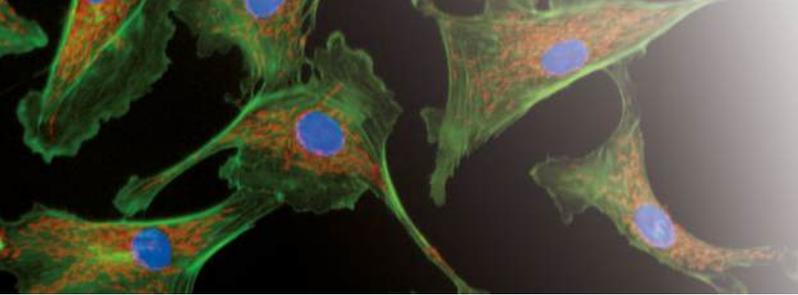
## STICKY SLIDES



STICKY

### sticky-Slide 8 Well<sup>high</sup> | 18 Well | 1 Luer | Chemotaxis | VI<sup>0.4</sup>

Bottomless slides with a self-adhesive underside that allow the mounting of a variety of bottom materials



**μ-Slide 2 Well | 4 Well | 8 Well<sup>high</sup> | 18 Well**

Chambered coverslips that combine optimal conditions for cell culture, immunofluorescence, live cell imaging, and high-resolution microscopy; available with an ibidi Polymer Coverslip or a glass bottom



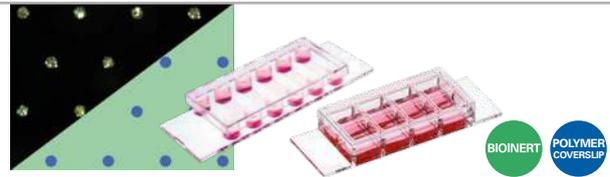
**μ-Dish Family**

A variety of petri dishes for cell culture and high-end microscopy; available with an ibidi Polymer Coverslip or a glass bottom; gridded dishes for cell location and counting also available



**Bioinert μ-Slides and μ-Dishes**

Labware with a completely non-adherent surface for culturing spheroids, organoids, and suspension cells



**μ-Slides With Multi-Cell μ-Pattern**

Multiple cells on one spot: Ready-to-use micropatterned slides with ideal spacing for spheroids and organoids



**μ-Slide I Luer 3D**

A slide with one channel and three wells for culturing cells on a 3D gel matrix under flow



**μ-Slide Spheroid Perfusion**

A perfusable channel slide with 3 x 7 wells for long-term spheroid cultivation



**μ-Slide III<sup>3D</sup> Perfusion**

A flow slide for optimal nutrient supply during long-term cell or organoid culture

**Collagen Type I, Rat Tail**

High quality collagen for 3D gels, scaffolds, and coatings



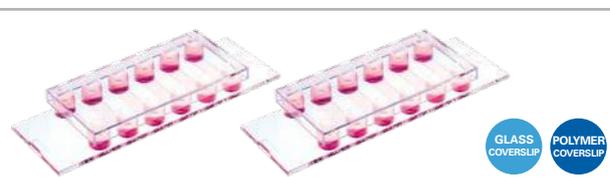
**μ-Slide I Luer**

Flow channel slides with an ibidi Polymer Coverslip or a glass bottom, available with different heights and coatings



**μ-Slide γ-shaped**

A flow channel slide for bifurcation studies and simulation of branching blood vessels



**μ-Slide VI<sup>0.5</sup> Glass Bottom | μ-Slide VI<sup>0.4</sup>**

Slides with 6 channels for parallel flow assays and high-resolution microscopy, available with different channel heights and coatings; with an ibidi Polymer Coverslip or a glass bottom

Get inspired by successful ibidi customers: Explore **publications** on each product page.



Order your **free sample** and test the ibidi microscopy chambers with your experiments.

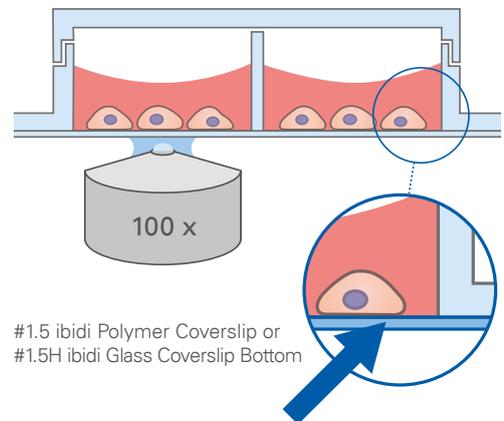


# The ibidi Imaging Chambers

## A Bottom and Surface Guide

### The Principle of Imaging Chambers: The Coverslip Bottom

The outstanding characteristic of the ibidi  $\mu$ -Slides,  $\mu$ -Dishes, and  $\mu$ -Plates is their thin coverslip bottom, which has excellent features for high-end microscopy applications. In comparison, the bottom of standard cell culture plastics is about 1 mm thick—which is more than 5 times the thickness of the coverslip and therefore not ideal for imaging.



#### ibidi Polymer Coverslip

POLYMER  
COVERSLIP

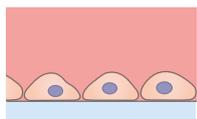
The ibidi Polymer Coverslip Bottom is suitable for various imaging techniques up to highest resolution. With a standard #1.5 coverslip thickness of 180  $\mu\text{m}$  (+10/-5  $\mu\text{m}$ ), it meets all optical requirements for microscopes. The ibidi Polymer Coverslip is compatible with a variety of immersion oils, which are specified at [ibidi.com/oil](http://ibidi.com/oil).

#### ibidi Glass Coverslip

GLASS  
COVERSLIP

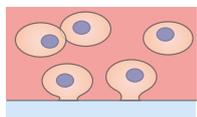
The ibidi Glass Coverslip Bottom was developed specifically for TIRF, super-resolution microscopy, and single molecule microscopy. However, it is also ideally suitable for standard imaging techniques. The D 263 M Schott borosilicate glass has a #1.5H thickness of 170  $\mu\text{m}$  (+/-5  $\mu\text{m}$ ) and unrestricted immersion oil compatibility.

#### Surfaces and Coatings for the ibidi Polymer Coverslip



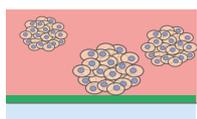
##### ibiTreat (Tissue Culture-Treated)

Excellent adhesion of adherent cells, hydrophilic surface with no need for any additional coating; optimal for everyday cell culture



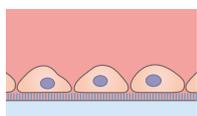
##### Hydrophobic, Uncoated Surface

Weak adhesion of adherent cells, suitable for the application of specific coatings



##### Bioinert Surface

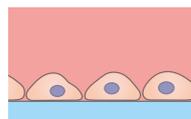
No adhesion of adherent cells or any bio-molecule, stable long-term passivation; ideal for spheroid and organoid culture



##### Coated Surface

Culture of adherent cells on a Collagen I, Collagen IV, or Poly-L-Lysine surface; available for selected  $\mu$ -Slides

#### Surfaces and Coatings for the ibidi Glass Coverslip



##### Glass Surface

Adhesion of adherent cells (coating might be required), ideal for special microscopy applications

Download a detailed  
Application Guide at:  
[ibidi.com/MicroscopyGuide](http://ibidi.com/MicroscopyGuide)



## ibidi Reagents

Highest Quality for Live Cell Analysis

### Collagen Type I, Rat Tail for 3D Cell Culture

- A non-pepsinized, native collagen solution with the highest quality grade
- Provides biological extracellular matrix (ECM) structures
- For use in various cell culture applications (e.g., 3D gels, scaffolds, and coating)



### LifeAct for Actin Visualization

- A versatile F-actin marker with unrestricted functionality in living cells
- Lowest potential interference with cytoskeletal dynamics *in vitro* and *in vivo*
- Choose from ibidi's broad LifeAct product portfolio: Plasmid, mRNA, Adenoviral and Lentiviral Vectors, Protein, and Stable Cell Line



### ibidi Mounting Medium for Immunofluorescence

- Ready-to-use for immunofluorescence assays using widefield fluorescence and confocal microscopy
- DAPI counterstaining and mounting combined in one single step; also available without DAPI
- Compatible with all ibidi labware



### ibidi Freezing Medium Classic

- A cell freezing medium with extremely high recovery rates
- No preliminary or sequential freezing required
- Serum-free—contains bovine serum albumin



### ibidi Immersion Oil for Microscopy

- For high-resolution microscopy using oil immersion objective lenses
- Lowest autofluorescence for excellent imaging quality in fluorescence microscopy
- Compatible with all ibidi products and all microscope brands



# Live Cell Imaging Under Physiologic Conditions

ibidi Stage Top Incubators

## Establish *in Vivo*-Like Conditions on Every Inverted Microscope

### *In Vivo*-Like Conditions

Fast and precise control of temperature, humidity, CO<sub>2</sub>, and O<sub>2</sub>

### Easy Installation and Use

Quick mounting on the microscope, just like a multiwell plate

### Microscope Compatibility

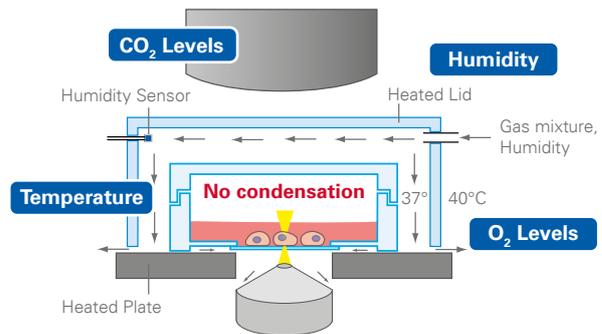
Fits to inverted microscopes that have a multiwell plate holder



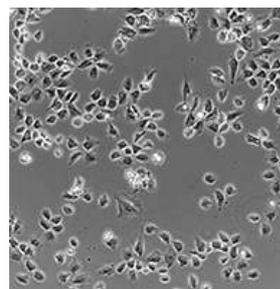
## The Patented ibidi Humidity Control

Constant levels of medium components are essential for reproducible cell behavior. Any evaporation increases the substance concentration and influences cellular functions.

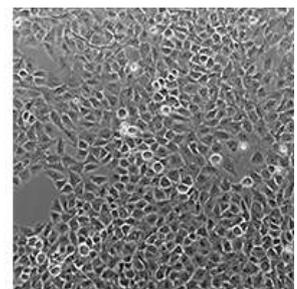
The ibidi Humidity Control ensures a constant and very high relative humidity (RH) level inside the ibidi Stage Top Incubator, thereby preventing evaporation. This unique and patent-protected technology actively humidifies the gas mixture in a fast and reliable way before it enters the Stage Top Incubator.



Download a detailed Application Guide at: [ibidi.com/LiveImagingGuide](http://ibidi.com/LiveImagingGuide)

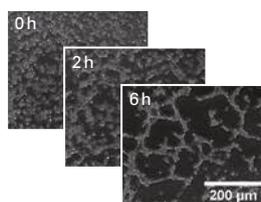


Low humidity: 70% RH

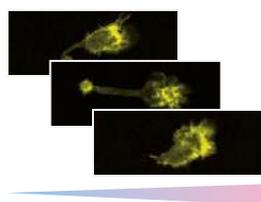


High humidity: 90% RH

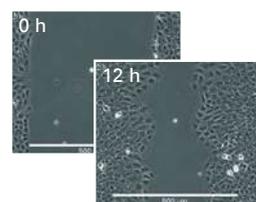
## Experimental Examples



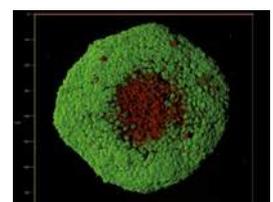
Tube formation / angiogenesis assays



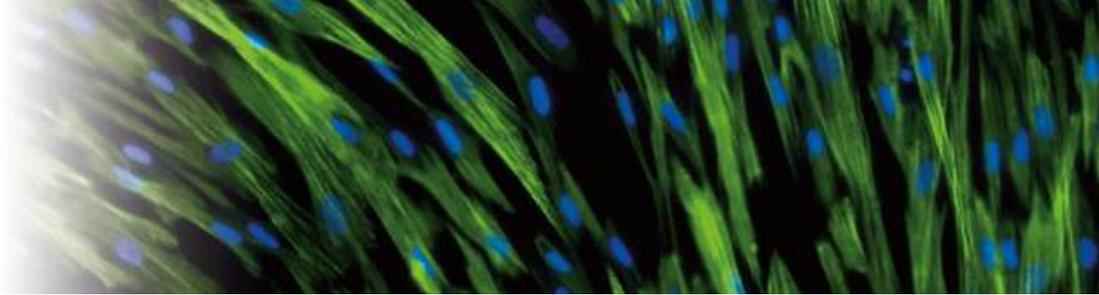
2D and 3D chemotaxis assays



Wound healing and migration assays

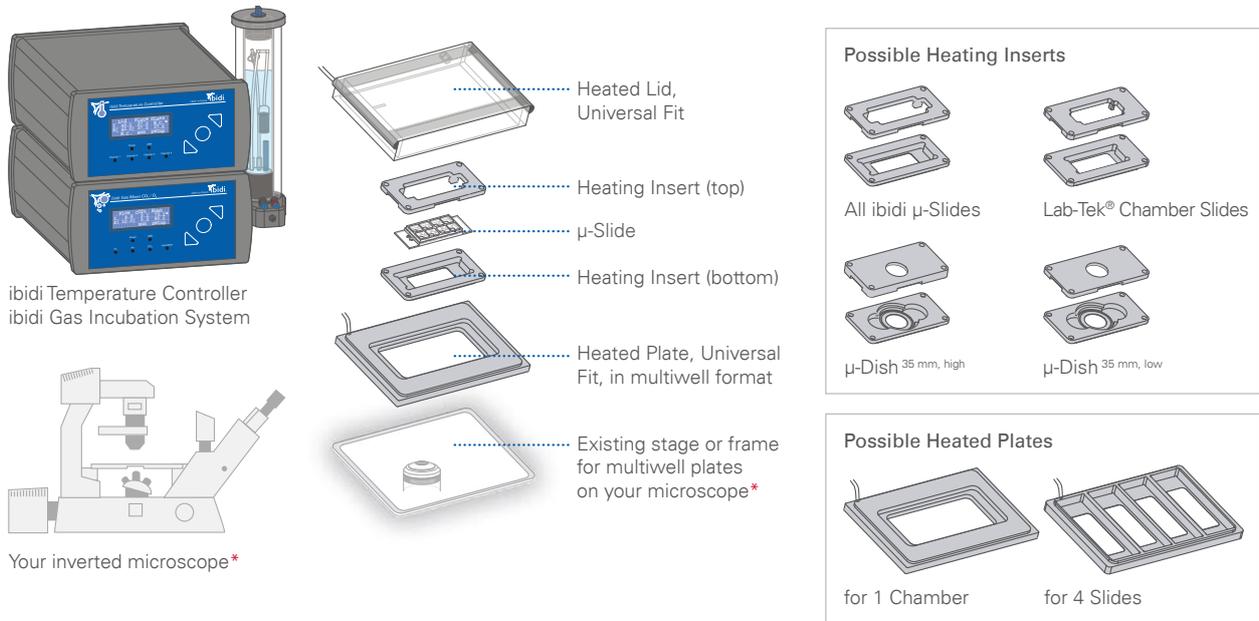


Hypoxia / physioxia



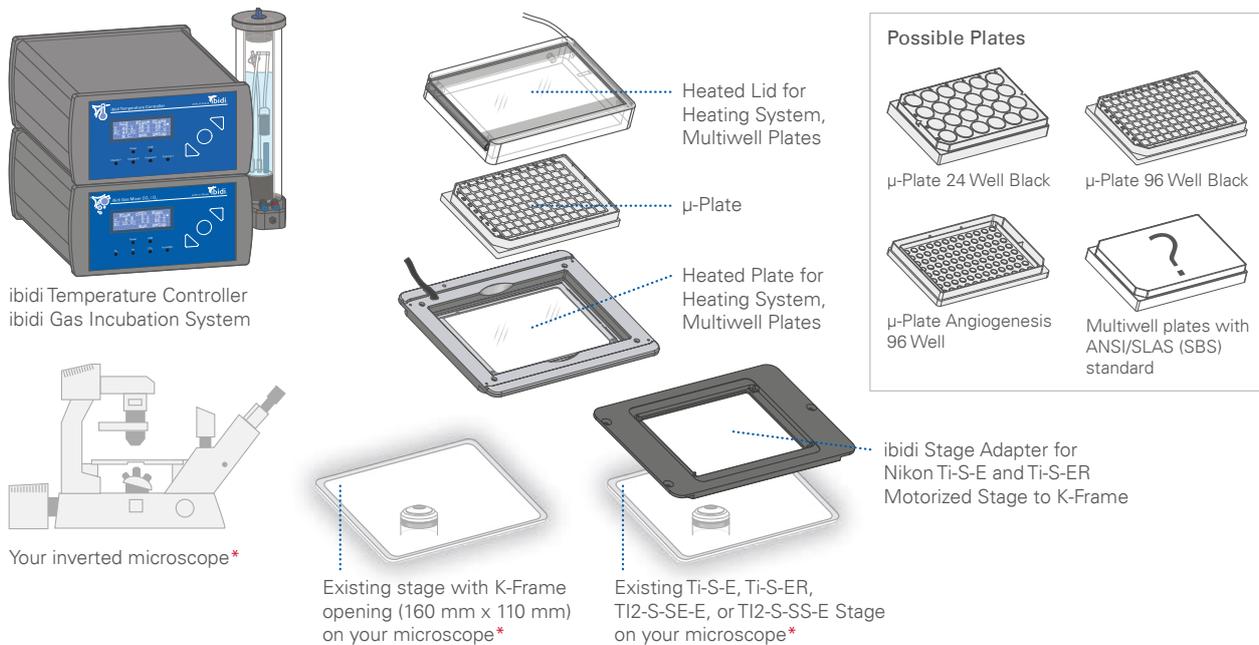
## ibidi Stage Top Incubation System for Slides and Dishes

Compatible with all inverted microscopes that have a multiwell plate holder



## ibidi Stage Top Incubation System for Multiwell Plates

Compatible with all inverted microscopes that have a K-Frame stage



\* Not part of the ibidi Stage Top Incubation System. Please contact us for information on suitable microscopes.

Contact ibidi for a **free demo** of the ibidi Stage Top Incubation System.



# 3D Cell Culture

## Solutions for Spheroids, Organoids, and Single Cells

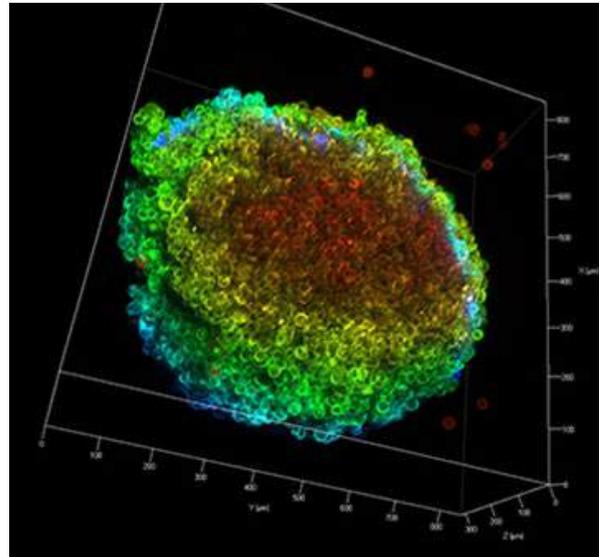
### Mimic the Cellular Microenvironment and Get High-Resolution Images

The majority of cells in living tissue grow in a three-dimensional microenvironment. Therefore, in many cases, a 3D *in vitro* setup more closely resembles an *in vivo* situation than a 2D setup.

For a 3D approach, cells can be cultured in one of two ways:

- grown in suspension on a non-adhesive surface
- embedded in, or on, a 3D matrix that mimics the extracellular matrix (ECM), and allows them to grow in all three directions

Confocal laser scanning microscopy projection of an HT-1080 LifeAct spheroid. Warm colors = close to the surface, cold colors = distant from the surface.



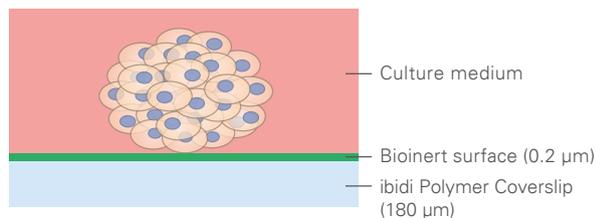
### The ibidi Surfaces for 3D Cell Culture

#### Bioinert Surface: No Cell Adhesion



Bioinert is a completely non-adherent surface that does not allow binding of any biomolecule.

Bioinert is a thin polyol hydrogel layer that is covalently bound to the ibidi Polymer Coverslip. In contrast to standard ultra-low attachment (ULA) coatings, Bioinert provides a stable passivation in cell-based assays for several days or even weeks.



#### Bioinert $\mu$ -Slides and $\mu$ -Dishes

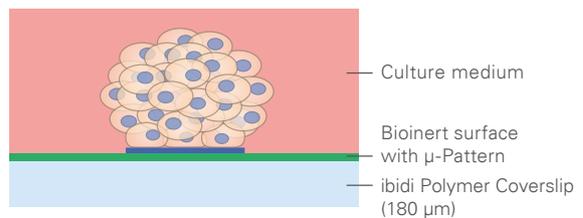
Labware with a completely non-adherent surface for culture and high-end microscopy of spheroids, organoids, and suspension cells

#### $\mu$ -Patterning: Defined Cell Adhesion



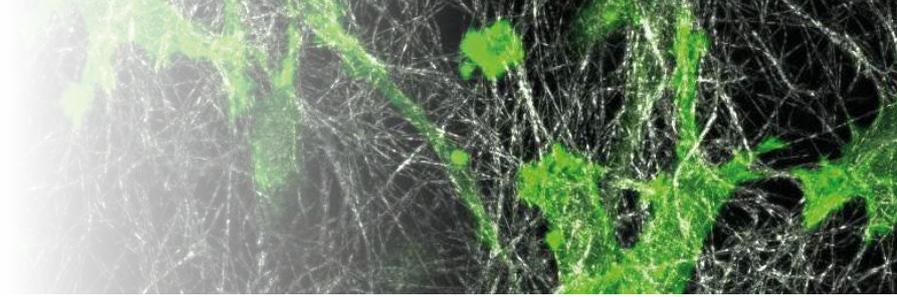
The ibidi  $\mu$ -Patterning technology enables spatially defined cell adhesion for 2D and 3D applications.

Miniaturized adhesive patterns (e.g., lines, squares, or dots) are irreversibly printed on the non-adhesive Bioinert surface of the ibidi Polymer Coverslip, allowing for precisely controlled cell adhesion.



#### $\mu$ -Slides With Multi-Cell $\mu$ -Pattern

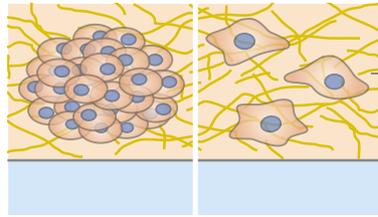
Multiple cells on one spot: Ready-to-use micropatterned slides with ideal spacing for spheroids and organoids



## ibidi Collagen Type I, Rat Tail: A High-Quality 3D Matrix

Collagen I is the main component of connective tissue and is abundant in the mammalian body. It is used in 3D cell culture for simulating the extracellular matrix (ECM).

The ibidi **Collagen Type I, Rat Tail** is a non-pepsinized, native collagen for modeling ECM in gel matrices. Its fast polymerization facilitates optimal cell distribution in 3D gels.



Collagen Type I gel matrix

Download a detailed Application Guide at: [ibidi.com/3DGuide](http://ibidi.com/3DGuide)



## Which Slide Is Recommended for My 3D Application?



### μ-Slide Spheroid Perfusion

A perfusable channel slide with 3 x 7 wells for long-term spheroid cultivation



### μ-Slide III 3D Perfusion

A flow slide for optimal nutrient supply during long-term cell or organoid culture



### μ-Slide I Luer 3D

A slide with one channel and three wells for culturing cells on a 3D gel matrix under flow



### μ-Slide Membrane ibiPore Flow

A slide with a porous glass membrane for transport and transmigration studies under static and flow conditions



### μ-Slide | μ-Plate Angiogenesis

A slide or plate for easy, cost-effective 3D cell culture and microscopy in, or on, a gel matrix

Application					
Perfusion of samples	✓	✓	✓	✓	—
Defined shear stress on cell monolayers	—	—	✓ on gel	✓ on membrane	—
Gel matrices for 3D	—	✓	✓	✓	✓
Cell Type					
Spheroids/organoids	✓ free floating in well	✓ inside gel only	✓ inside gel only	—	✓
Suspension cells	✓ free floating in well	✓ inside gel only	✓ inside gel only	✓ in flow suspension only	✓ free floating or inside gel
Adherent cells	✓ on coverslip	✓ inside or on gel	✓ inside or on gel	✓ on membrane	✓ inside or on gel

# Flow Assays

Simulate Physiologic Systems Under Various Conditions

## The ibidi Pump System

Working under flow conditions can be very important when using cells that exist in biofluidic systems, such as endothelial or epithelial cells. The ibidi Pump System simulates defined continuous and pulsatile laminar flow, and oscillatory flow to study cells in a more physiological environment.



### Benefits

- **Long-term cell cultivation under flow:** Sterile and defined conditions for up to several weeks with minimal mechanical cell stress
- **Automation:** Software-based shear stress and shear rate calculation
- **Simulation of all physiological flow patterns:** Wide shear stress range (0.2–150 dyn/cm<sup>2</sup>)
- **Cost effectiveness:** Minimal amount of medium and supplement required
- **Versatility:** Up to four individual Fluidic Units can be operated by one Pump Controller
- **Compatibility:** Works with all  $\mu$ -Slides with Luer adapters, the ibidi Stage Top Incubation Systems, all incubators, and all inverted microscopes

### Applications

- Long-term cell culture under flow with defined shear stress values
- Rolling and adhesion assays
- Transmigration and invasion studies
- Perfusion of cells, spheroids, and organoids in 2D and 3D for optimal nutrition

Download a detailed Application Guide at: [ibidi.com/FlowGuide](http://ibidi.com/FlowGuide)



## The ibidi Channel Slides for Flow Assays



### $\mu$ -Slide I Luer Family

Slides with one channel for standard flow assays; available with an ibidi Polymer Coverslip or glass bottom, plus different channel heights and coatings



### $\mu$ -Slide VI Family

Slides with six channels for parallel flow assays; available with an ibidi Polymer Coverslip or glass bottom, plus different channel heights and coatings



### $\mu$ -Slide I Luer 3D

A slide with one channel and three wells for culturing cells on a 3D gel matrix under defined flow



### $\mu$ -Slide Membrane ibiPore Flow

A slide with a porous glass membrane for transport and transmigration studies



### $\mu$ -Slide $\gamma$ -shaped

A slide for modelling shear stress gradients, performing bifurcation studies, and simulating branching blood vessels



### $\mu$ -Slide III 3D Perfusion

A perfusable slide for optimal nutrient supply during long-term 3D culture of cells, tissue samples, organoids, spheroids, and small organisms



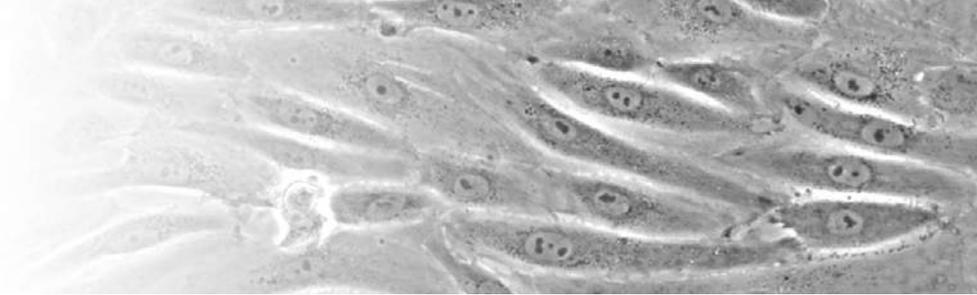
### $\mu$ -Slide Spheroid Perfusion

A perfusable channel slide with 3 x 7 wells for long-term spheroid or organoid cultivation



### $\mu$ -Slide VI<sup>0.4</sup> With $\mu$ -Pattern

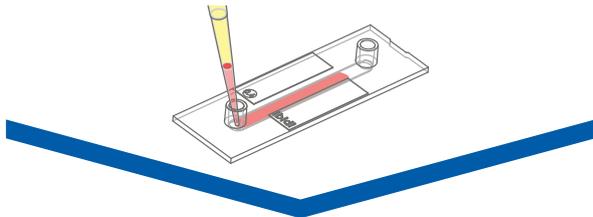
Ready-to-use micropatterned slides; available for single cell or multi-cell assays



## ibidi Offers the Complete Solution for Your Flow Assay:

### Sample Preparation

Setup your flow assay of choice and choose from our broad portfolio of channel slides

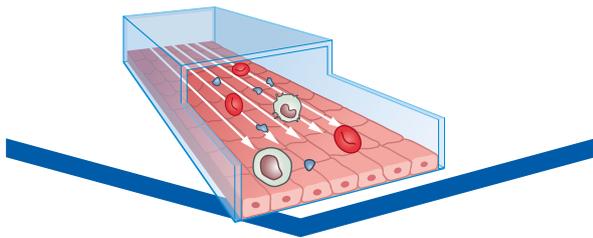


### Channel Slides

Channel slides with a variety of heights and coatings for different shear stress ranges

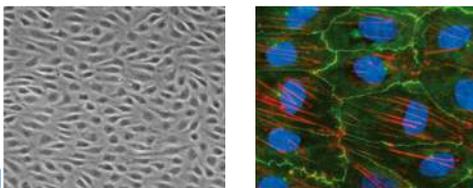
### Flow Conditioning

Apply unidirectional, oscillatory, or pulsatile flow using the ibidi Pump System



### Staining and Microscopy

Image and stain cells directly in the channel slide



### The ibidi Pump System

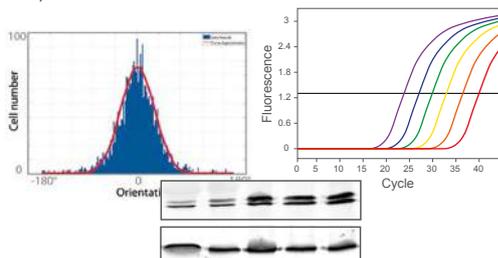
A perfusion system to cultivate cells under flow for the simulation of blood vessels

Contact ibidi for a **free demo** of the ibidi Pump System.

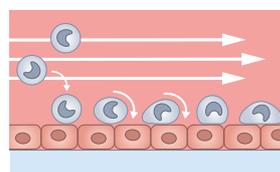


### Downstream Analysis

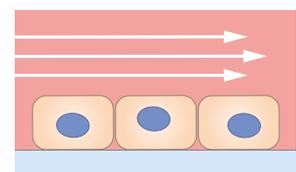
Easily analyze your cells with, e.g., Western Blot, qPCR, or FACS



### Experimental Examples



*Rolling and adhesion*



*Cells under shear stress*

# Migration and Wound Healing Assays

Keep Your Assays Easy and Reproducible

- Perform your experiment of choice: Wound healing, migration, 2D invasion assays, or co-cultivation of cells
- Benefit from extremely high reproducibility due to the defined size of the Culture-Inserts' cell-free gap
- Save time with a quick and easy experimental setup and automated image analysis

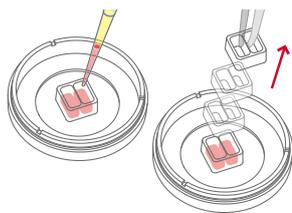
Download a detailed Application Guide at: [ibidi.com/WoundHealingGuide](http://ibidi.com/WoundHealingGuide)



## ibidi Offers the Complete Solution for Your Wound Healing or Migration Assay:

### Sample Preparation

Setup your assay of choice in an easy and highly reproducible manner



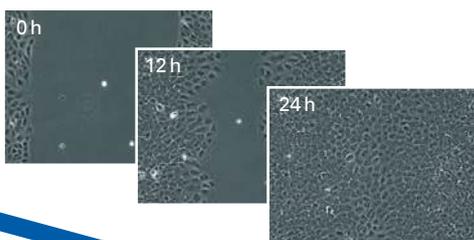
#### Culture-Insert 2 Well | 3 Well | 4 Well

Silicone insert with a defined cell-free gap



### Live Cell Imaging

Measure migration and wound closure under physiological conditions in real time

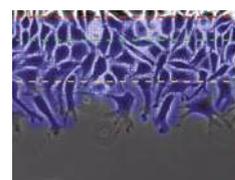
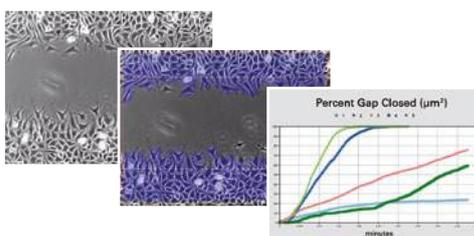


#### ibidi Stage Top Incubation System

The ibidi solution for creating and maintaining a physiological environment (see page 6)

### Data Analysis

Speed up your experimental workflow with quick and reliable automated image analysis



#### MetaVi Labs

Wound Healing  
FastTrack AI Image  
Analysis Software

Contact [techsupport@ibidi.com](mailto:techsupport@ibidi.com) to get free analysis jobs for direct testing with your data.

# Chemotaxis Assays

Precisely Analyze Directed Cell Migration Behavior in 2D or 3D

- Investigate the migration of slow migrating cells (e.g., cancer cells) and fast migrating cells (e.g., immune cells) in a 2D or 3D environment
- Keep a linear and stable chemotactic gradient for over 48 hours
- Reduce your costs by using minimal amounts of medium and supplements

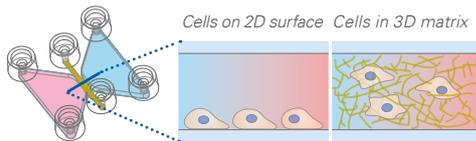
Download a detailed Application Guide at: [ibidi.com/ChemotaxisGuide](https://www.ibidi.com/ChemotaxisGuide)



## ibidi Offers the Complete Solution for Your Chemotaxis Assay:

### Sample Preparation

Create a precisely defined, stable chemotactic gradient in a reproducible environment

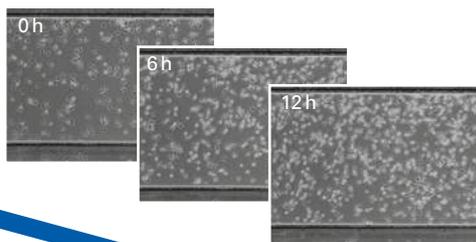


### μ-Slide Chemotaxis

Specialized geometry and brilliant optical features

### Live Cell Imaging

Measure chemotaxis under physiological conditions in real time

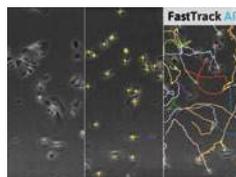
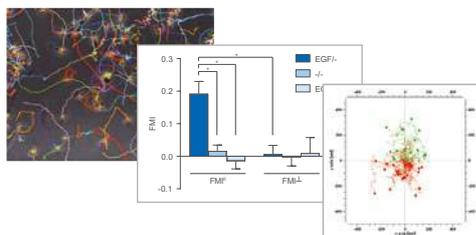


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### Data Analysis

Visualize migrational paths and analyze various parameters using machine learning-based software



### MetaVi Labs

Chemotaxis FastTrack AI Image Analysis Software

Contact [techsupport@ibidi.com](mailto:techsupport@ibidi.com) to get free analysis jobs for direct testing with your data.

# Angiogenesis Assays

Perform Tube Formation, Sprouting Assays, and 3D Cell Culture

- Investigate the behavior of endothelial cells using tube formation assays, sprouting assays, 3D cell culture, and immunofluorescence analysis
- Benefit from brilliant microscopic visualization without gel meniscus formation—all cells in one optical plane
- Reduce your costs by minimizing the amounts of Matrigel, medium, and supplements needed

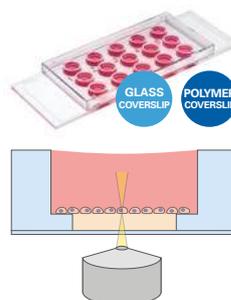
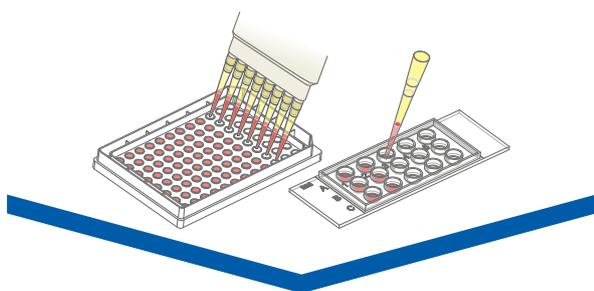
Download a detailed Application Guide at: [ibidi.com/AngioGuide](http://ibidi.com/AngioGuide)



## ibidi Offers the Complete Solution for Your Tube Formation Assay:

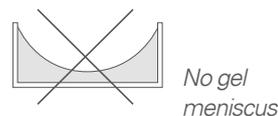
### Sample Preparation

Seed your cells on minimal amounts of Matrigel and take advantage of the “well-in-a-well” feature



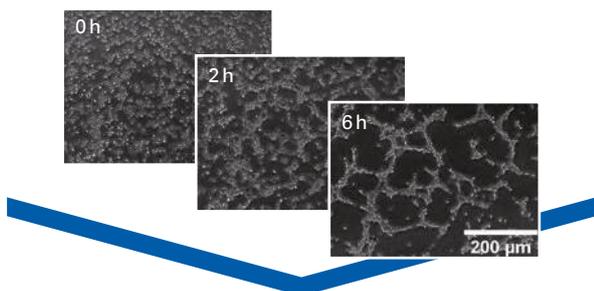
### μ-Slide Angiogenesis

The ibidi “well-in-a-well” technology reduces Matrigel amount to 10  $\mu$ l per well and no gel meniscus is formed



### Live Cell Imaging

Get brilliant microscopic images in real time under physiological conditions—without gel meniscus

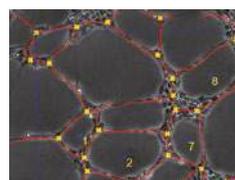
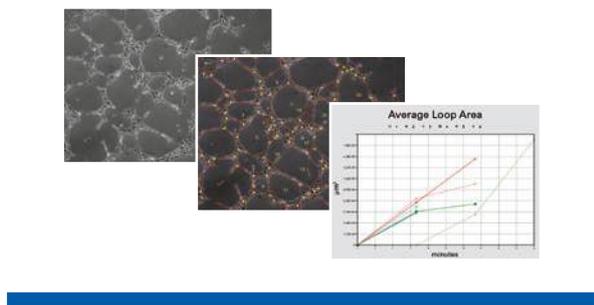


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# Immunofluorescence Assays

Tailored for Your Assay:  
Choose From 3 Unique Solutions

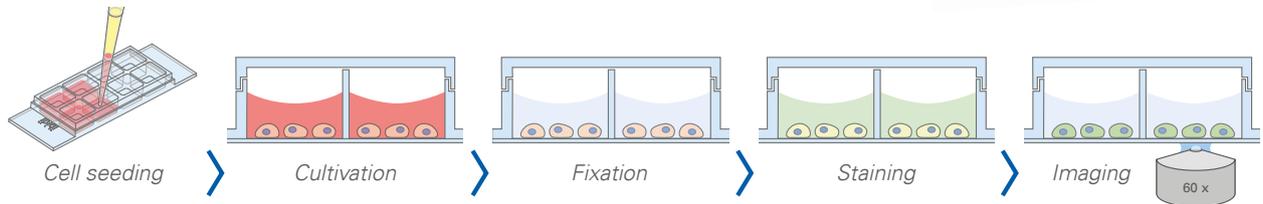
- Simplify your protocol with the ibidi all-in-one chambers
- Perform high-resolution imaging (e.g., widefield fluorescence, confocal, or undisturbed phase contrast microscopy)

Download a detailed  
Application Guide at:  
[ibidi.com/IFGuide](http://ibidi.com/IFGuide)



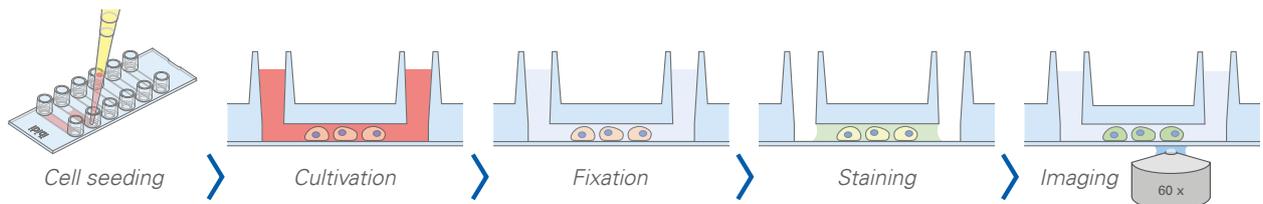
## Chambered Coverslips

- Up to 18 non-removable wells on a coverslip bottom
- Versatile use for different cell culture applications
- Different coatings available



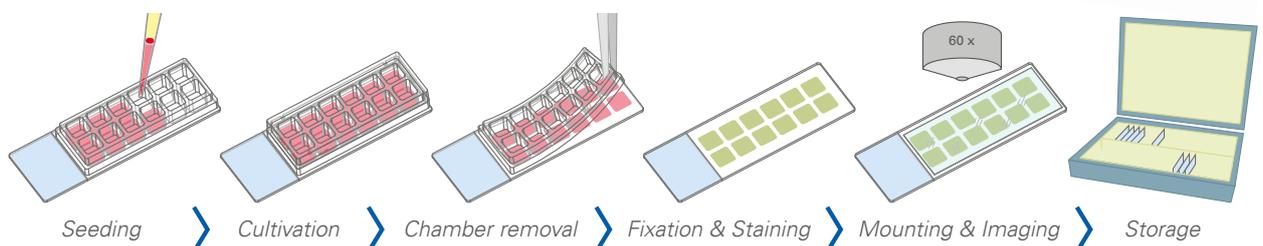
## Channel Slides

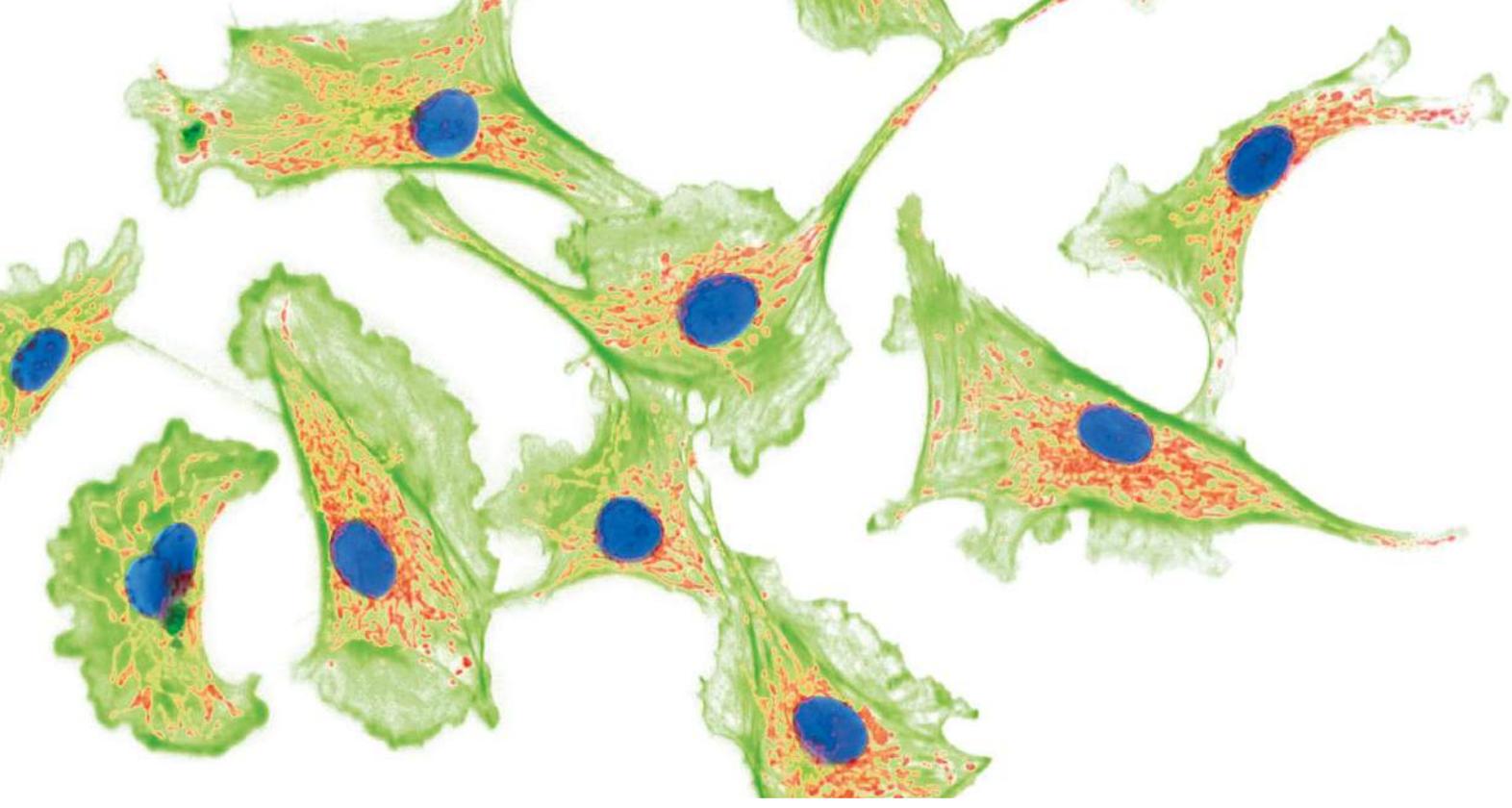
- Six parallel channels on a coverslip bottom
- Homogeneous cell and antibody distribution and small medium amounts
- Different channel heights and coatings available



## Chamber Slides

- Removable silicone chambers on a standard glass slide
- Ideal for long-term storage and upright microscopy
- Suitable for high-throughput screening





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