

# Incucyte<sup>®</sup> Live-Cell Analysis

Real-Time Cell Analysis for  
Scientific Discovery

Simplifying Progress

**SARTORIUS**

# The Fast Lane to Live-Cell Insights

Accelerate your discovery with Incucyte® Live-Cell Analysis Systems, the complete solution for capturing real-time cellular dynamics from 2D and 3D cell models at the highest throughput available on the market. Powerful integrated software easily turns your kinetic data into usable insights and professional figures. The new Incucyte® CX3 delivers our most advanced capabilities for 3D live-cell applications.



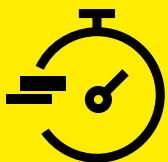
## Protect Your Cells

- Analyze living cells undisturbed in the incubator
- Preserve cell health and minimize artifacts with optimized reagents and label-free assays
- Reduce handling errors with automated image acquisition



## Get New Answers

- Capture every data point with real-time continuous analysis
- Generate reliable, publication-ready data with purpose-built software



## Increase Productivity

- Assay up to six 96-well plates at once for maximum data generation
- Automatically image and kinetically track cells over days or weeks
- Turn high-throughput data into actionable information with intuitive software

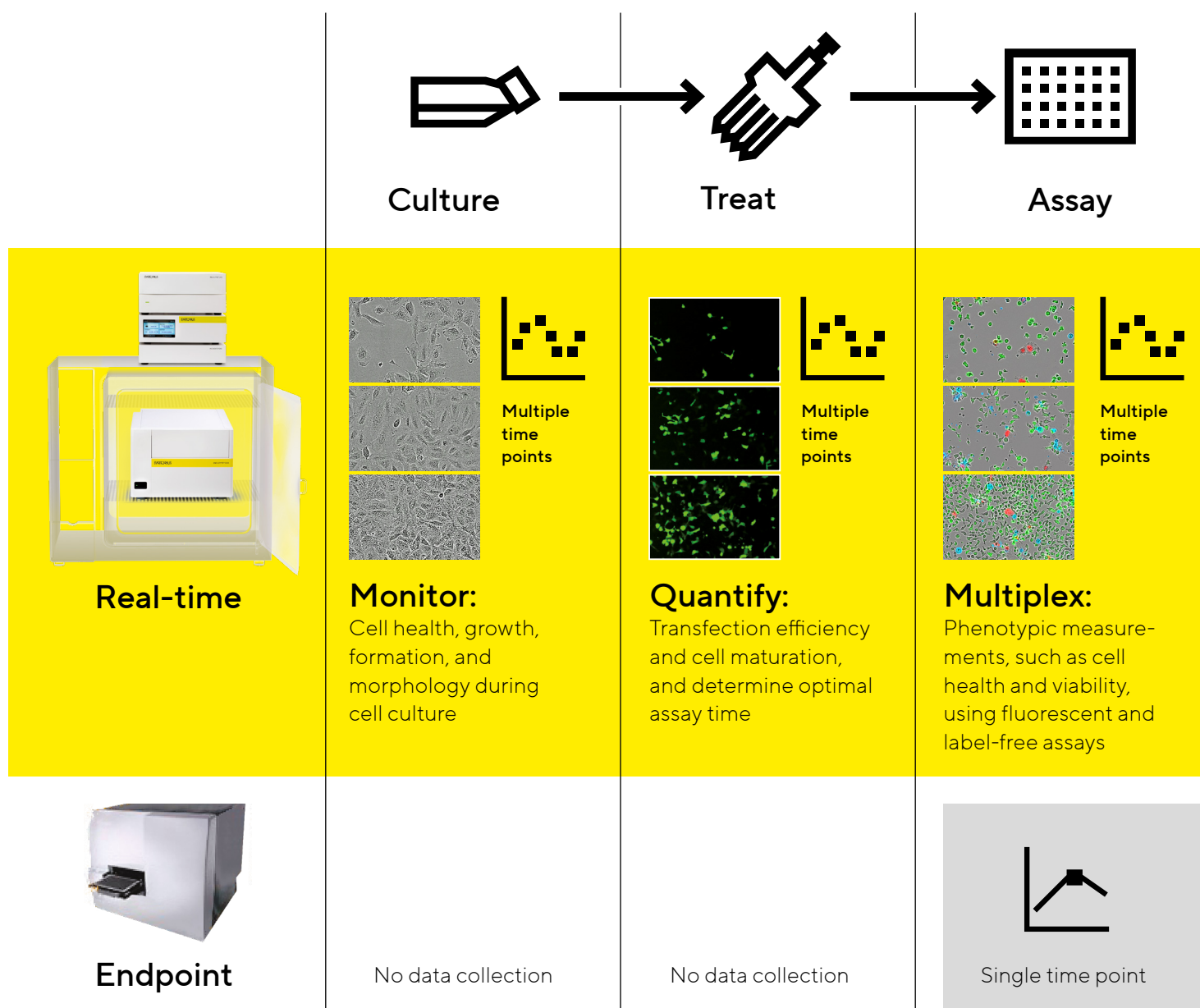


## Access Data Remotely

- Connect remotely to analyze your data anytime, anywhere
- Collaborate on research projects with unlimited user licenses

# Capture Every Data Point with Continuous Analysis

Endpoint cell assays offer limited information about a moment in time. With live-cell imaging and analysis on an Incucyte® system, you have an opportunity to capture the most complete picture of cell health, growth, and morphology with the unique flexibility to assay from flasks, dishes, and up to six multi-well plates.



Comparison of typical cell workflows using traditional endpoint and real-time cell analysis methods. With real-time analysis, observations and measurements are generated throughout the cell culture workflow, in addition to the phenotypic parameters in the assay.

# Seamless Live-Cell Imaging: From Sample to Discovery

## Optimized Workflow in Four Simple Steps



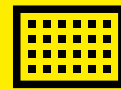
### Streamlined Assay Preparation

- Reduce setup time with Incucyte® lab-tested protocols and true live-cell reagents
- Maintain cell health and ensure artifact-free detection in a physiologically stable environment



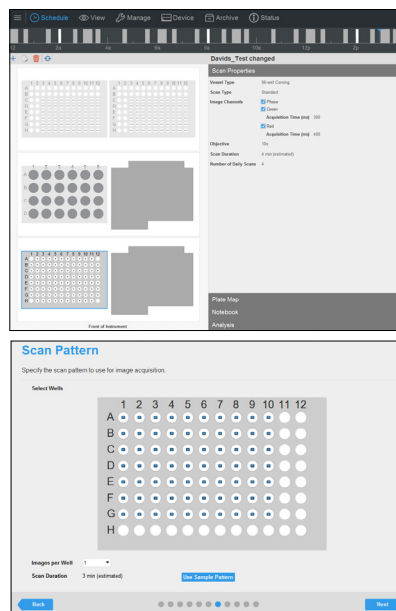
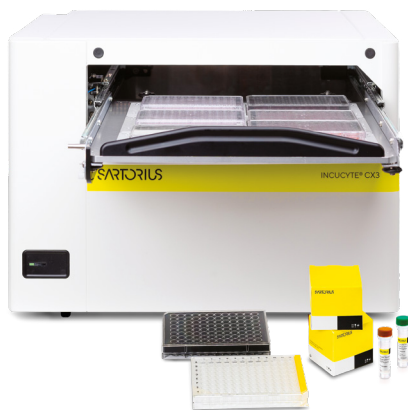
### Effortless, Walk-Away Operation

- Guided, step-by-step software simplifies setup for all experience levels
- Automated image acquisition from flasks, multi-well plates, and other vessels

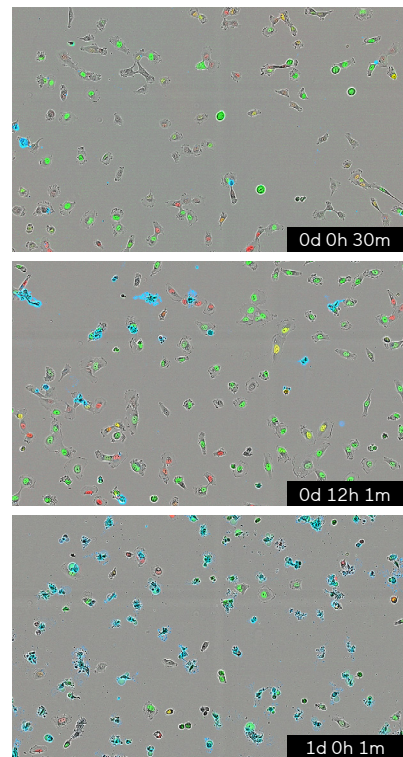


### High-Throughput Time-Lapse Imaging

- Multiplexed acquisition with up to five fluorescent channels and HD phase per well at every timepoint
- Vessel View enables visual assessment of experimental progress in real time
- Supports multiple users and diverse experimental designs simultaneously



Guided interface enables rapid experimental set up, even for first time users.



Automatically acquire images over time.

Unlock the full potential of live-cell imaging with Incucyte® Live-Cell Analysis. Whether you're an experienced researcher or new to live-cell imaging, the Incucyte® platform simplifies every step – from assay setup to data analysis – so you can focus on your research, not the process.

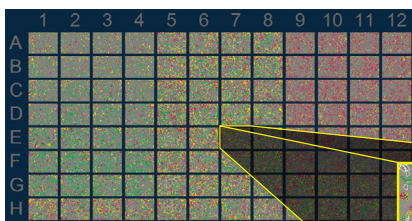
With intuitive software, walk-away automation, and real-time analysis, Incucyte® connects you with the data you need quickly, while maintaining the integrity of your 2D or 3D biological models.



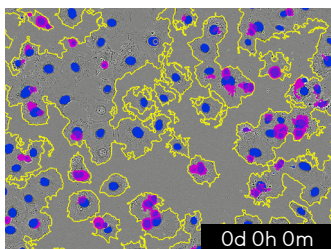
## Real-Time Analysis for Immediate Insights

- Track cell health, function, movement, and morphology with purpose-built software
- Generate kinetic graphs and movies with image-based validation
- Monitor your work from anywhere with secure remote software access

Continuously monitor cells as the biology unfolds – for days, weeks, or months.

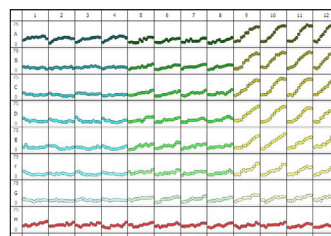


Use Incucyte® Vessel View to review images of all locations in the vessel at once and quickly assess experimental results, plus zoom in on images of interest.

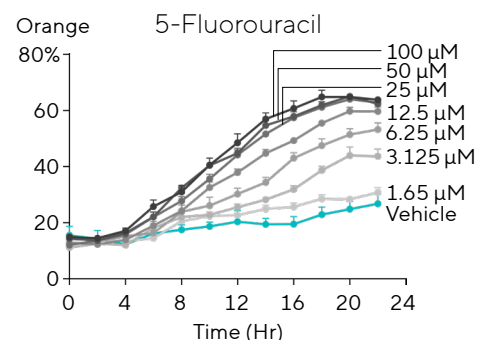


Automatically identify regions of interest via masks.

HT 1080 Cells in G1 (Orange)  
Percent of Total Cells Over 24 Hrs



View all 96- or 384-well kinetic trends at once with Incucyte® Plate Graph and export data to calculate EC<sub>50</sub> or IC<sub>50</sub> response values.



Generate presentation-ready timelapse graphs.



# Incucyte® SX5

Expanding Possibilities  
with More Colors



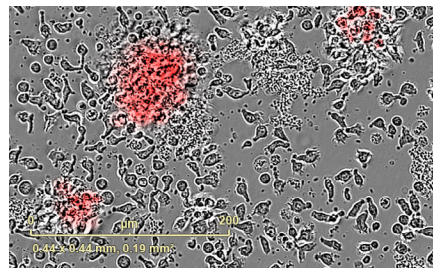
## Harness the Power of Flexible Live-Cell Analysis

Gain deeper insights and explore diverse applications with the Incucyte® SX5. Use up to five fluorescence channels, with three simultaneously, for extended time-lapse experiments. Study immune-tumor interactions, neuronal synaptic activity, and cancer metabolism on a single platform. The 3-color optical module includes a low-phototoxicity NIR channel and optimized reagents for easy 3-color applications.

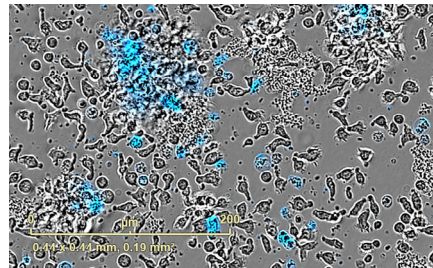
## Key Features

- Our most advanced application offering
- Multi-user support
- Up to 5 different fluorescent channels, up to 3 simultaneously
- 4x, 10x, 20x objectives on an automated turret
- Support for 3 interchangeable vessel trays and over 600 vessels, up to 6 microplates in parallel

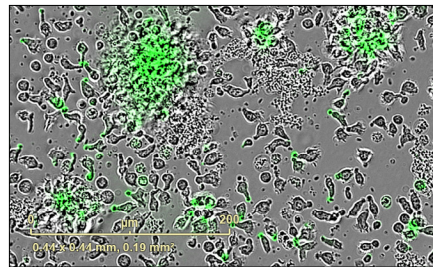
Target Cells:  
Nuclight Orange Ramos



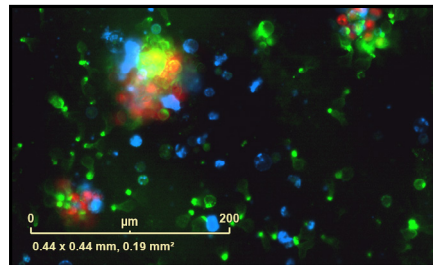
Cell Health:  
Annexin V NIR



Effector Cells:  
CD8-Fabfluor-488

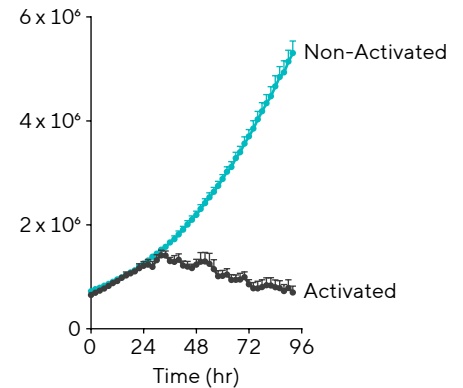


Overlay of All Channels

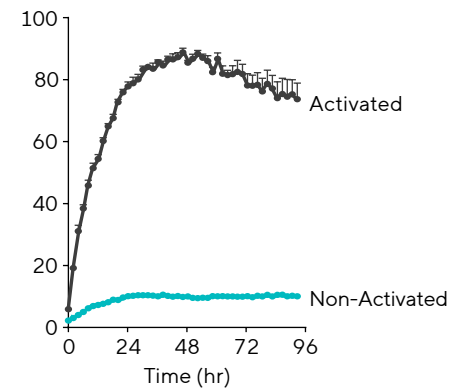


Images shown at 48 h, T:E 1:3

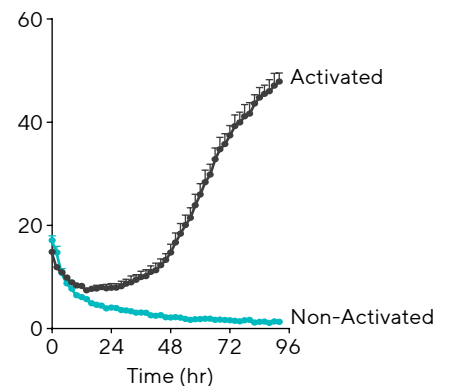
Target Cell Proliferation  
Orange Area (um²/well)



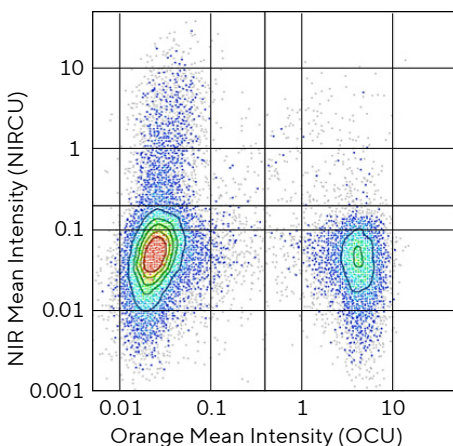
Target Cell Death  
Apoptotic Index



CD8 +ve Cells  
% of Total Effector Cells



Target Cell Classification



# Incucyte<sup>®</sup> S3

More Capacity,  
More Insights



Our flexible assay platform sits inside a standard tissue culture incubator, analyzing even the most sensitive living cells, around the clock, for days, weeks, or months.

This workhorse can support your team throughout the cell culture workflow, from cell culture QC, to cell manipulation, to microplate assays. Plus all users can remotely view experiments as they unfold.

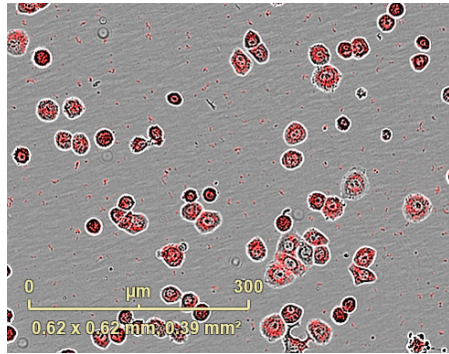
## Key Features

- Robust application suite
- Multi-user support
- Two-color Red/Green plus HD phase imaging
- 4x, 10x, 20x objectives on an automated turret
- Support for 3 interchangeable vessel trays and over 700 vessels, up to 6 microplates in parallel

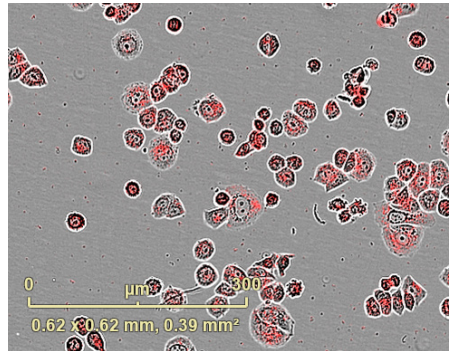
## Internalization of Kadcyta<sup>®</sup> and Trastuzumab

Images taken at 12 h

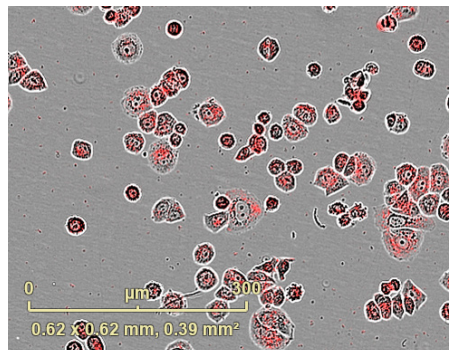
Kadcyta<sup>®</sup>-Fabfluor-pH  
(1.5 µg/mL)



Kadcyta<sup>®</sup>-Fabfluor-pH  
(1.5 µg/mL)

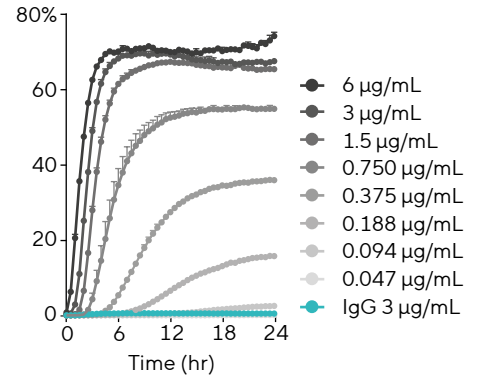


IgG-Fabfluor-pH  
(3 µg/mL)



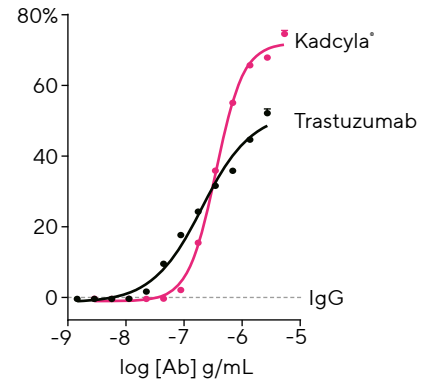
## Internalization Kinetics

Orange Area/  
Phase Area



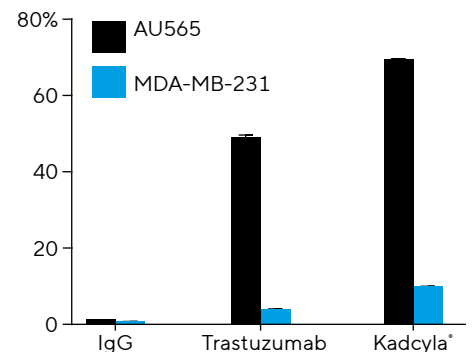
## Potency

Orange Area/Phase Area  
(at 24 h)



## Cell Type Dependence

Orange Area/Phase Area  
(at 24 h)

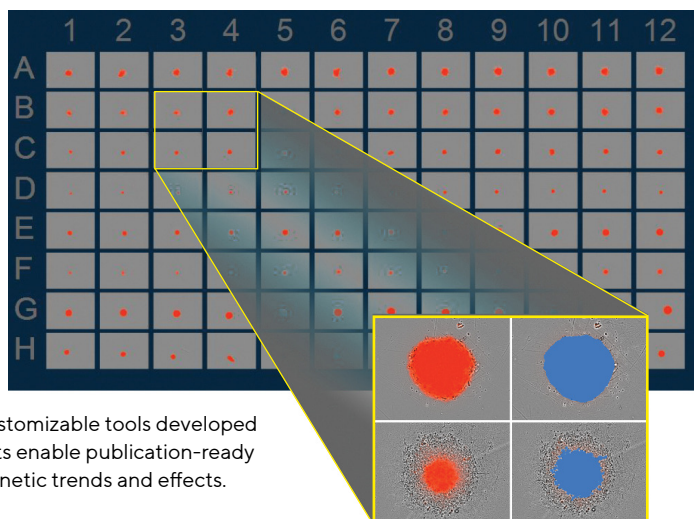


# Incucyte<sup>®</sup> SX1

## Affordable Live-Cell Imaging Without Compromise



Designed with the small lab in mind, the Incucyte<sup>®</sup> SX1 empowers your cell culture workflow. Never miss important insights again. Seamlessly transition from cell culture QC to assay with interchangeable trays for tissue culture flasks, dishes, or multi-well plates.



Flexible, customizable tools developed for biologists enable publication-ready graphs of kinetic trends and effects.

## Key Features

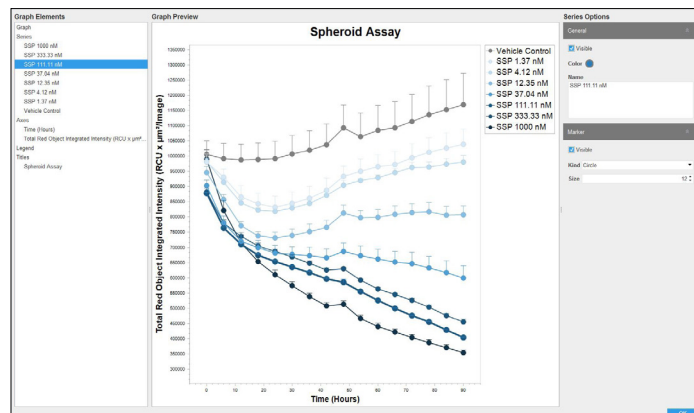
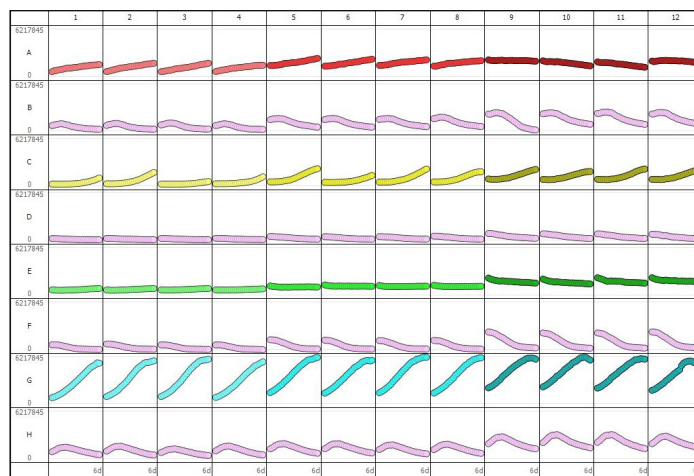
- Robust application suite.
- Two-color Red/Green fluorescence plus HD Phase imaging
- 4x, 10x, or 20x objectives, single position use
- Interchangeable tray to support over 600 vessels, up to 2 microplates in parallel

## Serial Workflow



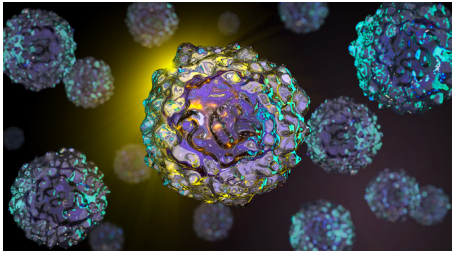
Culture      Manipulate      Assay

## Incucyte Spheroid Assay Analysis Total Red Object Integrated Intensity (RCU x $\mu\text{M}^2/\text{Image}$ )



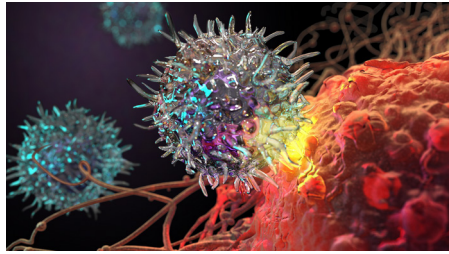
# Tailored Solutions for Your Research Needs

Accelerate your next discovery with the Incucyte® suite of live-cell applications. Gain real-time morphological and phenotypic insight for pathway and mechanistic studies by capturing time-dependent and cell-dependent treatment effects.



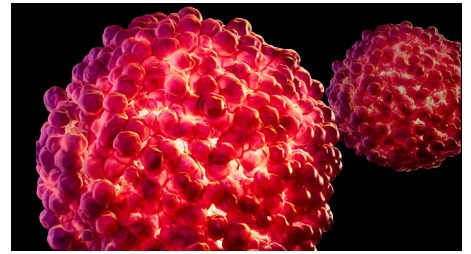
## Cell Health and Proliferation

- Proliferation
- Apoptosis
- Cytotoxicity
- Cell Cycle
- Mitochondrial Membrane Potential
- ATP Metabolism
- Label-free Viability



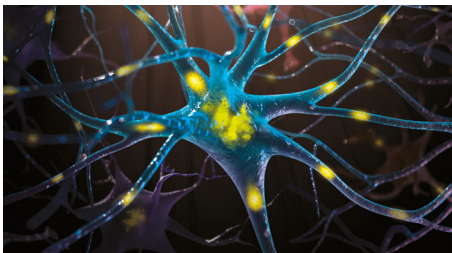
## Cell Function

- Immune Cell Killing
- Antibody Internalization
- Live-Cell Immunocytochemistry
- Phagocytosis
- NETosis
- Neuronal Activity



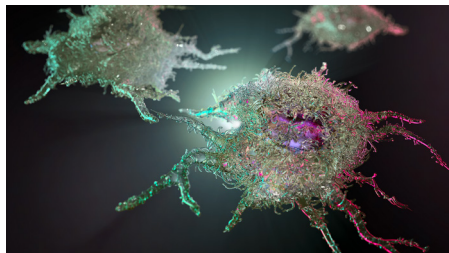
## Assays for 3D Models

- Spheroid Growth
- Spheroid Invasion
- Organoid Assay



## Cell Movement and Morphology

- Chemotaxis Migration and Invasion
- Scratch Wound Migration and Invasion
- Immune Cell Activation and Proliferation
- Neurite Outgrowth
- Morphological Analysis



## Cell Monitoring and Workflows

- EV Uptake Assay
- Organoid Culture QC
- Cell Culture QC
- Dilution Cloning



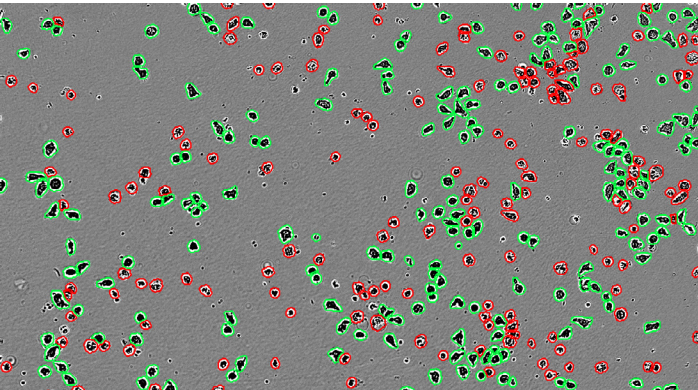
Find reagents and consumables to support these applications via the QR code or at

[sartorius.com/incucyte-shop](https://www.sartorius.com/incucyte-shop)

# Purpose-Built Software for Seamless Analysis and Insight

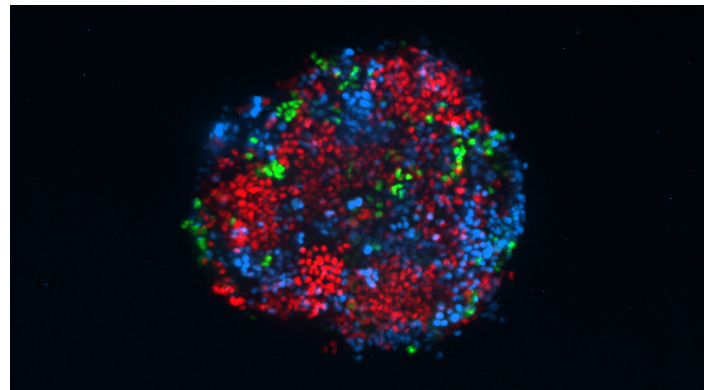
User-friendly software for all scientists across a variety of cell models. Run complex assays and generate reliable, objective, publication-ready data.

## Software Spotlight



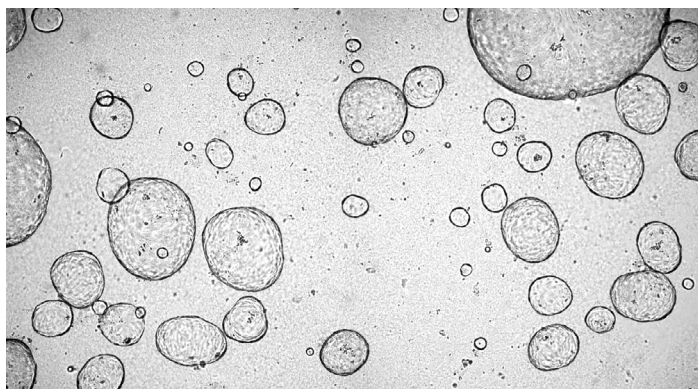
### Incucyte® AI Cell Health Analysis Software Module

Simplify the complexity of classifying live versus dead cells using artificial intelligence (AI)-driven image analysis – with no need for labels.



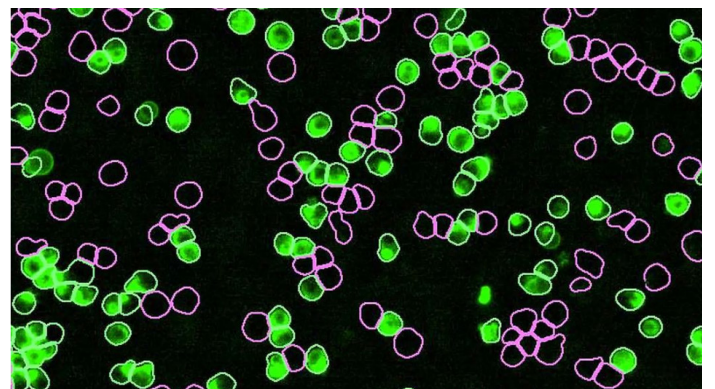
### Incucyte® Spheroid Analysis Software Module

Analyze growth, viability, and invasion of single spheroids in round-bottom wells or multiple spheroids in flat-bottom plates to detect changes inside your tissue culture incubator.



### Incucyte® Organoid Analysis Software Module

Automatically locate and analyze organoids for kinetic quantification of organoid growth, count and morphology.



### Incucyte® Cell-by-Cell Analysis Software Module

Perform label-free counts and subsequent classification and analysis of cell subpopulations in real-time at 96-well throughput.

# Your Biology, Your Solution: Incucyte® Live-Cell Analysis

Tailored live-cell imaging and analysis for every research need, every budget.

System	Camera	Capacity	Imaging Modes	Optical Module	Objectives
Incucyte® CX3	CMOS, 16-bit grayscale	3 tray positions, up to 6 microplates in parallel	<ul style="list-style-type: none"> <li>▪ Spinning disk confocal fluorescence</li> <li>▪ Widefield fluorescence</li> <li>▪ Phase contrast</li> <li>▪ Brightfield</li> </ul>	Green/Orange/Near IR	4x, 10x, 20x three-position automated turret
Incucyte® SX5	CMOS, 16-bit grayscale	3 tray positions, up to 6 microplates in parallel	<ul style="list-style-type: none"> <li>▪ Widefield fluorescence</li> <li>▪ Phase contrast</li> <li>▪ Brightfield</li> </ul>	<ul style="list-style-type: none"> <li>▪ Green/Orange/Near IR (included)</li> <li>▪ Green/Red (available for purchase)</li> <li>▪ Metabolism (available for purchase)</li> </ul>	4x, 10x, 20x three-position automated turret
Incucyte® S3	CMOS, 16-bit grayscale	3 tray positions, up to 6 microplates in parallel	<ul style="list-style-type: none"> <li>▪ Widefield fluorescence</li> <li>▪ Phase contrast</li> <li>▪ Brightfield</li> </ul>	Green/Red	4x, 10x, 20x three-position automated turret
Incucyte® SX1	CMOS, 16-bit grayscale	1 tray positions, up to 2 microplates in parallel	<ul style="list-style-type: none"> <li>▪ Widefield fluorescence</li> <li>▪ Phase contrast</li> <li>▪ Brightfield</li> </ul>	Green/Red	4x, 10x, 20x

System	Light Source	Computing and Storage	Incubator Requirements	Software Compatibility*	Archiving Capability
Incucyte® CX3	3-line laser	43.6 TB RAID Hard Drive 64 GB RAM	>250 L required	ALL – except Incucyte® ATP Analysis	Auto-archive on schedule
Incucyte® SX5	LED	27.3 TB RAID Hard Drive 64 GB RAM	>200 L required	ALL	Auto-archive on schedule
Incucyte® S3	LED	27.3 TB RAID Hard Drive 64 GB RAM	>200 L recommended	ALL – except Incucyte® Neuronal Activity and ATP Analysis	Auto-archive on schedule
Incucyte® SX1	LED	27.3 TB RAID Hard Drive 64 GB RAM	>200 L recommended	ALL – except Incucyte® Neuronal Activity and ATP Analysis	Manual archive

\*Refer to software ordering information for description of available software analysis modules.

## Optical Modules

System	Optical	Channel	Excitation	Emission
Incucyte® CX3	G/O/NIR	Green Orange NIR	488 +/- 5 nm 561 +/- 2 nm 660 +/- 5 nm	506-536 nm 585-638 nm 684-754 nm
Incucyte® SX5*	G/O/NIR	Green Orange NIR	453-485 nm 546-568 nm 648-674 nm	494-533 nm 576-639 nm 685-756 nm
Incucyte® S3	G/R	Green Red	441-480 nm 567-607 nm	503-544 nm 622-704 nm
Incucyte® SX1	G/R	Green Red	441-480 nm 567-607 nm	503-544 nm 622-704 nm

\*Additional modules available for purchase

# Incucyte® Ordering Information

## Live-Cell Analysis Systems & Accessories

Product	Description	Cat. No.	Product	Description	Cat. No.
<b>All Incucyte® Live Cell Analysis Systems include:</b>	<ul style="list-style-type: none"> <li>▪ Unlimited software licenses for standard acquisition and basic analyzer (additional modules are required for certain applications)</li> <li>▪ One year manufacturer's software and service warranty</li> <li>▪ Onsite installation and training</li> </ul>		Incucyte® SX1 Live-Cell Analysis System	<b>Includes image acquisition and analysis system with:</b> <ul style="list-style-type: none"> <li>▪ HD Phase/Green/Red Optical Module</li> <li>▪ Controller with 27 TB storage</li> <li>▪ Minimum of one objective and one tray must be purchased separately</li> </ul>	4788
Incucyte® CX3 Live-Cell Analysis System	<b>Includes image acquisition and analysis system with:</b> <ul style="list-style-type: none"> <li>▪ Confocal spinning disk, widefield fluorescence, HD phase (Green/Orange/Near IR Laser Module)</li> <li>▪ 4x, 10x, and 20x objectives on an automated turret</li> <li>▪ Controller with 43.6 TB storage</li> </ul>	BA-04881	Incucyte® CX3 Data Storage	<ul style="list-style-type: none"> <li>▪ Additional 87.2 TB storage for Incucyte® CX3</li> </ul>	BA-04882
Incucyte® SX5 Live-Cell Analysis System*	<b>Includes image acquisition and analysis system with:</b> <ul style="list-style-type: none"> <li>▪ HD Phase/Green/Orange/Near IR Optical Module</li> <li>▪ 4x, 10x, and 20x objectives on an automated turret</li> <li>▪ Controller with 27 TB storage</li> </ul>	4816	Incustore® Storage Unit	<ul style="list-style-type: none"> <li>▪ Additional 33 TB storage for Incucyte® 4689 SX5, S3 or SX1</li> </ul>	
Incucyte® S3 Live-Cell Analysis System	<b>Includes image acquisition and analysis system with:</b> <ul style="list-style-type: none"> <li>▪ HD Phase/Green/Red Optical Module</li> <li>▪ 4x, 10x, and 20x objectives on an automated turret</li> <li>▪ Controller with 27 TB storage</li> </ul>	4647	Incucyte® GPU (Graphics Processing Unit)	<ul style="list-style-type: none"> <li>▪ The Incucyte® Cell Health Software Module utilizes a Graphics Processing Unit (GPU) co-processor, a two- to fourfold improvement in the processing times</li> <li>▪ Installed as a drop-in hardware upgrade to the controller (2022B software version or higher)</li> </ul>	BA-04870

\* Additional optical modules available, please contact your technical sales specialist



# Incucyte® Ordering Information

## Software Modules

Product	Description	Cat. No.
Incucyte® AI Cell Software Module	Simplify the complexity of classifying live versus dead cells using artificial intelligence (AI)-driven image analysis – with no need for labels. Requires a GPU co-processor (Cat. No. BA-04870) and 2022B or higher software version.	BA-04871
Incucyte® Cell-by-Cell Software Module	Perform label-free cell counts and subsequent classification and analysis of cell subsets over time.	9600-0031
Incucyte® Advanced Label-Free Classification Software Module	Monitor cell morphology changes and determine live/dead cell counts or classify cells based on morphology via label-free multivariate analysis. Module requires Incucyte® Cell-by-Cell Analysis Software Module (Cat. No. 9600-0031).	BA-04867
Incucyte® Spheroid Software Module	Quantify spheroid growth, health, and invasion over time.	9600-0019
Incucyte® Organoid Software Module	Quantify label-free differentiation and maturation of organoid cultures or assess treatment effects on organoid growth.	9600-0034
Incucyte® Scratch Wound Software Module	Quantify cell movement into cell-free zones. Requires Incucyte® Cell Migration Kit and Incucyte® Imagelock 96-well Microplates.	9600-0012
Incucyte® Chemotaxis Software Module	Quantify the dynamics of chemotactic migration. Requires Incucyte® Clearview Microplates.	9600-0015
Incucyte® Neurotrack Software Module	Quantify the dynamics of neurite outgrowth.	9600-0010
Incucyte® Neuronal Activity Software Module	Quantify the dynamics of neuronal activity.	9600-0032
Incucyte® ATP Analysis Software Module	Quantify cell type-specific ATP content over time.	9600-0033

Product	Description	Cat. No.
Incucyte® 21 CFR Part 11 Software Module	Support compliance needs by configuring full system access with user permissions, experiment visibility, and adherence to templates.	BA-04876
Incucyte® Angiogenesis Software Module	Quantify the dynamics of tube formation during angiogenesis.	9600-0011
Incucyte® AI Nuclei Detection Software Module	Enables label-free, high-accuracy segmentation of adherent cell nuclei using HD phase-contrast imaging	BA-04897
Incucyte® 3D Object Classification Analysis Software Module	Automate the identification and classification of spheroids and organoids based on key morphological and functional features such as size, shape, and fluorescence intensity	9600-0011

Harness the power of live-cell analysis with a full range of Incucyte® reagents and consumables to revolutionize the way you quantify cell behavior.

## Maximize Equipment Performance With Our Tailored Service Plans

Ensure optimal performance and longevity of your equipment with our comprehensive service plans. Choose the plan that best suits your laboratory's needs.

Service Plans	Preventive	Lightning	Compliance	IQOQ
Incucyte® SX1	84MJEX1	84MKEX1	84MLEX1	84QAEX1
Incucyte® S3	84MJES3	84MKES3	84MLES3	84QAES3
Incucyte® SX5	84MJEX5	84MKEX5	84MLEX5	84QAEX5
Incucyte® CX3	84MJEC3	84MKEC3	84MLEC3	84QAEC3

Learn more about our offerings: <https://sar.to/Incucyte-Service>

## Comprehensive Support

From installation to training, our team is here to support your research journey.

Benefit from extensive application support and training, given by expert Sartorius Field Application Specialists. [AskAScientist@Sartorius.com](mailto:AskAScientist@Sartorius.com)

(North America and Asia Pacific)

[IncucyteTrainingEMEA@Sartorius.com](mailto:IncucyteTrainingEMEA@Sartorius.com)  
(Europe, Middle East and Africa)



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