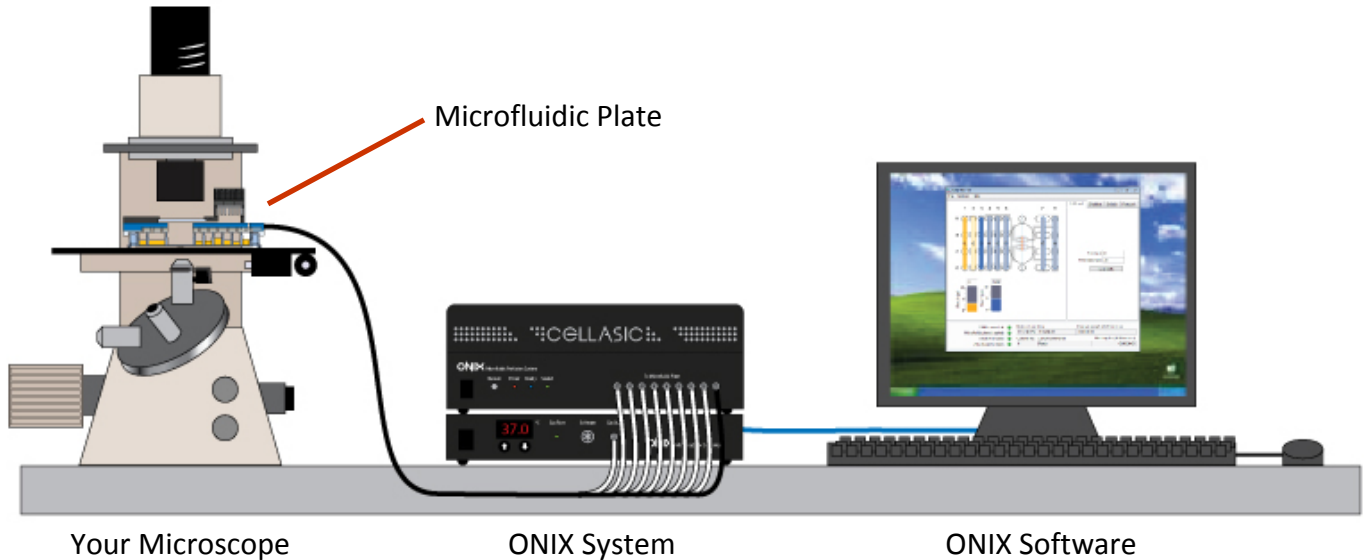


Microfluidic Perfusion System



Advanced Control for Live Cell Imaging

The ONIX enhances cell culture quality with cutting edge microfluidic perfusion technology. The system complements your microscope to provide a total solution for capturing the highest quality data with minimal effort. The integrated Micro-Incubator Controller maintains a temperature and gas environment directly on the microfluidic plate for long term cell culture on any microscope stage.



ONIX System

The system integrates all the components necessary for high quality cell culture on your microscope stage. Our innovative media, temperature, and CO₂ delivery method optimizes cell health during long term experiments. Intuitive software automates all operation to make data collection simple and painless.



ONIX Microfluidic Plates

Our microfluidic cell culture plates provide a highly stable cell environment for unprecedented cell culture quality. ONIX plates are available in a range of application specific designs to match your research needs.

Technical Specs

Microfluidic Perfusion System

Pressure Output: 0-10 ± 0.02 psi
8 Pressure Channels
Power Input: 110-240 V AC
USB Data Connection
Built-in Pressure/Vacuum Pumps
Operated via FG Software

Micro-Incubator Controller

Temperature*: RT-45 ± 0.2°C
Heat/Cool Rate*: 1°C/min
Use with objective heater for Im-
mersion lenses
Gas Flow Rate: 1 mL/min
Gas Input: 15 psi, premixed
No Humidity Control Necessary

Microfluidic Plates

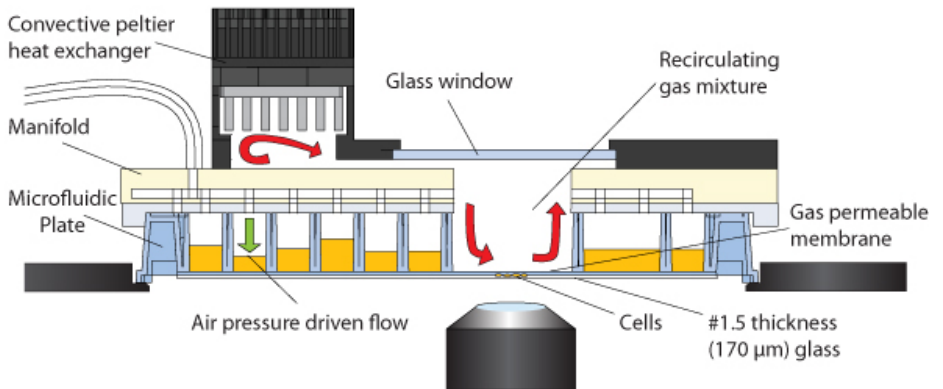
Standard 96-well Plate footprint
#1.5 glass coverslip bottom
Uninterrupted Flow Time: 3+ Days
Perfusion Flowrate: 1-100 µL/hr
Typical Chamber Volume: 1 µL
Input Volume: 300 µL per well
For Inverted Microscopes Only

FG Software

Computer Requirements:
Windows 7, Vista, XP, 2000 Vista
USB 1.0 Connection or Higher
Pentium III-Class PC (500 MHz or
higher)

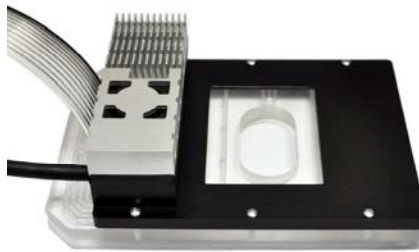
* Under typical ambient conditions.

Micro-Incubation Configuration



The advanced microincubation method maintains temperature and gas control to the cells during long term perfusion imaging. The chamber formed between the microfluidic plate and manifold creates an incubator for temperature and gas control that is in direct contact with the cultured cells.

Innovative Manifold Interface



The low profile manifold seals to the standard footprint microfluidic plate for imaging on any inverted microscope. Flow, temperature, and gas lines route through the manifold to the microfluidic plate without hindering microscope function.

Application Examples

- Cell Response to Media Change
- Chemotaxis and Migration
- Apoptosis and Toxicity
- Gene Expression
- 3D Culture
- Protein Localization/Transport
- Drug Response
- Phase Contrast, Fluorescence, DIC

Example Cell Types

- Adherent Cell Lines
- 3D Tissue
- Non-Adherent Cell Lines
- Primary Cells
- Stem Cells
- Yeast Cells
- Bacterial Cells
- Plant Cells

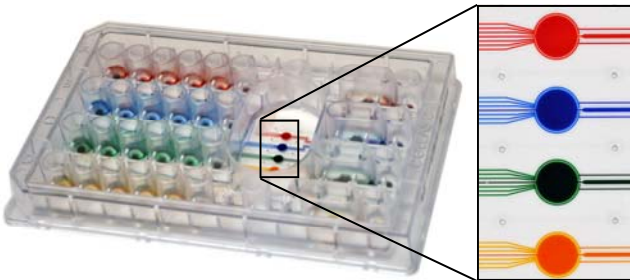
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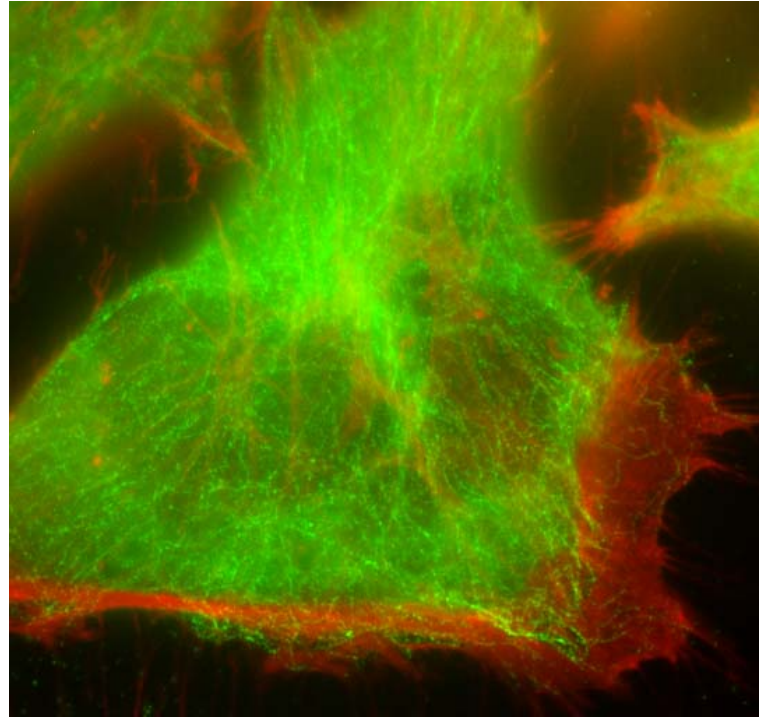
Microfluidic Live Cell Imaging



Winner of 2010
R&D100 Awards



The ONIX Microfluidic Plate was designed to offer the highest end features for live cell microscopy



Perform long-term tracking of live cells with precise micro-environment control (*HeLa*, *actin/tubulin*, 100X)

Live Cell Imaging Made Simple

The ONIX combines the latest advances in microfluidic technology and live cell perfusion into an easy-to-use platform. Our M-Series microfluidic plates provide unprecedented control and quality for cell microscopy.

The innovative microfluidic chambers are designed to maximize long term cell health, allowing you to follow and induce cell events during high magnification imaging. Automated perfusion protocols can be programmed into the CellASIC FG Software for precise changes from media to drug.

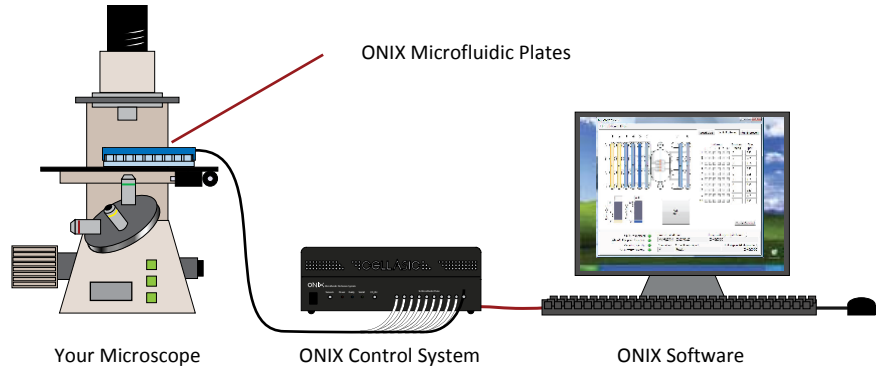
Application Examples

- Cell Response to Media Change
- 3D Culture
- Cell-cell Signaling
- Chemotaxis and Migration
- Apoptosis and Toxicity
- Gene Expression
- Protein Localization/Transport
- Calcium Response
- Phase Contrast, Fluorescence, DIC

Features and Benefits

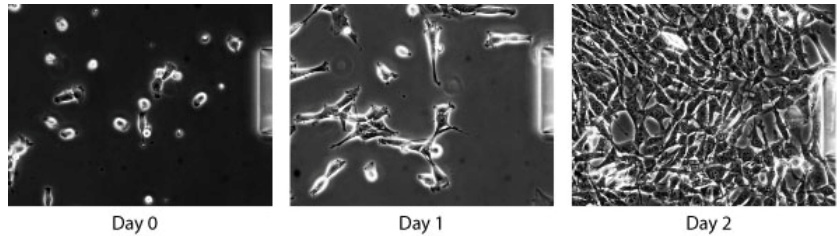
- **Integrates with your microscope:** Fit to any inverted microscope to create a live cell imaging station.
- **Microfluidic Cell Culture:** Proprietary microfluidic chamber maintains cell health and precision laminar flow creates a highly stable cell environment.
- **Multiplexed Culture Chambers:** Independent flow chambers allow simultaneous experiments on one plate.
- **Pressure Driven Flow:** Eliminates setup time while delivering more accurate flow control compared to typical syringe pumps.
- **Microscale Flow Control:** Software interface allows you to program solution exposures and change media solutions in real-time during an experiment.
- **Application Specific Format:** CellASIC offers a growing number of microfluidic plates that operate on the ONIX platform. This flexibility and expandability allows many experiment types to be run in this innovative format.

Works with your inverted microscope



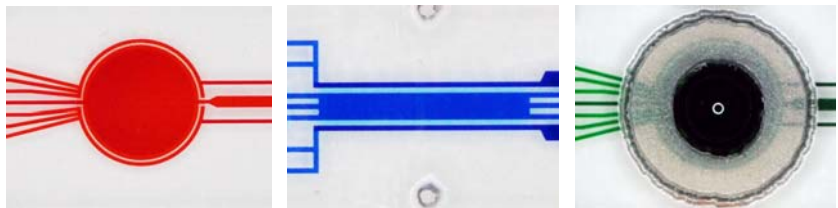
The ONIX system and plates work with any standard inverted microscope. The easy set up and flexibility allows you to perform live cell imaging experiments with confidence.

Long term live cell imaging



Track cells over multiple generations or development spanning days to weeks. The microfabricated chamber allows long term culture on the microscope stage or in a standard incubator. The precise environment control maximizes cell health for detailed biological studies.

Solution exchange, spatial gradient, 3D perfusion



M04S, M04G, M04O Cell culture chambers

The ONIX software allows automated scheduling of solution exposures during live cell imaging. The laminar flow provides uniform exposure profiles and minimal stress on cells. Different plate designs allow for high quality switching (M04S), spatial gradients (M04G), and 3D perfusion (M04O).

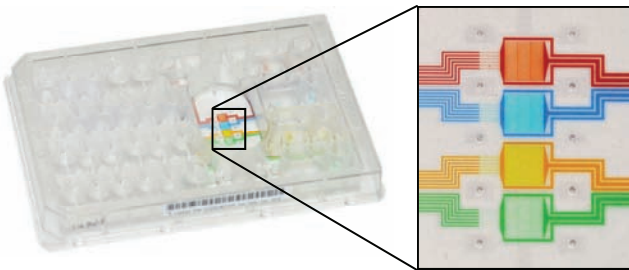
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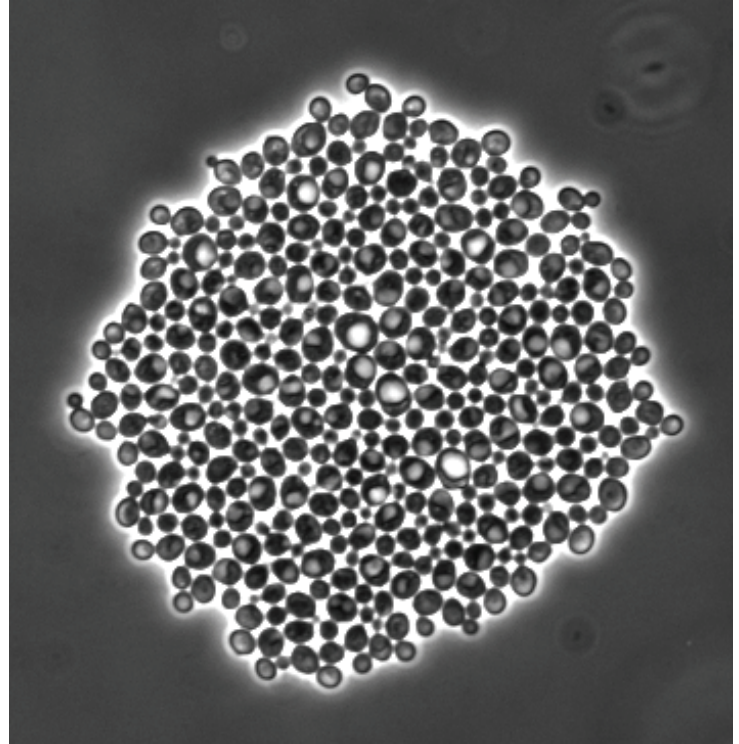
Microfluidic Flow Cell for Yeast



Winner of 2010
R&D100 Awards



The Yeast Microfluidic Plate was designed to offer the highest end features for yeast cell microscopy



Perform multi-generation tracking of cells while maintaining a single focal plane for 12+ hours (image: *S. cerevisiae*, 40X)

Live Cell Imaging Made Simple

The ONIX combines the latest advances in microfluidic technology and live cell perfusion into an easy-to-use platform. Our Y-Series microfluidic plates provide unprecedented control and quality for yeast microscopy.

The innovative microfluidic chambers are designed to hold yeast cells in a single focal plane, allowing you to follow and induce cell events during high magnification imaging. Automated perfusion protocols can be programmed into the CellASIC FG Software for precise changes from media to drug.

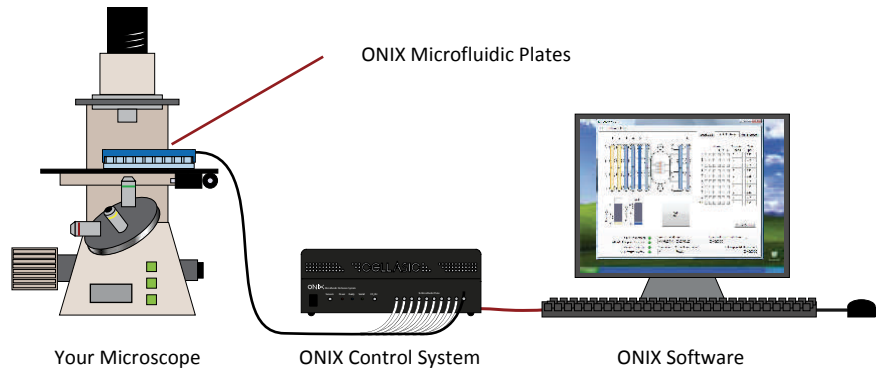
Application Examples

- Cell Response to Media Change
- Induction of Cell Cycle Events
- GFP-linked Nuclear Trafficking
- Live Cell Microscopy of Mitosis
- Starvation and Recovery
- Gene Expression
- Protein Localization
- Mitochondria Inheritance
- Phase Contrast, Fluorescence, DIC

Features and Benefits

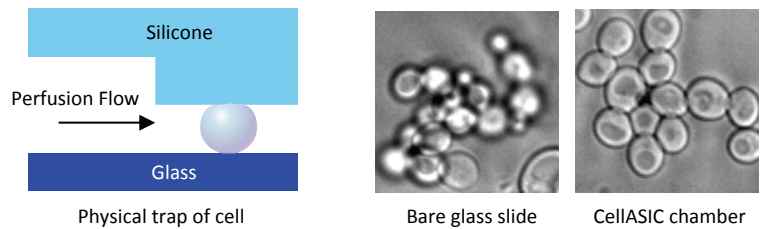
- **Integrates with your microscope:** Fit to any inverted microscope to create a live cell imaging station.
- **Microfluidic Cell Culture:** Proprietary microfluidic chamber maintains cells in focus and precision laminar flow creates a highly stable cell environment.
- **Multiplexed Culture Chambers:** Independent flow chambers allow simultaneous experiments on one plate.
- **Pressure Driven Flow:** Eliminates setup time while delivering more accurate flow control compared to typical syringe pumps.
- **Microscale Flow Control:** Software interface allows you to program solution exposures and change media solutions in real-time during an experiment.
- **Application Specific Format:** CellASIC offers a growing number of microfluidic plates that operate on the ONIX platform. This flexibility and expandability allows many experiment types to be run in this innovative format.

Works with your inverted microscope



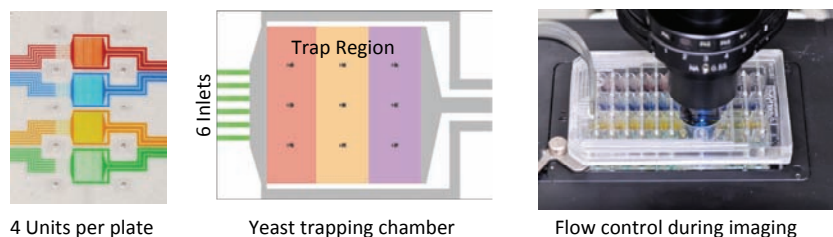
The ONIX system and plates work with any standard inverted microscope. The easy set up and flexibility allows you to perform live cell imaging experiments with confidence.

Trapping chamber keeps cells in perfect focus



Track yeast over multiple generations for 12+ hours while maintaining a single focal plane. The microfabricated chamber gently holds cells against the glass imaging surface to maintain a single focal plane during perfusion imaging experiments.

Unparalleled perfusion control



The ONIX software allows automated scheduling of solution exposures during live cell imaging. The Y04 plate allows up to 4 chambers to be operated in parallel, each with 6 upstream solutions. The highly laminar flow provides uniform exposure profiles and minimal stress on cells.

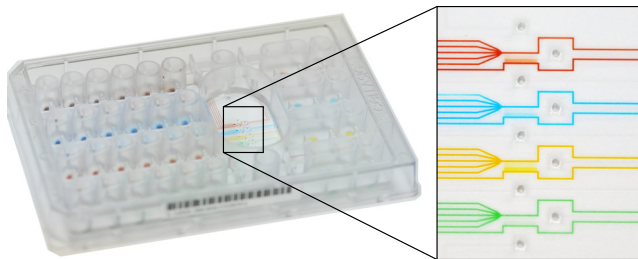
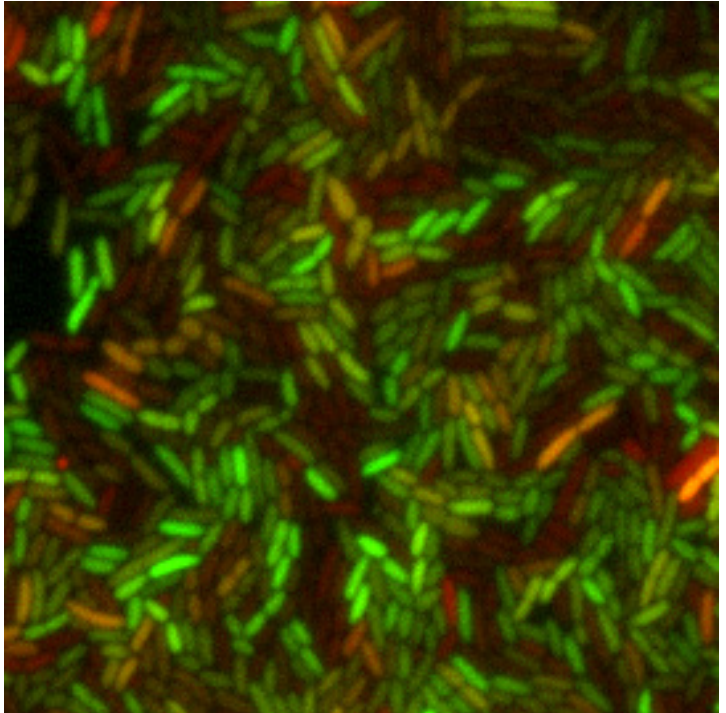
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Microfluidic Flow Cell for Bacteria



Winner of 2010
R&D100 Awards



The Bacteria Microfluidic Plate was designed to offer the highest end features for bacteria cell microscopy

Perform multi-generation tracking of cells while maintaining a single focal plane for 12+ hours (image: *E. coli*, 100X)

Live Cell Imaging Made Simple

The ONIX combines the latest advances in microfluidic technology and live cell perfusion into an easy-to-use platform. Our B-Series microfluidic plates provide unprecedented control and quality for bacteria microscopy.

The innovative microfluidic chambers are designed to hold bacteria cells in a single focal plane, allowing you to follow and induce cell events during high magnification imaging. Automated perfusion protocols can be programmed into the CellASIC FG Software for precise changes from media to drug.

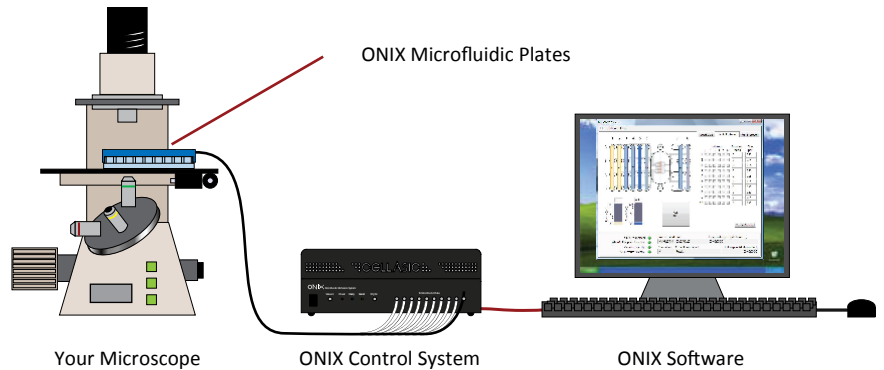
Application Examples

- Cell Response to Media Change
- Induction of Cell Cycle Events
- Synthetic Biology
- Cell Growth/Division Tracking
- Starvation and Recovery
- Gene Expression
- Protein Localization
- Single Cell Analysis
- Phase Contrast, Fluorescence, DIC

Features and Benefits

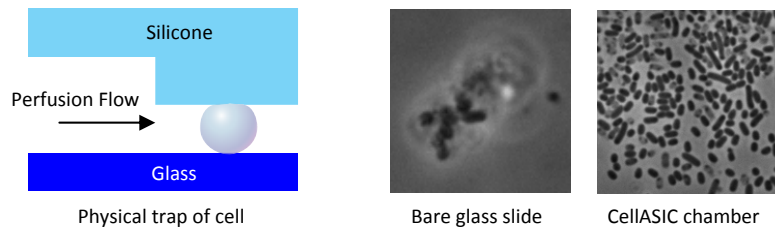
- **Integrates with your microscope:** Fit to any inverted microscope to create a live cell imaging station.
- **Microfluidic Cell Culture:** Proprietary microfluidic chamber maintains cells in focus and precision laminar flow creates a highly stable cell environment.
- **Multiplexed Culture Chambers:** Independent flow chambers allow simultaneous experiments on one plate.
- **Pressure Driven Flow:** Eliminates setup time while delivering more accurate flow control compared to typical syringe pumps.
- **Microscale Flow Control:** Software interface allows you to program solution exposures and change media solutions in real-time during an experiment.
- **Application Specific Format:** CellASIC offers a growing number of microfluidic plates that operate on the ONIX platform. This flexibility and expandability allows many experiment types to be run in this innovative format.

Works with your inverted microscope



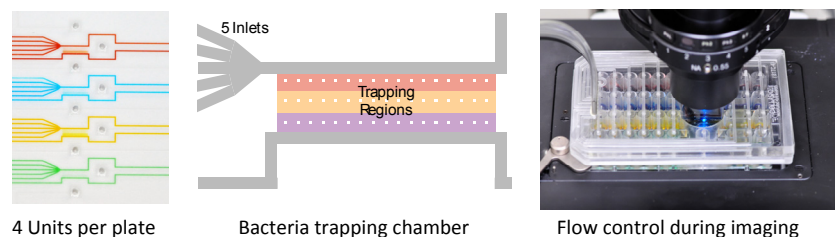
The ONIX system and plates work with any standard inverted microscope. The easy set up and flexibility allows you to perform live cell imaging experiments with confidence.

Trapping chamber keeps cells in perfect focus



Track bacteria over multiple generations for 12+ hours while maintaining a single focal plane. The microfabricated chamber gently holds cells against the glass imaging surface to maintain a single focal plane during perfusion imaging experiments.

Unparalleled perfusion control



The ONIX software allows automated scheduling of solution exposures during live cell imaging. The B04 plate allows up to 4 chambers to be operated in parallel, each with 6 upstream solutions. The highly laminar flow provides uniform exposure profiles and minimal stress on cells.

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