

INCUCYTE® LIVE-CELL ANALYSIS SYSTEM

Cell Health and Viability Assays

Real-time automated measurements of cell health and viability inside your incubator

IncuCyte®
by SARTORIUS

See what your cells are doing and when they do it

Real-time cell health and viability analysis inside your incubator

Drastically improve your lab's productivity by performing real-time IncuCyte® cell health and viability assays. Perform multiplexed experiments and analyze data automatically without removing your cells from the incubator, saving hours of valuable time and maintaining the quality of your experiments.



Ask new questions

- Study a variety of cell types and cell models with a flexible assay platform
- Analyze cells in a stable, physiologically-relevant environment



Get new answers

- Never miss a data point with real-time continuous analysis
- Conduct routine monitoring and get answers to unique scientific questions with kinetic, image-based measurements



Improve productivity

- Reduce time spent troubleshooting experiments with IncuCyte® reagents and protocols
- Enjoy walk-away convenience as images are automatically acquired and analyzed
- Multiplex measurements in 96- and 384-well assay formats



Protect your cells

- Perform analysis *without ever removing cells from the incubator or disturbing cultures*
- Maintain cell health with non-perturbing reagent formulations

Confidently assess and measure cell health

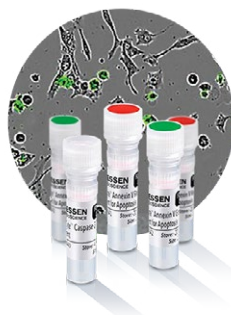
Measurements of cell health (proliferation, apoptosis and cytotoxicity) are essential for studying the effects of drugs, culture conditions or genetic modifications on cell growth or viability.

- Rank compounds in drug discovery screens
- Investigate the cellular changes that underlie disease pathologies such as cancer, autoimmune disease and neurodegeneration
- Assess factors affecting specific biological processes, such as immune cell activation or stem cell differentiation



Proliferation Assays

Measure label-free growth or growth inhibition and count living cells in real time.



Apoptosis Assays

Detect apoptosis in living cells and in real time using simple mix-and-read protocols.



Cytotoxicity Assays

Real-time measurements of cell viability using simple mix-and-read protocols suitable for screening.

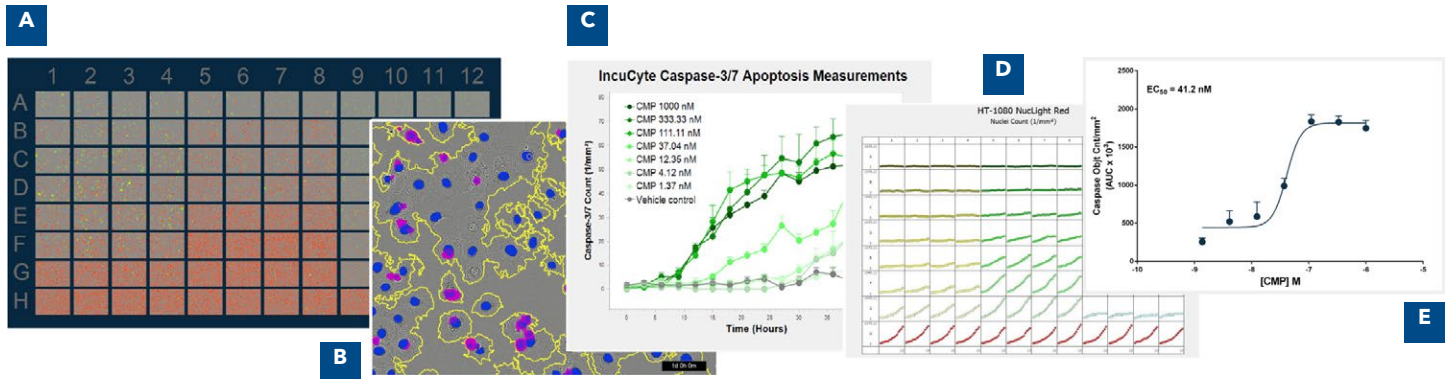
View and analyze cell health assays in real-time

Powerful visualization of apoptosis, cytotoxicity, proliferation and spheroid growth & shrinkage

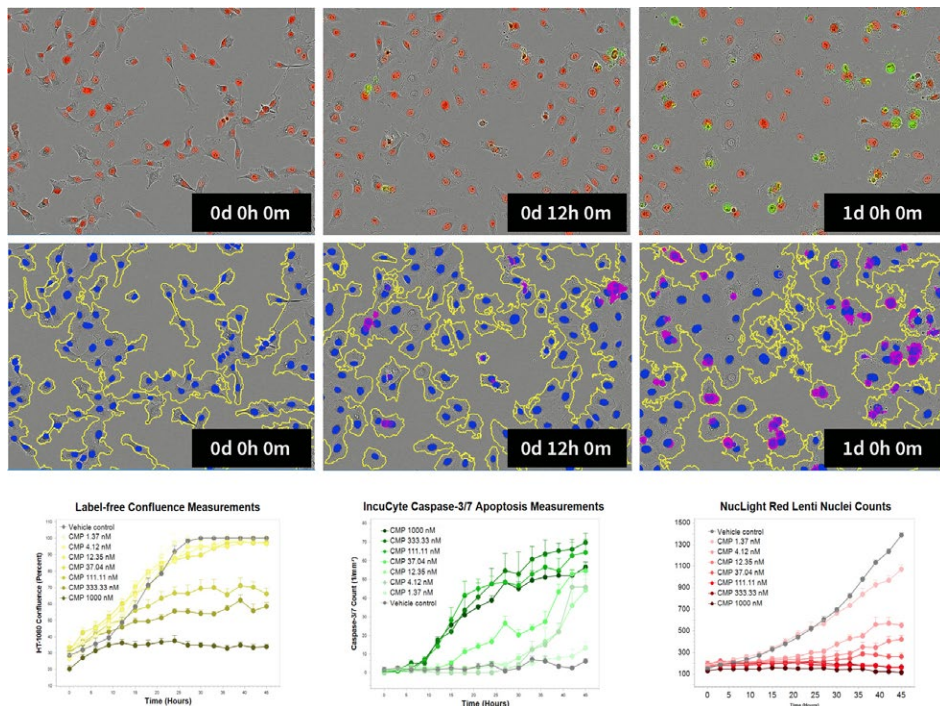
- View all of your wells at once to quickly assess trends and outliers.
- Correlate fluorescent signal from the IncuCyte® reagents with morphological changes
- Easily compare images and metrics to draw conclusions rapidly

Efficient and reproducible image analysis

- Integrated processing and analysis software enables reproducible, real-time, quantitative analysis of cell health
- Unique image calibration process and unbiased analysis allows for re-use of image processing parameters on experiments performed now and in the future



Derive deeper insights with real-time live-cell analysis. (A) Automatically acquire images over time and then use IncuCyte® VesselView to view images of all locations in the vessel at once. Quickly assess experimental results, plus zoom in on images of interest, (B) automatically identify regions of interest via masks, (C) generate presentation-ready timelapse graphs, (D) view all 96- or 384-well kinetic trends at once with IncuCyte® PlateGraph, and (E) export data to calculate EC₅₀ or IC₅₀ response values.



Multiplex reagents for additional insight

Derive meaningful biological insight with multiple indicators of cell health

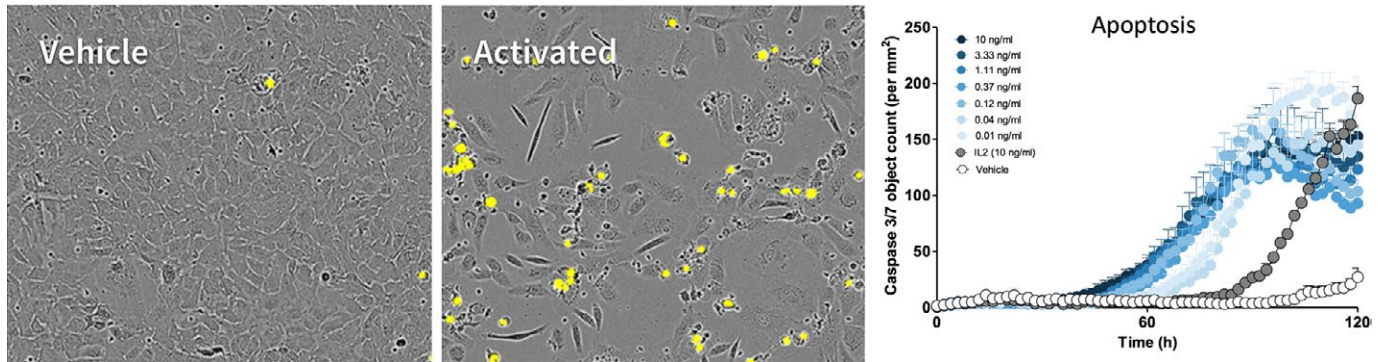
- Monitor label-free confluence, cell counts and apoptosis or cytotoxicity in a single well
- User-friendly image segmentation tools allow detection of cell health over time
- Real-time kinetic graphs reveal concentration-dependent treatment effects

Profile biological activity overtime with multiple imaging channels. IncuCyte® NuLight Red HT-1080 cells treated with 3-fold decreasing concentrations of camptothecin and imaged every 3 hours. Images were automatically masked to measure confluence (yellow mask), number of apoptotic cells (purple mask) detected using IncuCyte Caspase 3/7, and number of viable cells (blue mask) over time.

Gain insights into advanced cell models using cell health reagents

Real-time visualization and automated analysis of immune cell-mediated killing of tumor cells

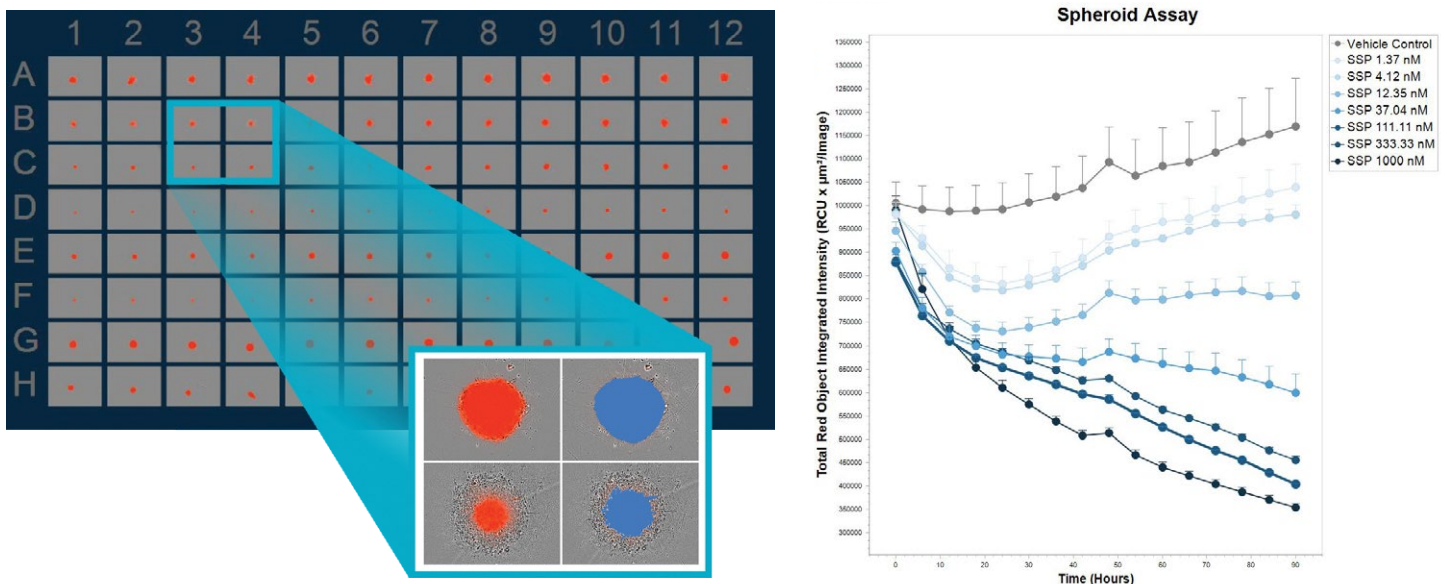
- Flexible assay format for PBMCs, cytotoxic T lymphocytes and NK cells co-cultured with adherent or suspension tumor cells
- Reveal the dynamic interactions between immune cells and cancer cells



Measure immune-mediated tumor cell apoptosis. User-friendly IncuCyte® software enables direct image-based detection of apoptotic tumor cell death: (a) MDA-MB-231 cells co-cultured in the presence of PBMCs, (b) detection of MDA-MB-231 apoptosis mediated by activated PBMCs using IncuCyte Caspase-3/7 reagent, (c) kinetic readouts of immune cell killing.

Track and quantify spheroid formation, growth, and shrinkage in real-time

- Measure spheroids in 96- and 384-well formats, with or without label
- Assess spheroid morphology and effects of test samples in quantitative pharmacology



Quantify spheroid biology in brightfield and fluorescence. SKOV-3 transduced with NuLight Red Lentivirus (NLR) were grown in ULA U-bottom 96-well plates for 3 days then treated ± 1 μM camptothecin, showing disruption of compact spheroid. Time course of the effect of staurosporine on the growth of NLR SKOV-3 spheroids.

Simple, flexible sample prep

Compatible with a wide range of culture vessels and applications

- Monitor flasks or dishes to ensure cell health before your experiment with our label-free confluence analysis
- Conduct a wide variety of cell health assays in 96- and 384-well microplates, up to six at a time simultaneously

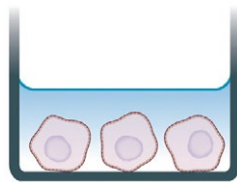
IncuCyte® reagents optimized for minimal cell perturbation and maximum efficiency

- Maintain cell health and morphology with non-perturbing reagent formulations
- Utilize proprietary formulations and reduce time spent selecting and troubleshooting reagents from multiple vendors that are not validated for live-cell assays
- Mix-and-read reagents and protocols save time – no washing, no fixing, no lifting

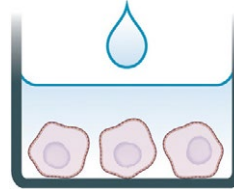
QUICK GUIDE

Proliferation, apoptosis, and cytotoxicity assays

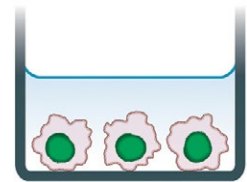
1 SEED CELLS



2 PREPARE REAGENT AND TREAT CELLS



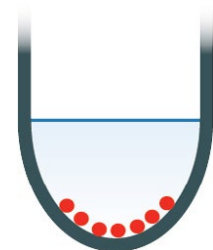
3 LIVE-CELL ANALYSIS



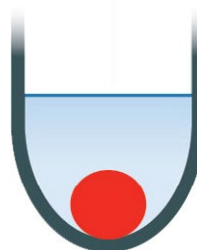
QUICK GUIDE

Spheroid assay

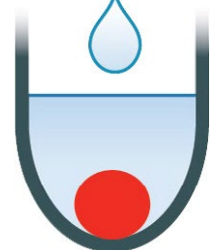
1 CELL SEEDING



2 SPHEROID FORMATION (Day 0-3)

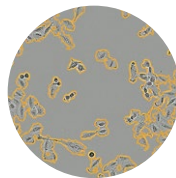


3 ADD TREATMENTS (Day 3)

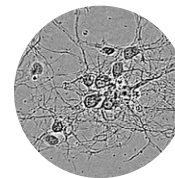


Compatible with your choice of cells

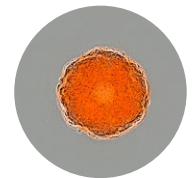
The IncuCyte solution gives you freedom to choose—work with a broad range of cell types and models.



Select your cell type
Adherent and suspension cells



Choose your research area
Neuronal, immune and tumor cells



Explore co-cultures or spheroids
Tumor and stromal, target and effector cells or spheroid growth models

Easy and complete cell health workflow with the IncuCyte® system



Simple sample preparation

Mix-and-read 96/384-well protocols—no washing, no fixing, no lifting



Set up & walk away

Setup automated acquisition and analysis parameters with confidence—no need to pre-define the assay endpoint



Measure long term

Flexibility to measure from hours to weeks



Analyze in real-time

Make decisions about your experiment as the story unfolds

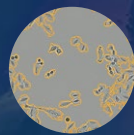
Ordering information

Contact us at sales@essenbio.com to place an order or for more information.

APPLICATION	PRODUCT	QTY	CAT. NO.
Proliferation Label and count living cells in real-time	IncuCyte® NuLight Green Lentivirus Reagent (EF-1 α, Puro)	0.2mL	4624
	IncuCyte® NuLight Red Lentivirus Reagent (EF-1 α, Puro)	0.2mL	4625
	IncuCyte® NuLight Green Lentivirus (EF-1 Alpha Promoter, Bleomycin)	0.2 mL	4626
	IncuCyte® NuLight Red Lentivirus (EF-1 Alpha Promoter, Bleomycin)	0.2 mL	4427
	IncuCyte® NuLight Green Lentivirus (EF-1 Alpha Promoter, Puromycin)	0.6 mL	4475
	IncuCyte® NuLight Red Lentivirus (EF-1 Alpha Promoter, Puromycin)	0.6 mL	4476
	IncuCyte® NuLight Green Lentivirus (EF-1 Alpha Promoter, Bleomycin)	0.6 mL	4477
	IncuCyte® NuLight Red Lentivirus (EF-1 Alpha Promoter, Bleomycin)	0.6 mL	4478
	IncuCyte® NuLight Rapid Red Reagent	One vial: 50 µL	4717
Cytotoxicity Detect and count non-viable cells in real-time	IncuCyte® Cytotox Red Reagent	5 µL x 5	4632
	IncuCyte® Cytotox Green Reagent	5 µL x 5	4633
Apoptosis Detect and quantify apoptotic cells in real-time	IncuCyte® Caspase 3/7 Green Reagent	20 µL	4440
	IncuCyte® Caspase 3/7 Red Reagent	20 µL	4404
	IncuCyte® Annexin V Red Reagent	1 vial, 100 tests	4641
	IncuCyte® Annexin V Green Reagent	1 vial, 100 tests	4642
Spheroids Measure spheroid growth and shrinkage in real-time	IncuCyte® Spheroid Software Module	1	9600-0019

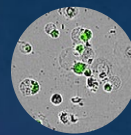
Key cell health applications using the IncuCyte live-cell analysis system

Learn more at essenbioscience.com/applications



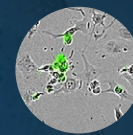
Proliferation

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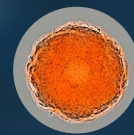
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Cytotoxicity

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Spheroids

Measure spheroid growth and shrinkage over time with or without labels.