

Cytation C10, 7, 5, 1, BioSpra

Технические характеристики

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Череповец (8202)49-02-64
Ярославль (4852)69-52-93

CYTATION|C10

confocal imaging reader

Cytation C10 brings cost-effective automated spinning disk confocal microscopy to any lab that needs it along with established multi-mode reading design in a single, easy-to-use instrument.

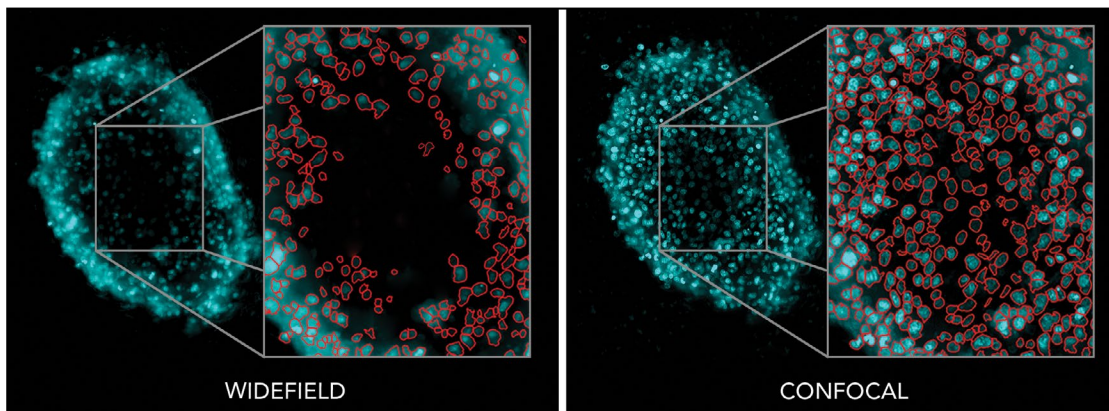


Compact, affordable confocal imager for every laboratory



Expertise gained over several years of Cytation development, along with customer feedback, resulted in the Cytation C10.... an automated confocal microscope with excellent performance at a truly attainable price.

Confocal: Improved image quality and analysis



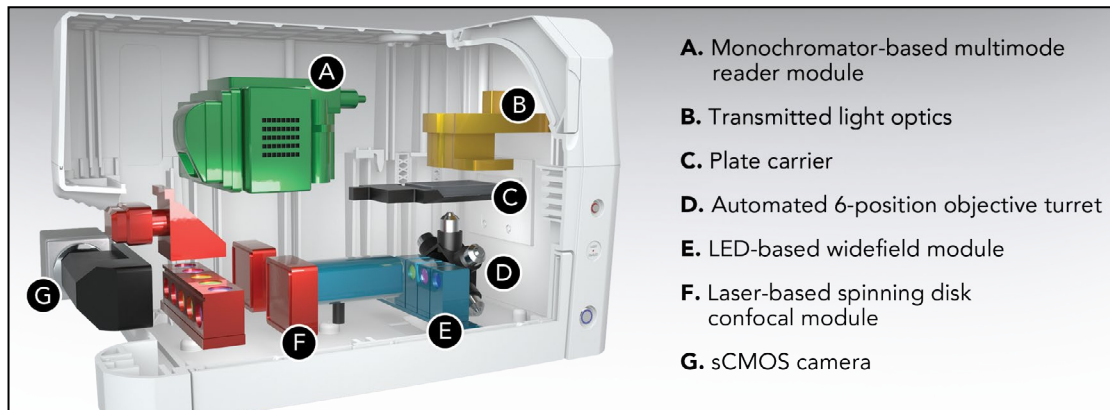
Confocal microscopy can enable you to see a level of detail in your samples that is not possible with widefield optics. Not only can you obtain improved image quality, you can get improved quantification and analysis with confocal images and Gen5 software.

High quality optical components



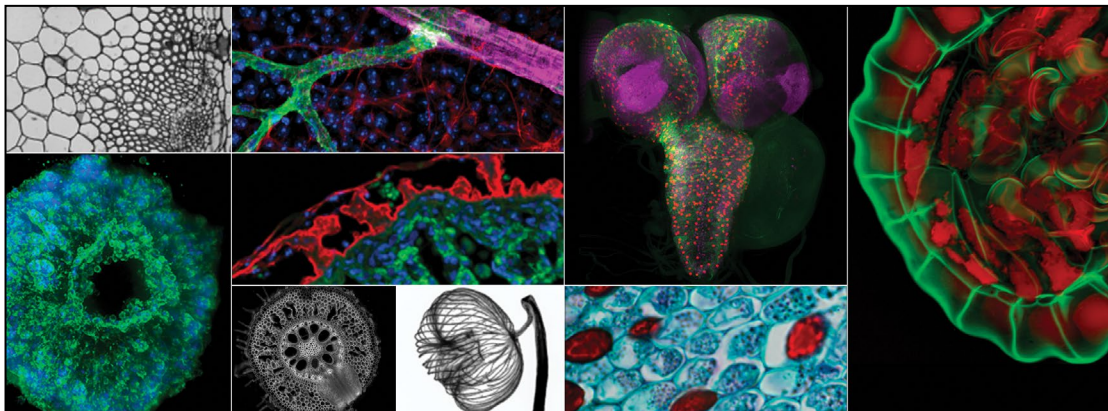
High quality objectives, filters and other components including Olympus objectives, Hamamatsu sCMOS Orca camera and Semrock filters and other well-known brands, are used in Cytation C10, enabling the capture of stunning, publication-quality images.

Confocal imaging and multi-mode plate reader in one



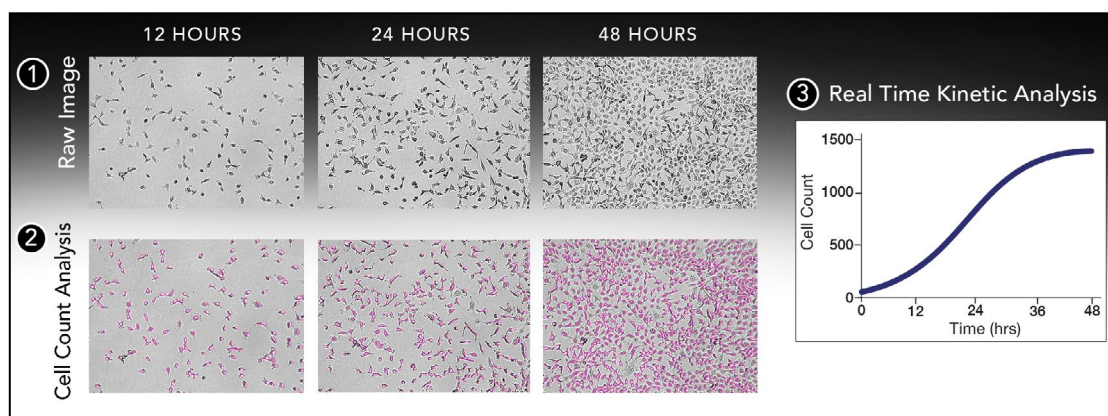
With a combination of spinning disk confocal and widefield imaging, plus multi-mode reader, Cytation C10 is truly ready for any assay. And since Cytation C10 is a modular, upgradable instrument, you can get the functionality you need today and add modules later as your needs expand.

Confocal plus widefield = stunning images and analysis



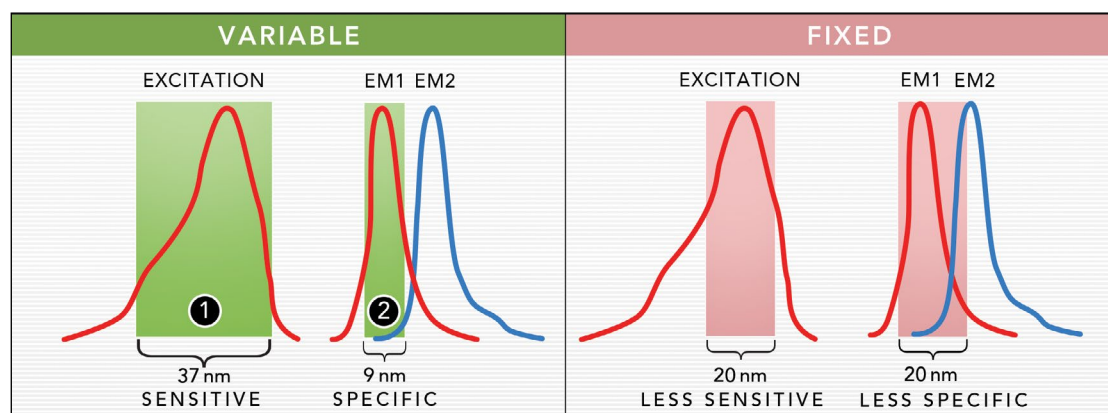
Cytation C10 captures stunning detail in a wide variety of sample types. Use widefield imaging for faster acquisition of large samples at lower magnification, switch to confocal to image small intracellular details or 3D samples. Or combine both modes for highly multiplexed, multi-parameter imaging experiments.

Environmental controls for live cell imaging



Successful live cell kinetic imaging relies on a consistent environment, including temperature control and CO₂/O₂ control and monitoring. Cytation C10 provides the perfect environment to grow and analyze live cells over time. Powerful movie maker and kinetic analysis software tools allow visualizing and analysis of time-lapse experiments.

Variable bandwidth for sensitivity and specificity



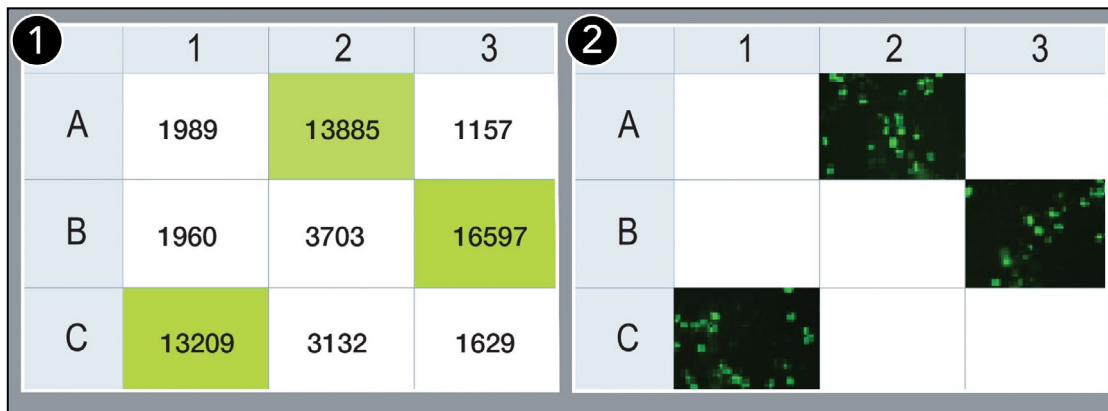
The plate reader optics of Cytation use a quad monochromator design with variable bandwidth. The bandwidth can be set anywhere between 9 and 50 nm in 1 nm increment. Large bandwidth settings **(1)** provide increased sensitivity and lower limits of detection. Small bandwidth settings **(2)** provide increased specificity when multiple signals are present, which reduces signal crosstalk and enhances assay performance.

Cytation C10: Ready for any application

- 3D cell culture
- Nucleic acid quantification
- Live cell imaging
- Biochemical assays
- Label-free cell counting
- Histology
- Calcium flux
- Apoptosis & necrosis
- Cell migration & invasion
- Cell proliferation
- Cell viability & toxicity
- Confluence
- Fast kinetics
- Genotoxicity
- Immunofluorescence
- Microbiology
- Phenotypic assays
- Stem cell differentiation
- Transfection efficiency
- Whole organism imaging
- Normalization
- Phagocytosis
- Signal transduction
- Translocation

The combination of confocal and widefield imaging with multi-mode detection will transform your laboratory workflows and increase productivity. Cytation C10 is ready for any application.

Hit-picking: Multi-mode detection + imaging saves time and data storage

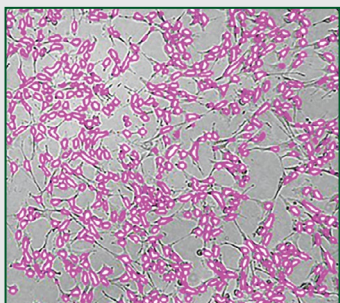


(1) Plate reader quickly identifies GFP positive wells. **(2)** Only GFP positive wells are imaged, saving both time and computer memory.

Imaging data sets can take a long time to acquire and require large data storage capacity. The unique hit-picking function takes advantage of the embedded plate reader optics. Set the hit picking criteria, quickly pre-screen the microplate with the plate reader optics and Cytation C10 will automatically image the samples that meet your criteria, saving both time and hard drive space.

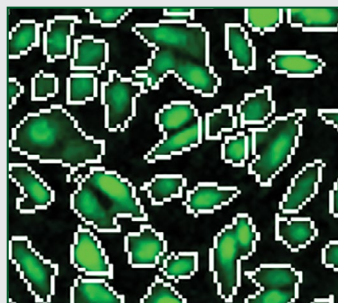
A P P L I C A T I O N S

Label-free cell counting



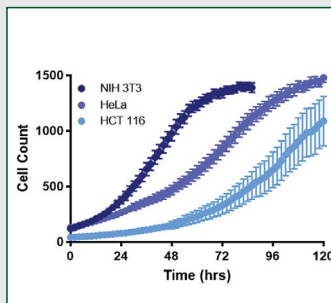
Use high contrast brightfield imaging for accurate label-free cell counting without the need for cell labeling dyes.

Calcium kinetics



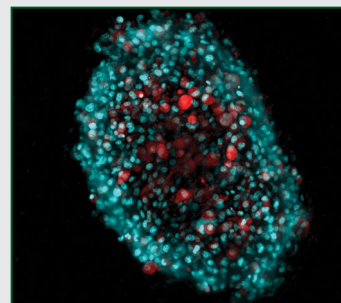
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Time-lapse live cell imaging



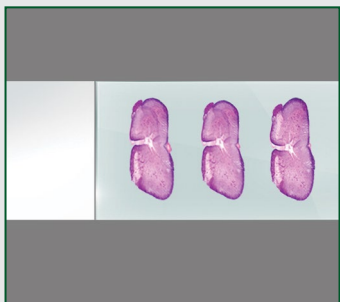
Cell proliferation studies require controlled environments. Cytation C10 automates image capture through analysis.

3D cell culture



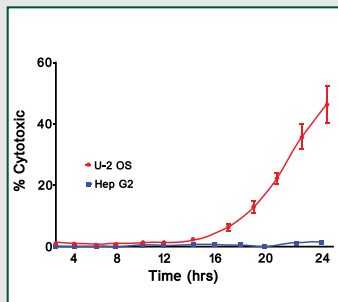
Automate 3D spheroid and tumour assays using environment control and automated media exchange with a BioTek liquid handler. Z-stack, z-project and analyze with Gen5.

Slide scanning



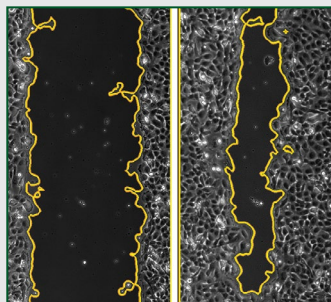
H&E staining and color brightfield allow easy, rapid image capture and analysis. Automate and increase throughput by integrating Cytation C10 to BioStack Microplate Stacker.

Cell viability/toxicity



Classic live/dead assays use fluorescent probes or membrane-impermeable dyes; viability or toxicity is measured in real time.

Cell migration



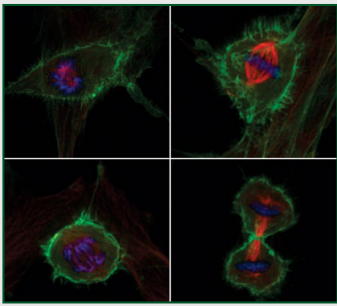
The time-lapse imaging and environmental controls in Cytation C10, enable kinetic cell migration assay imaging.

Whole organism imaging



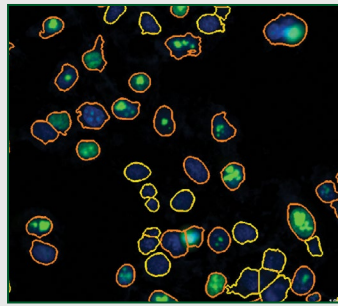
Essential to current drug screening methods, whole organisms like zebrafish and nematodes are effectively imaged and analyzed with Cytation C10 and Gen5 software.

Cell cycle analysis



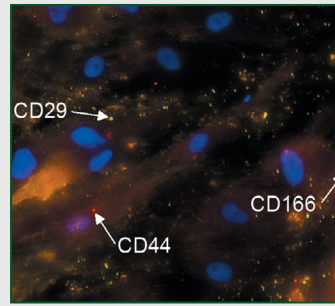
The progression of cellular growth through the cell cycle is a highly regulated process. Automated histogram analysis of objects facilitates threshold definition.

Transfection efficiency



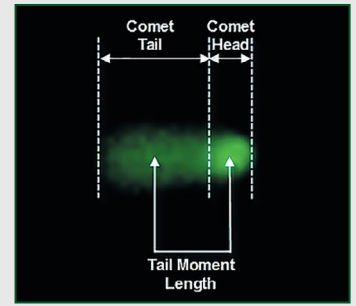
Cytation C10 provides intuitive image analysis for automating the assessment of transfection efficiency.

Stem cell differentiation



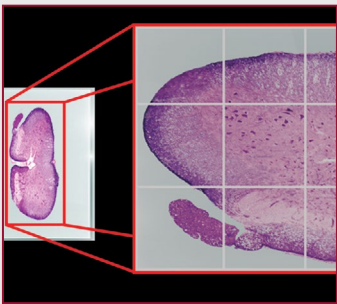
Cytation C10 facilitates the process of stem cell differentiation to find highly physiologically relevant cells for drug discovery.

Genotoxicity



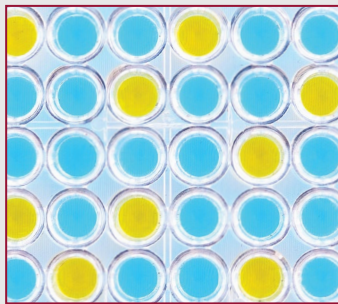
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Automatic ROI identification



An accelerated process for imaging ROIs in complex microscopic samples: use the functionality in Cytation C10 to scan samples at low magnification to find ROIs. Then scan at higher magnification.

ELISA



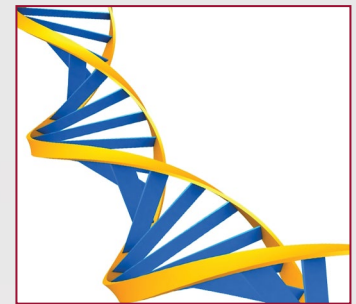
ELISA methods with colorimetric, fluorescent and luminescent substrates are easily detected with Cytation C10.

Luciferase reporter assays



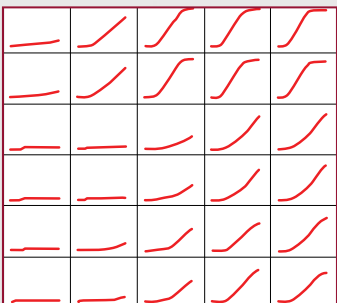
Luciferase-based reporter assays measure luminescent signal, allowing the quantification of the activity of factors affecting the signaling pathways under investigation.

Nucleic acid & protein quantification



Nucleic acid and protein quantification assays can be executed by spectrophotometric or fluorescent determination with Cytation C10, in microplates or in micro-volumes with the Take3 Plate.

Cell growth



Microbial growth assays including yeast and bacteria can be measured by several methods, including turbidimetric measurements with Cytation C10.



TECHNICAL DETAILS

General	
Microplate types	Imaging: 6- to 1536-well plates Detection: monochromator: 6- to 384-well plates
Other labware supported	Microscope slides, Petri and cell culture dishes, cell culture flasks (T25), counting chambers (hemocytometer)
Environmental controls	Temperature control to 45 °C CO ₂ and O ₂ control
Shaking	Linear, orbital, double-orbital with user-selectable amplitude
Automation compatibility	BioStack, BioSpa 8 and 3rd party products
Software	Gen5 Microplate Reader and Imager Software (included) Optional software: <ul style="list-style-type: none"> • Gen5 Image +: Image analysis • Gen5 Image Prime: Advanced image analysis • Gen5 Secure, Gen5 Secure Image+, Gen5 Secure Image Prime, Gen5 Secure Image Prime: 21 CFR Part 11 compliant features • Auto ROI module, Spot Count module
Imaging	
Imaging modes	Confocal: fluorescence Widefield: fluorescence, brightfield, high contrast brightfield, color brightfield and phase contrast
Imaging methods	Single color, multi-color, time lapse, montage, z-stacking, z-stack montage
Camera options	Hamamatsu scientific CMOS camera 16-bit Sony CMOS camera
Light sources	Confocal: 6-line laser Widefield: Long-life LEDs
Objectives/capacity	1.25x to 60x/ 6-position automated turret
Imaging filter cubes available	Confocal: CFP, CY5, DAPI, GFP, RFP, TRITC Widefield: More than 20 filter/LED cubes available
Imaging filter cubes capacity	Confocal: 4 user-replaceable fluorescence cubes Widefield: 4 user-replaceable fluorescence cubes plus brightfield
Autofocus methods	Image-based autofocus Laser autofocus
Multi-Mode Detection	
Detection modes	UV-Vis absorbance, fluorescence intensity, luminescence
Reading methods	Endpoint, kinetic, spectral scanning, well area scanning
Physical Characteristics	
Dimensions	18.5" H x 27" W x 20" D (45.72 46.9 cm x 68.6 cm x 50.8 cm)
Weight	122 lbs (53.3 Kg)
Power	100-240VAC @50/50 Hz input Instrument: External 250 W power supply Laser light source: External 250 W power supply Hamamatsu sCMOS camera: External 75 W power supply
Regulatory	
Regulatory	CE and TUV marked. RoHS compliant. Models for In Vitro Diagnostics may be available.

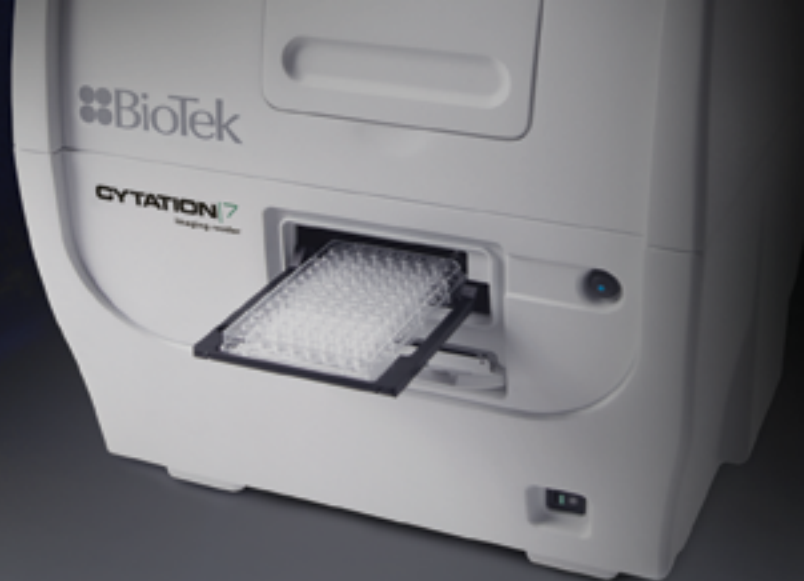
For Research Use Only. Not for use in diagnostic procedures.



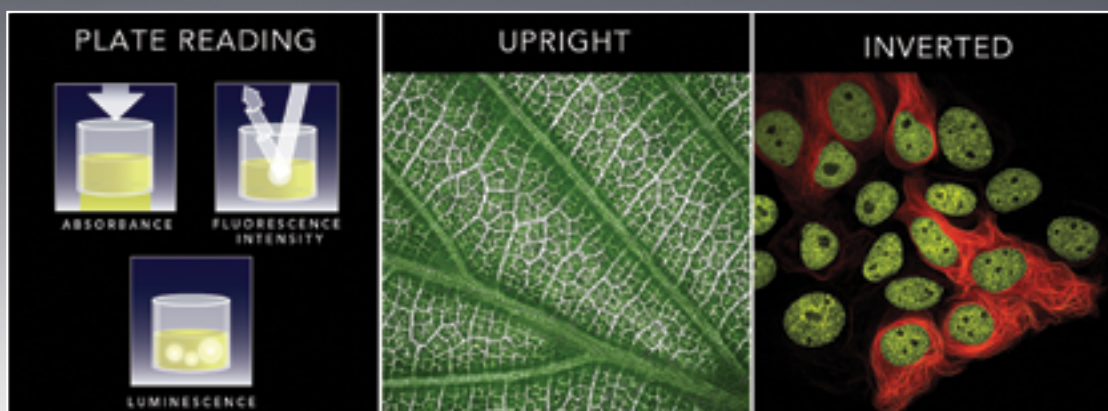
CYTATION 7

cell imaging multi-mode reader

Cytation 7 is BioTek's most comprehensive imaging plate reader with both inverted and upright microscopy enabling a wide range of applications in a compact and easy-to-use instrument.

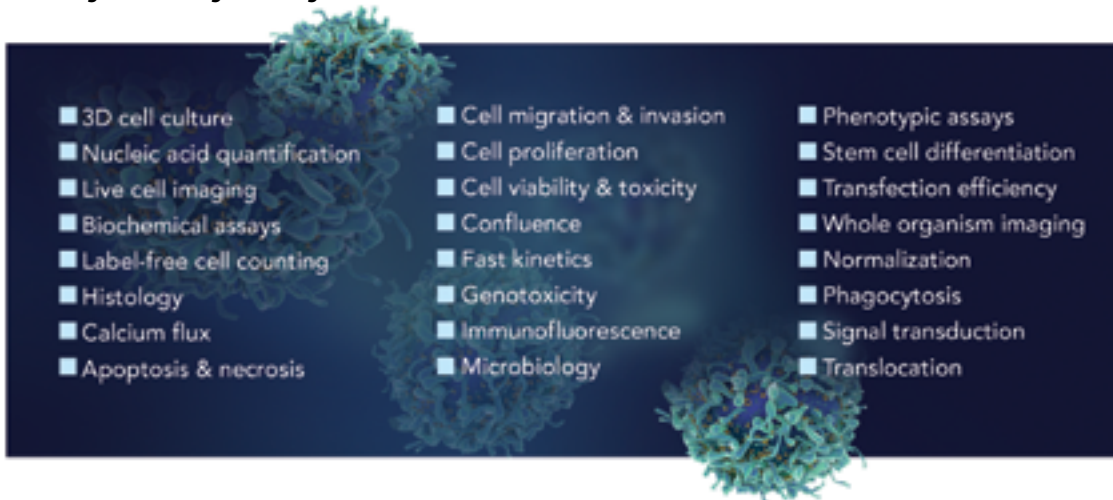


Multi-mode plate reader with sophisticated imaging



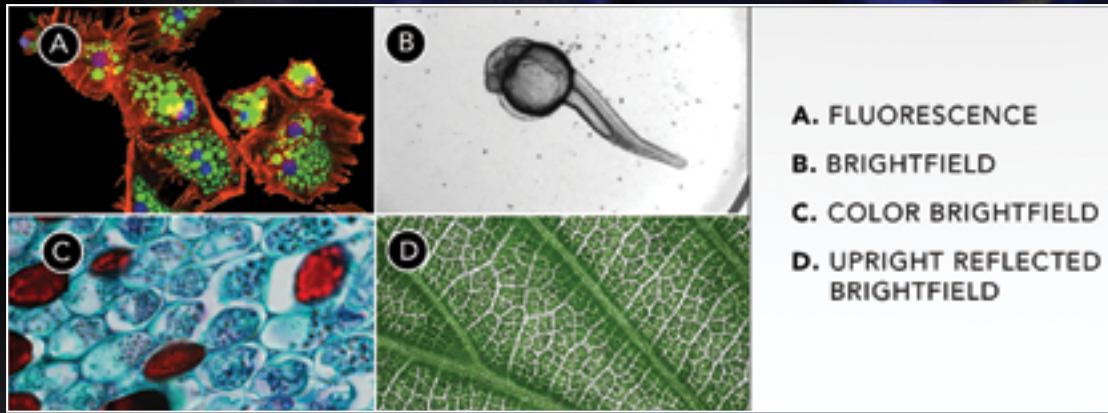
Cytation 7 builds on the legacy of the BioTek line of Synergy and Cytation readers with modular and upgradeable modes. Cytation 7 includes both upright and inverted microscopy optics which opens up a wide range of cellular and reflected light applications that cannot be performed on a standard plate reader. Information on cell morphology, localization of signal, cell count, object identification and quantification can be obtained with Cytation 7's imaging modes. The monochromator plate reader optics allows running all of the standard plate reader assays.

Ready for any assay



With its combination of flexible plate reader and advanced microscopy mode, Cytation 7 is truly ready for any assay. Contact us to learn how Cytation 7 can transform your lab and greatly increase your productivity.

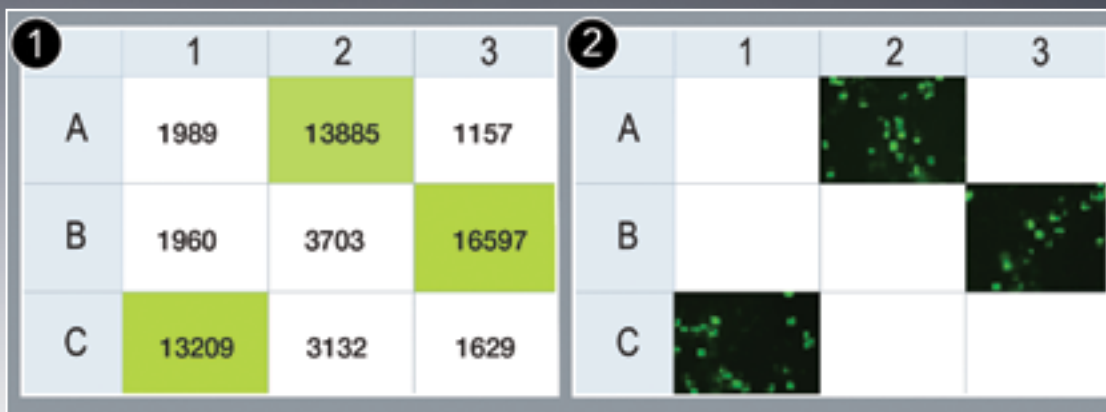
Comprehensive imaging solution



Cytation 7's inverted microscopy module supports fluorescence, brightfield and color brightfield from 1.25x to 60x to analyze both large objects and intracellular details.

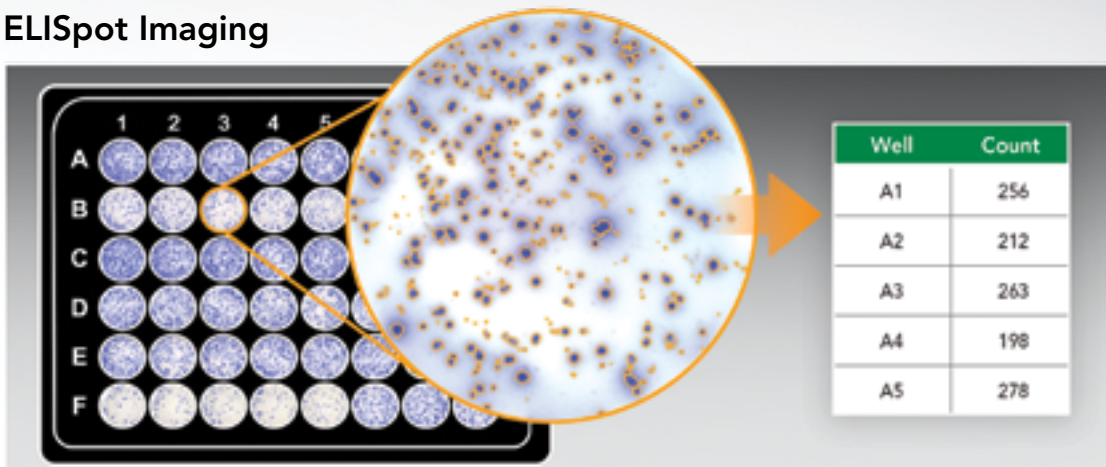
Cytation 7's upright reflected light imaging module enables a broad range of applications such as ELISpot, colony counting, material inspection, and much more.

Hit-picking: Multi-mode detection + imaging



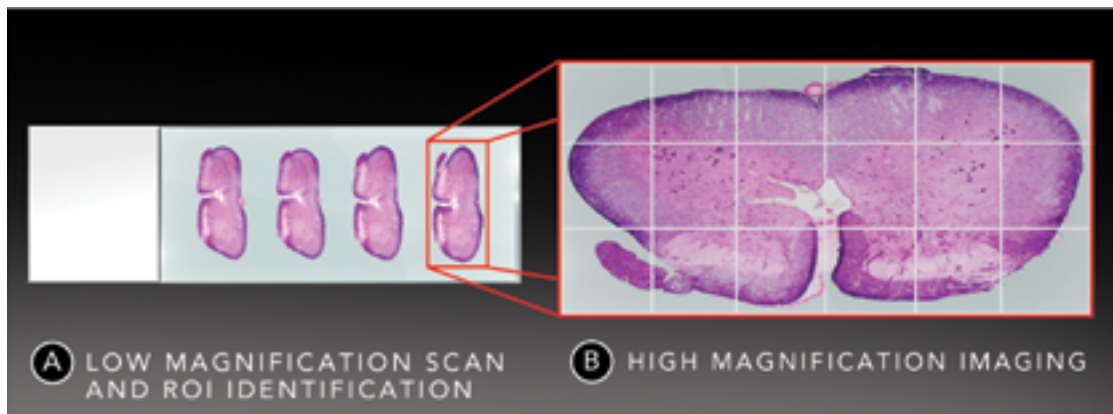
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ELISpot Imaging



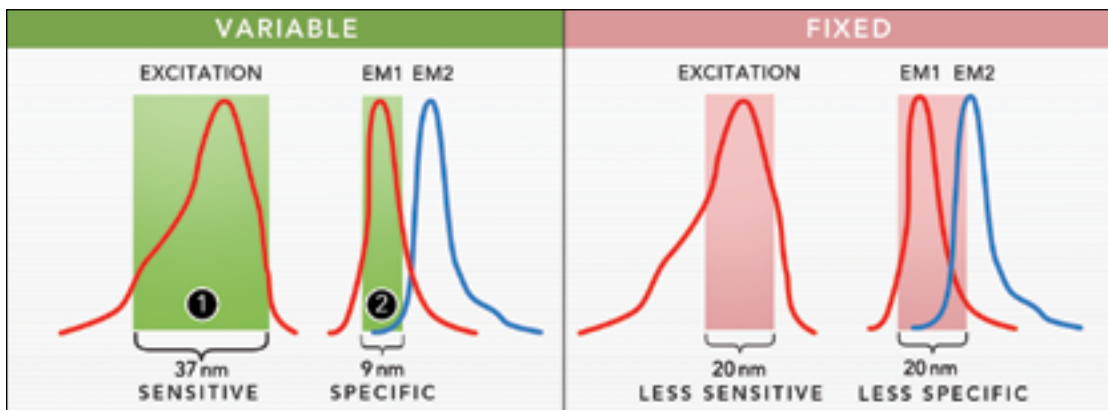
Cytation 7's upright imaging module can be used to automate assays such as ELISpot, in which cell secretions are rendered visible through the use of a colorimetric reaction. Cytation 7 fully automates image acquisition, processing, image analysis and object count.

ROI Identification feature



Cytation 7 and Gen5™ software facilitate ROI identification. Cytation 7 scans samples at low magnification before prompting the user to identify regions of interest to be imaged at high magnification. This greatly accelerates the process of imaging ROIs in batches of complex microscopic samples.

Variable bandwidth for sensitivity and specificity



The plate reader optics of Cytation 7 uses a quad monochromator design with variable bandwidth. The bandwidth can be set anywhere between 9 and 50 nm in 1 nm increments. Large bandwidth settings provide increased sensitivity and lower limits of detection. Small bandwidth settings provide increased specificity when multiple signals are present, which reduces signal crosstalk and enhances assay performance.

Micro-volume analysis with Take3 plate



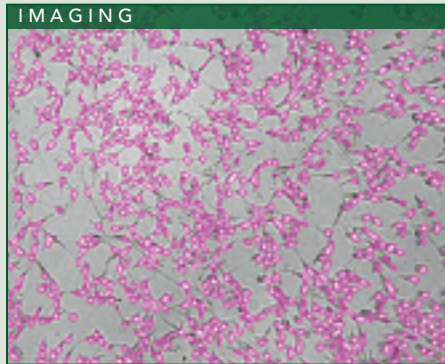
Turn your Cytation 7 into a micro-volume analysis system with Take3. You can run 16 or 48 samples in one run to save a lot of time compared to single-sample devices. Gen5 is pre-programmed for ssDNA, dsDNA, RNA and protein quantification in 2 μ L.

APPLICATIONS

BioTek's Cytation 7, along with Gen5 software, can automate a broad range of application workflows. Here are several examples of important applications in Imaging & Microscopy and Multi-Mode Detection that are easily managed with Cytation 7 Cell Imaging Multi-Mode Reader.

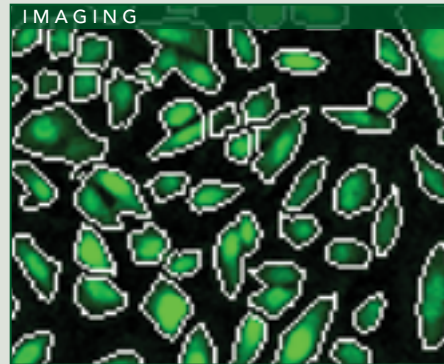


Label-free cell counting



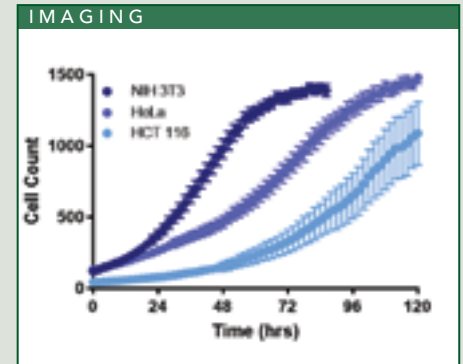
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Calcium kinetics



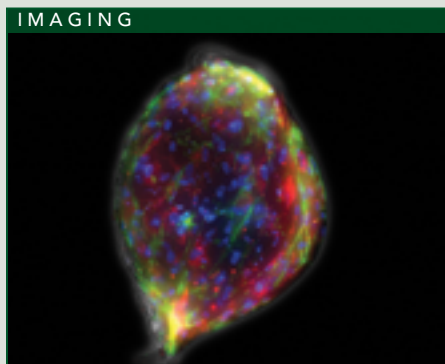
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Time-lapse live cell imaging



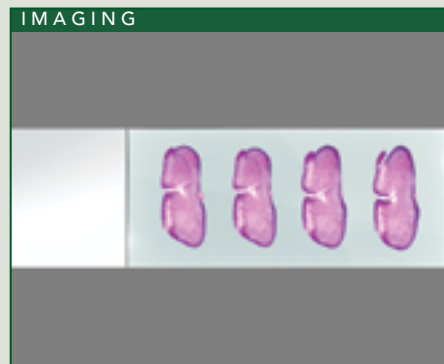
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3D cell culture



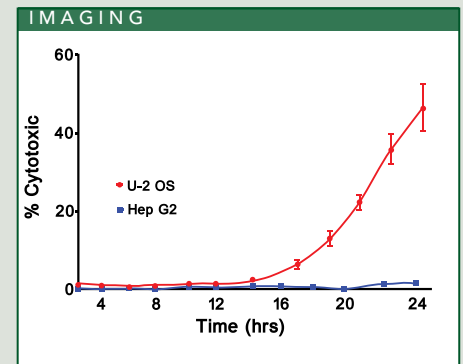
Automate 3D spheroid and tumoroid assays using environmental control and automated media exchange with a BioTek liquid handler. Z-stack, z-project and analyze with Gen5 software.

Slide scanning



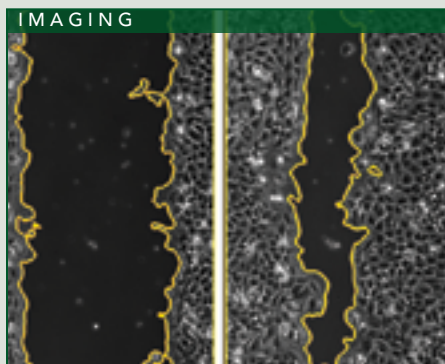
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Cell viability/toxicity



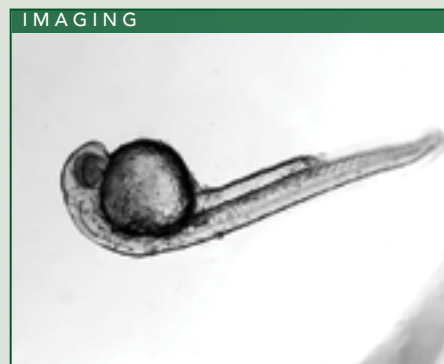
Classic live/dead assays use fluorescent probes or membrane-impermeable dyes; viability or toxicity is measured in real time.

Cell migration



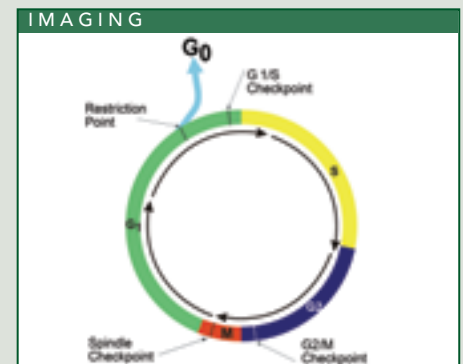
High throughput cell migration assays are enabled with AutoScratch Wound Making Tool, with time-lapse imaging under environmental controls in Cytation 7.

Whole organism imaging



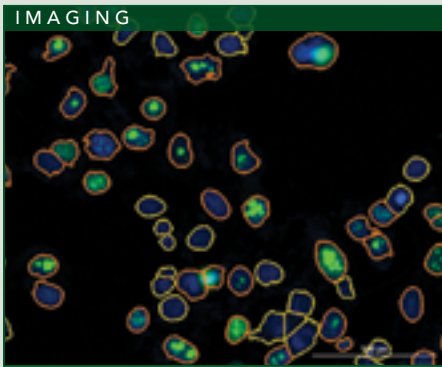
Essential to current drug screening methods, whole organisms like zebrafish and nematodes are effectively imaged and analyzed with Cytation 7 and Gen5 software.

Cell cycle analysis



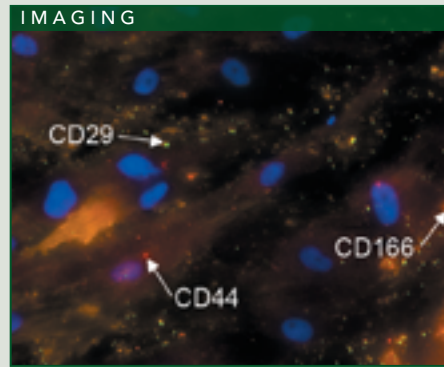
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Transfection efficiency



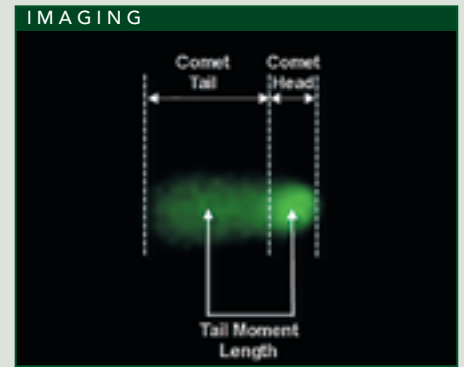
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Stem cell differentiation



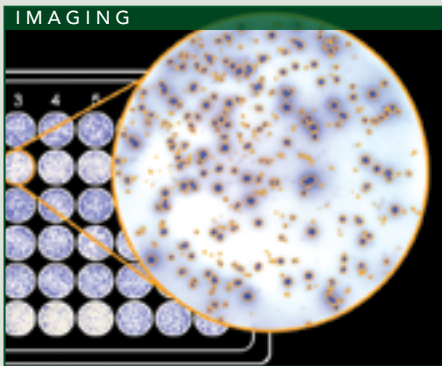
Cytation 7, integrated with BioSpa™, Automated Incubator and MultiFlo™ FX, Multi-Mode Dispenser automate analysis of the lengthy process of stem cell differentiation to find highly physiologically relevant cells for drug discovery.

Genotoxicity



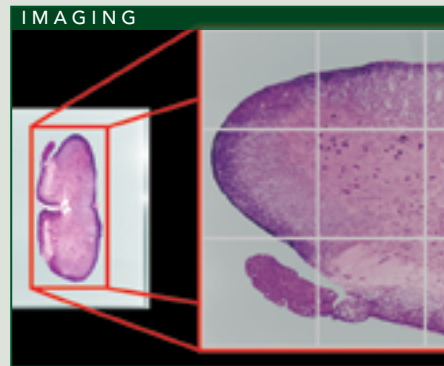
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ELISpot



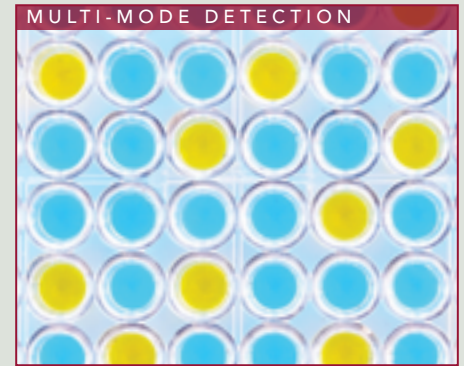
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ELISA



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Luciferase reporter assays



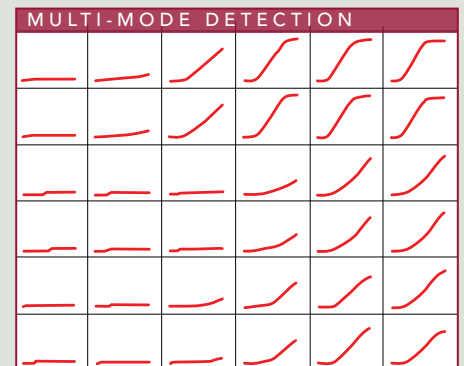
Luciferase-based reporter assays measure luminescent signal, allowing the quantification of the activity of factors affecting the signaling pathways under investigation.

Nucleic acid & protein quantification



Nucleic acid and protein quantification assays can be executed by spectrophotometric or fluorescent determination with Cytation 7, in microplates or in micro-volumes with the Take3 Plate.

Cell growth



Microbial growth assays including yeast and bacteria can be measured by several methods, including turbidimetric measurements with Cytation 7.

TECHNICAL DETAILS

General	
Multi-mode reading methods	Endpoint, kinetic, spectral scanning, well area scanning
Detection modes	UV-Vis absorbance, fluorescence intensity, luminescence
Imaging methods	Single color, multi-color, montage, time-lapse, z-stacking
Autofocus methods	Image-based and laser autofocus
Microplate types	Multi-mode detection: 6- to 384-well plates Imaging: 6- to 1536-well plates
Other labware supported	Microscope slides, Petri and cell culture dishes, cell culture flasks (T25), counting chambers (hemocytometers) Take3 Micro-Volume Plates
Environmental controls	Temperature control to 45 °C CO ₂ /O ₂ controller Peltier cooling module
Automation	BioSpa 8, BioStack and 3rd party automation capable
Modularity and configurability	Cytation 7 can include inverted and upright microscopes or upright only; with or without multi-mode detection. Modules can be added as laboratory needs change.
Inverted Microscope	
Imaging modes	Fluorescence, color brightfield, user-selectable brightfield/high contrast brightfield
Camera	Wide field of view (WFOV) monochrome camera
Imaging objectives/capacity	1.25x to 60x magnification/6 position automated turret
Imaging filter cubes	More than 20 filter/LED cubes available
Image filter cube capacity	4 color channels plus brightfield
Upright Microscope	
Imaging modes	Reflected light and transmitted light microscopy
Camera	Wide field of view (WFOV) color camera
Lenses	Finder scope, 2x, 4x, and 8x magnification



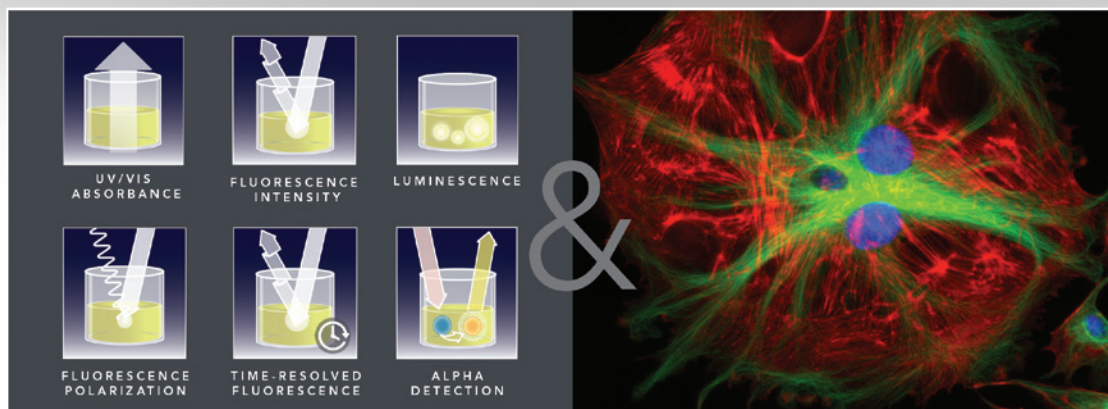
CYTATION|5

cell imaging multi-mode reader

Cytation™ 5 combines automated digital microscopy and conventional microplate detection in a configurable, upgradable platform. This patented design, along with Gen5™ Software, enables automated workflows across a vast range of biochemical and imaging applications.



Multi-mode plate reader with sophisticated imaging

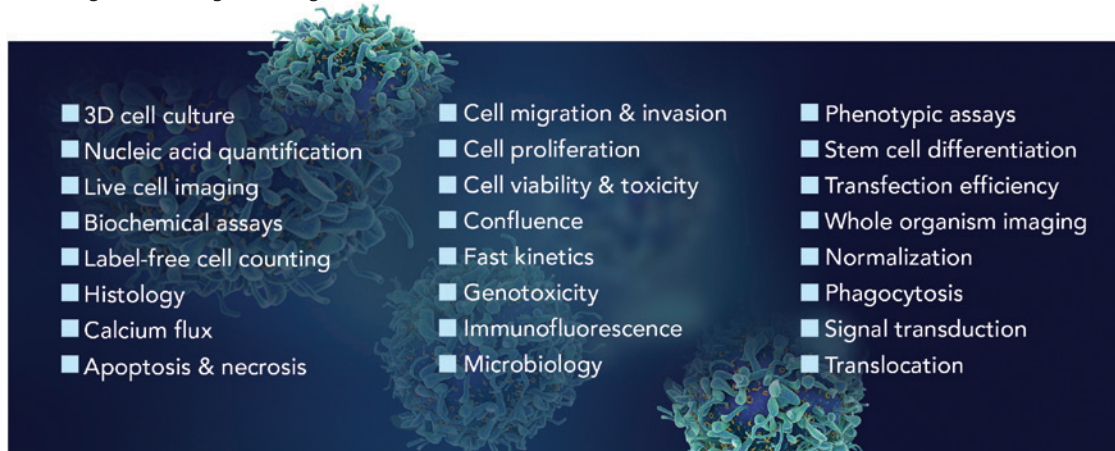


Cytation 5 extends the legacy of BioTek's multi-mode plate readers with a modular and upgradable imaging mode. Imaging opens up a range of applications for cell-based assays that cannot be performed on a standard plate reader. Information on cell morphology, localization of signal, cell count and more is obtained with Cytation 5's imaging mode.

Plate reading: absorbance, fluorescence; luminescence; advanced read modes

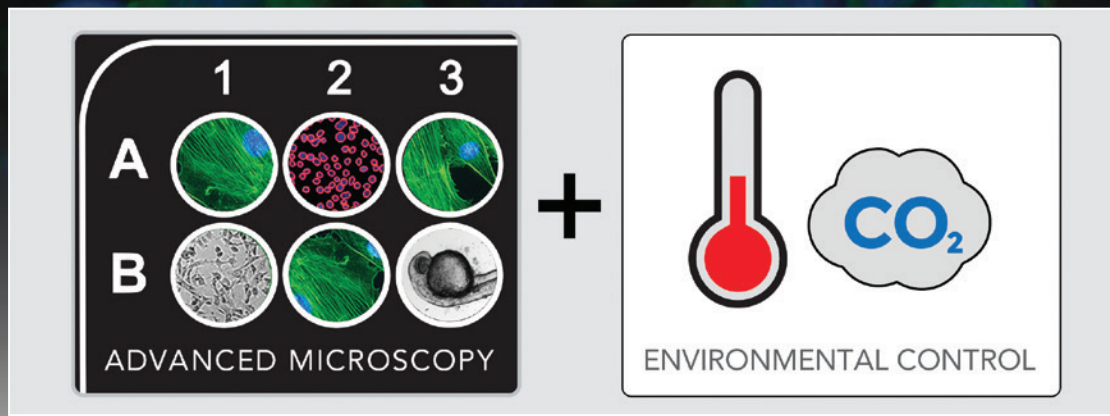
Imaging: fluorescence; phase contrast; high contrast brightfield; brightfield; color brightfield

Ready for any assay



With its combination of hybrid plate reader and advanced microscopy mode, Cytation 5 is truly ready for any assay. Contact us to learn how Cytation 5 can transform your lab and greatly increase your productivity.

Advanced microscopy: Unlimited possibilities



Cytation 5 automates many traditionally manual microscopy tasks, from slide scanning to time-lapse live cell assays; from low to high magnification. Cytation 5 is ready for any imaging assay.

Flexible hardware: 6-objective turret, 1.25x to 60x, 20+ colors available, wide FOV camera.

Full automation: automated stage, autofocus, automated turret.

Live cell imaging: temperature and gas (CO₂ and O₂) control for time-lapse live cell imaging

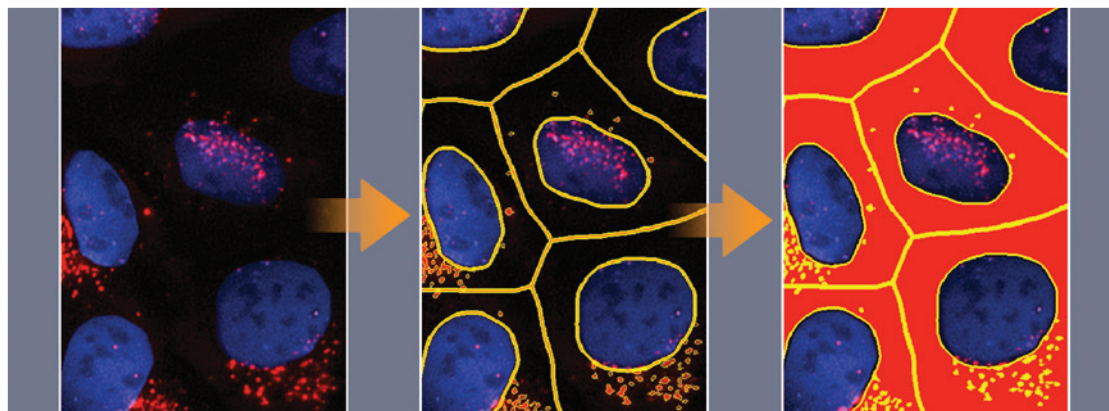
Hit-picking: Multi-mode detection + imaging saves time and data storage

1	1	2	3	2	1	2	3
A	1989	13885	1157	A			
B	1960	3703	16597	B			
C	13209	3132	1629	C			

(1) Plate reader quickly identifies GFP positive wells.

(2) Only GFP positive wells are imaged, saving both time and computer memory.

Powerful image processing and analysis

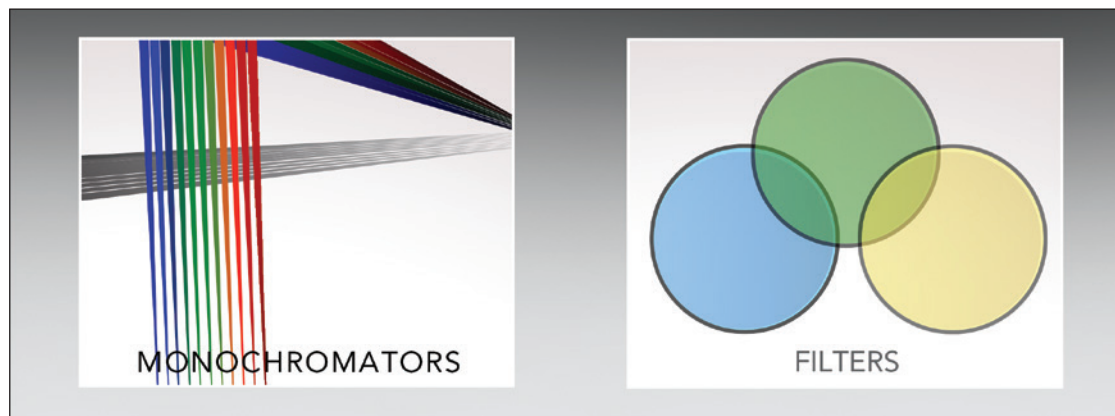


No need to process and analyze images one by one on a dedicated computer. In Gen5, pre-program your analysis tasks and walk away.

Image processing: stitching, Z-projection, deconvolution, digital phase contrast

Image analysis: cell count, confluence, cytoplasm analysis, intracellular analysis, subpopulation analysis, signal translocation and much more.

Hybrid plate reader: Flexibility and performance

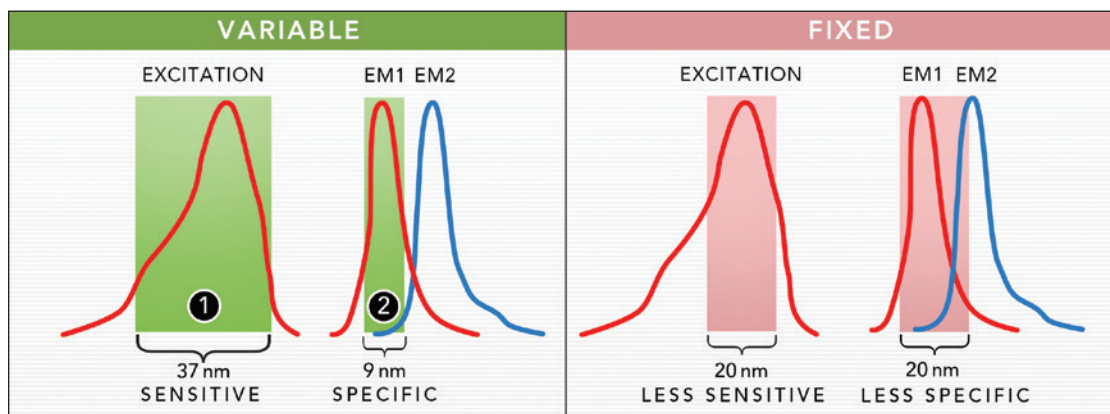


With its patented combination of monochromator and filter optics, Cytation 5 is an advanced plate reader that delivers both the flexibility and performance you need for any microplate assay in your lab.

Monochromator: variable bandwidth, absorbance, fluorescence, luminescence

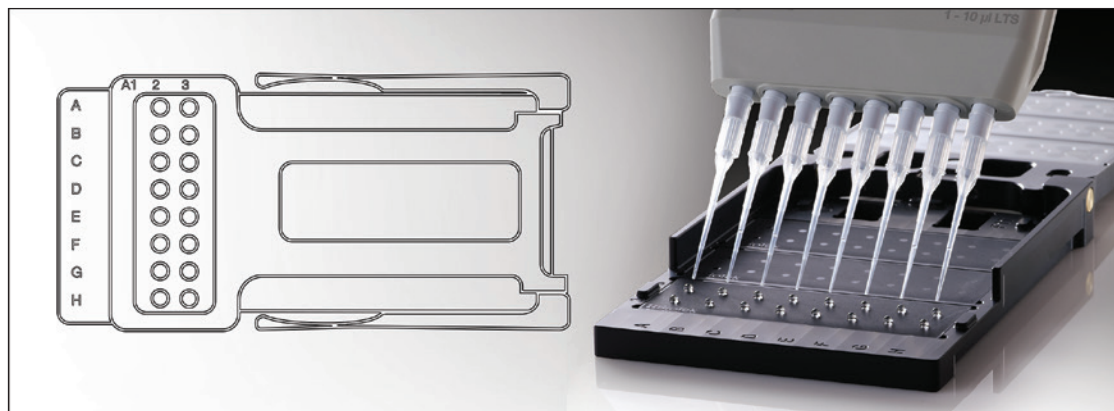
Filters: fluorescence polarization, time-resolved fluorescence, Alpha laser

Variable bandwidth for sensitivity and specificity



The plate reader optics of Cytation uses a quad monochromator design with variable bandwidth. The bandwidth can be set anywhere between 9 and 50 nm in 1 nm increment. Large bandwidth (**1**) settings provide increased sensitivity and lower limits of detection. Small bandwidth settings (**2**) provide increased specificity when multiple signals are present, which reduces signal crosstalk and enhances assay performance.

Micro-volume analysis with Take3 plate

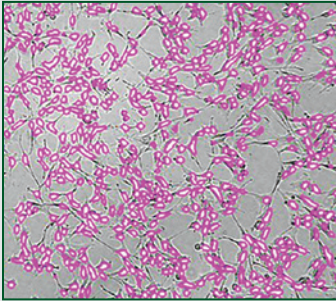


Turn your Cytation 5 into a micro-volume analysis system with Take3. You can run 16 or 48 samples in one run to save a lot of time compared to single-sample devices. Gen5 is pre-programmed for ssDNA, dsDNA, RNA and protein quantification in 2 µL.

APPLICATIONS:IMAGING

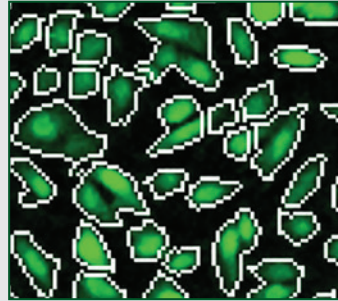
BioTek's Cytation 5, along with Gen5 software, can automate a broad range of application workflows. Here are several examples of important applications in Imaging & Microscopy and Multi-mode Detection that are easily managed with Cytation 5 Cell Imaging Multi-mode Reader.

Label-free cell counting



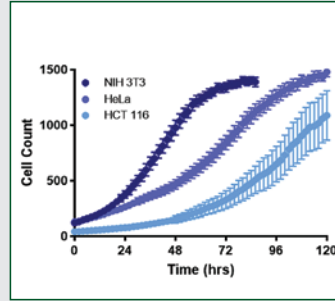
Use high contrast brightfield imaging for accurate label-free cell counting without the need for cell labeling dyes.

Calcium kinetics



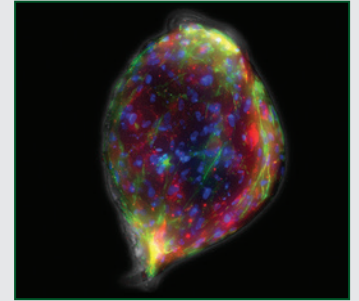
Cytation 5's dual reagent injectors enable capture and analysis of fast inject/image assays like calcium kinetics.

Time-lapse live cell imaging



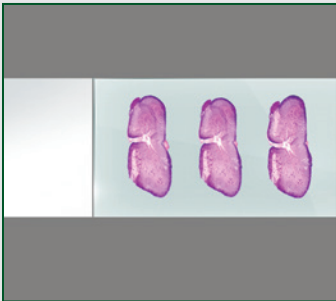
Cell proliferation studies require controlled environments. Cytation 5 automates image capture through analysis.

3D cell culture



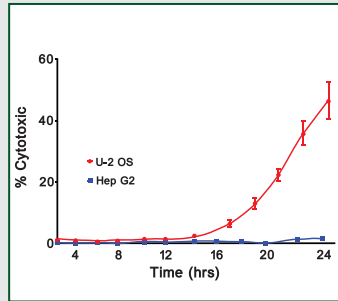
Automate 3D spheroid and tumoroid assays using environment control and automated media exchange with a BioTek liquid handler. Z-stack, z-project and analyze with Gen5.

Slide scanning



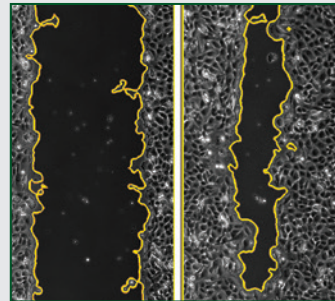
H&E staining and color brightfield allow easy, rapid image capture and analysis. Automate and increase throughput by integrating Cytation 5 to BioStack™ Microplate Stacker.

Cell viability/toxicity



Classic live/dead assays use fluorescent probes or membrane-impermeable dyes; viability or toxicity is measured in real time.

Cell migration



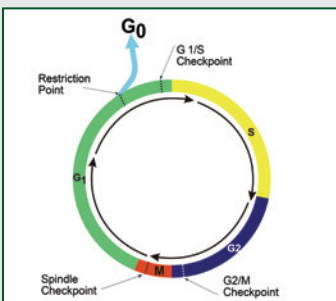
High throughput cell migration assays are enabled with AutoScratch Wound Making Tool, with time-lapse imaging under environmental controls in Cytation 5.

Whole organism imaging



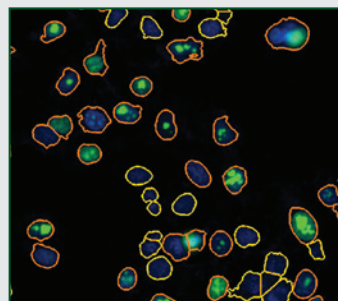
Essential to current drug screening methods, whole organisms like zebrafish and nematodes are effectively imaged and analyzed with Cytation 5 and Gen5 software.

Cell cycle analysis



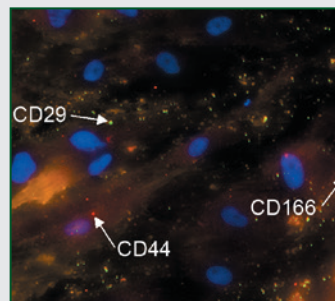
The progression of cellular growth through the cell cycle is a highly regulated process. Automated histogram analysis of objects facilitates threshold definition.

Transfection efficiency



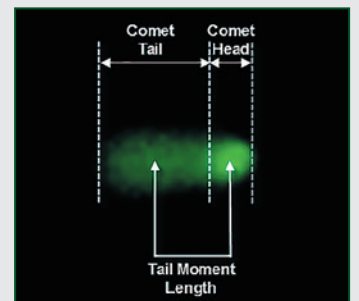
Cytation 5 provides intuitive image analysis for automating the assessment of transfection efficiency.

Stem cell differentiation



Cytation 5, integrated with BioSpa Automated Incubator and MultiFlo™ FX Multi-Mode Dispenser automate analysis of the lengthy process of stem cell differentiation to find highly physiologically relevant cells for drug discovery.

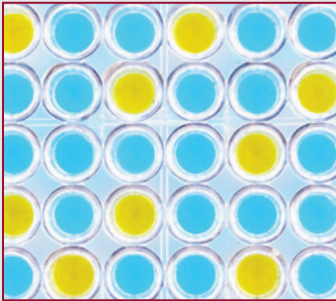
Genotoxicity



The destructive effects of mutagens such as high energy radiation and chemicals on nuclear DNA are measured with the comet assay and γH2AX immunofluorescence assays. Cytation 5 is an ideal imaging platform for these assays.

APPLICATIONS: MULTI-MODE DETECTION

ELISA



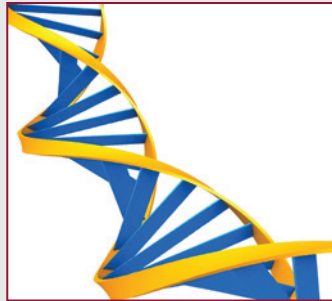
ELISA methods with colorimetric, fluorescent and luminescent substrates are easily detected with Cytation 5.

Luciferase reporter assays



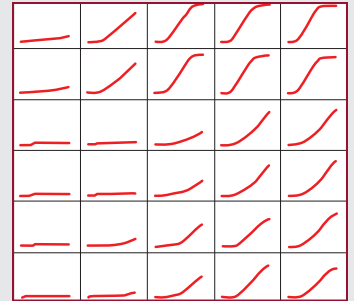
Luciferase-based reporter assays measure luminescent signal, allowing the quantification of the activity of factors affecting the signaling pathways under investigation.

Nucleic acid & protein quantification



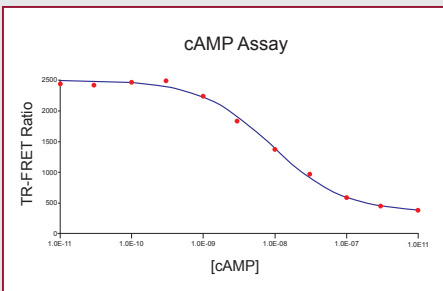
Nucleic acid and protein quantification assays can be executed by spectrophotometric or fluorescent determination with Cytation 5, in microplates or in micro-volumes with the Take3 Plate.

Cell growth



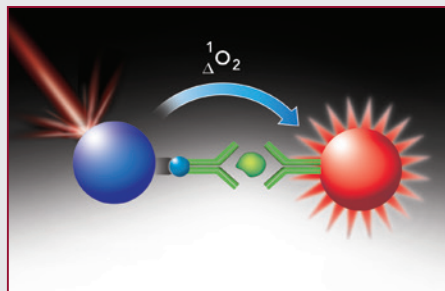
Microbial growth assays including yeast and bacteria can be measured by several methods, including turbidimetric measurements with Cytation 5.

TR-FRET



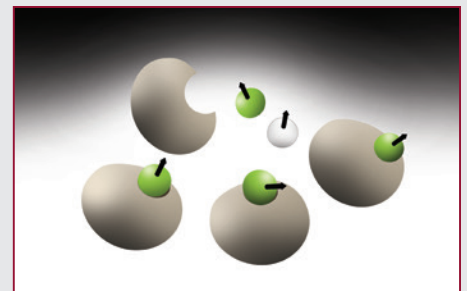
TR-FRET and HTRF[®] are sensitive, robust methods. Cytation 5 and Gen5 provide excellent sensitivity for optimal Z' factors.

AlphaScreen



AlphaScreen[®] technology provides high signal:background ratios. The measurable energy transfer is emitted in the 520-620 nm.

Fluorescence polarization



FP is widely used in research labs to study molecular binding or dissociation events and in screening labs to screen for drug candidates.

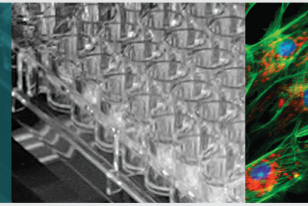


TECHNICAL DETAILS

General	
Microplate types	Monochromator: 6- to 384-well plates Filters: 6- to 1536-well plates Imaging: 6- to 1536-well plates
Other labware supported	Microscope slides, Petri and cell culture dishes, cell culture flasks (T25), counting chambers (hemocytometer) Take3 Micro-Volume Plates
Environmental controls	Temperature control to 65 °C CO ₂ /O ₂ controller Peltier cooling module
Shaking	Linear, orbital, double-orbital
Automation	BioSpa 8, BioStack and 3rd party automation capable
Modularity and configurability	Cytation 5 has many available configurations, including imaging only, multi-mode only and combinations. Modules can be added as laboratory needs change.
Imaging	
Imaging modes	Fluorescence, brightfield, high contrast brightfield, color brightfield, phase contrast
Imaging methods	Single color, multi-color, montage, time-lapse, z-stacking
Light source	Long-life LEDs
Camera	16-bit Sony CMOS, standard or wide FOV
Imaging objectives/capacity	1.25x to 60x magnification/6 position automated turret
Imaging filter cubes	More than 20 filter/LED cubes available
Imaging filter cube capacity	4 color channels plus brightfield
Autofocus methods	Image-based and laser autofocus
Multi-Mode Detection	
Detection modes	UV-Vis absorbance Fluorescence intensity Luminescence Fluorescence polarization Time-resolved fluorescence Alpha
Reading methods	Endpoint, kinetic, spectral scanning, well area scanning

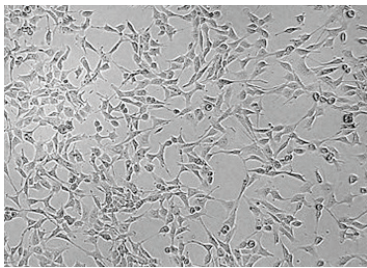


Cytation™ 1 Cell Imaging Multi-Mode Reader

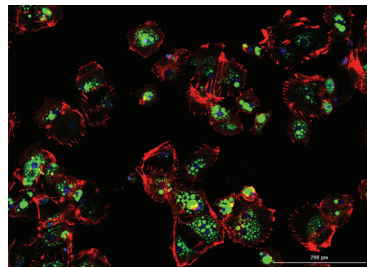


Cytation 1 Cell Imaging Multi-Mode Reader eliminates the complexities of multi-mode detection without compromising performance. It can be configured with optional fluorescence and high contrast brightfield cellular imaging up to 60x magnification. This unique, patented design provides both quantitative phenotypic cellular information with well-based quantitative data in an affordable, compact system.

Cytation 1's multi-mode detection module includes high sensitivity filter-based fluorescence and luminescence, and a monochromator system for UV-Vis absorbance. Temperature control to 45 °C and shaking are standard; CO₂/O₂ control and reagent injectors are available. BioTek's powerful Gen5 software automates image capture, plate reading, data and image analysis and reporting.



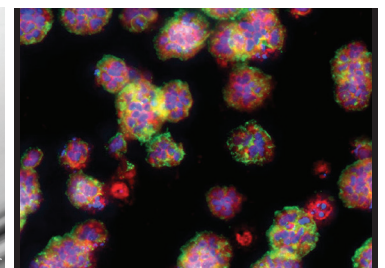
Live cell assays



Primary hepatocytes, 10x



Zebrafish embryo



Z-stack, 20x

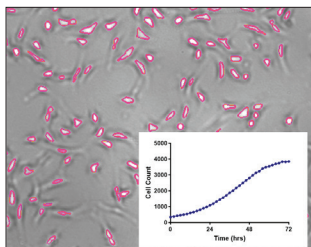


Features:

- Affordable, patented quantitative digital microscopy with optional multi-mode microplate detection
- Augmented Microscopy using Gen5 software for automated image capture to quantitative publication-ready data
- Fluorescence and brightfield imaging from 1.25x to 60x, imaging larger samples to intra-cellular details
- Affordable automation: automated XY stage, focus, exposure, image capture and LED intensity
- Cell friendly design: 4-Zone incubation to 45 °C with Condensation Control, and CO₂/O₂ control
- High performance filter-based fluorescence and luminescence detection with monochromator-based UV-Vis absorbance
- Available angled injectors for rapid inject/image or read assays
- Peltier Cooling Module maintains environmental stability for assay integrity

Typical Applications:

- Cell culture QC
- Cell migration and invasion
- Food/Beverage Quality and Safety Testing
- Cell Proliferation
- Calcium flux
- ELISA, kinetic ELISA
- Apoptosis
- Translocation
- Nucleic acid quantification
- 3D cell imaging
- Cytotoxicity
- Protein quantification
- Tumor invasion
- Cell viability
- Wound migration
- Signal transduction
- Neurite outgrowth
- Stem cell differentiation
- Phenotypic assays
- Phagocytosis



High contrast brightfield for cell counting

Configurations:

- CYT1FA:** Cytation 1 w/filter-based fluorescence and luminescence, monochromator-based UV-Vis absorbance. Includes Gen5 software. Fluorescence filter cubes sold separately.
- CYT1V:** Cytation 1 w/Cytation 1 with fluorescence and high contrast brightfield imaging. Includes imaging controller and Gen5 software. Imaging filter/LED cubes and objectives sold separately.
- CYT1FAV:** Cytation 1 w/fluorescence and high contrast brightfield imaging, filter-based fluorescence and luminescence, monochromator-based UV-Vis absorbance. Includes imaging controller and Gen5 Software. Imaging filter/LED cubes, objectives and fluorescence filter cubes sold separately.

Optional Accessories:

- CO₂/O₂ Gas Controller
- Peltier Cooling Module
- Gen5 Image+ and Image Prime for advanced image analysis
- Gen5 Secure for 21 CFR Part 11 compliance
- Dual Reagent Injector Module
- BioStack Microplate Stacker
- BioSpa 8 Automated Incubator
- Take3 Micro-Volume Plates
- Scratch Assay Starter Kit
- Cell Count & Viability Starter Kit



Cytation 1 interfaces with the BioSpa 8 Automated Incubator to automate live cell assay workflows.

Technical Details:

General

- Microplates:** 6- to 1536-well microplates, 1.0" maximum height
- Other labware supported:** Microscope slides, Petri and cell culture dishes, cell culture flasks (T25), counting chambers (hemocytometer), Take3 Micro-Volume Plates
- Temperature control:** 4-Zone incubation to 45 °C with Condensation Control
- Cooling:** Peltier Cooling Module option
- Shaking:** Linear, orbital, double orbital
- Automation:** BioStack, BioSpa 8, and 3rd party automation compatible
- CO₂ and O₂ control:** 0 – 20% CO₂ control and 1 – 19% O₂ control, with optional Gas Controller
- Software:** Gen5 Microplate Reader and Imager Software included

Imaging

- Imaging modes:** Fluorescence and high contrast brightfield
- Imaging methods:** Single color, multi-color, montage, time lapse, Z-stacking
- Light source:** High power LEDs
- Camera:** 16-bit gray scale, Sony CCD, 1.25 megapixel
- Resolution:** 0.3 μm/pixel at 20x
- Filter cube capacity:** Up to 4 onboard, user-replaceable cubes
- Colors available:** More than 15 colors
- Objective capacity:** 2 onboard, user-replaceable objectives
- Available objectives:** 1.25x, 2.5x (2.25x eff), 2.5x (2.75x eff), 4x, 10x, 20x, 40x, 60x
- Automated functions:** Autofocus, user-trained autofocus, autoexposure, auto-LED intensity
- Autofocus methods:** Image-based autofocus; laser autofocus option
- Image collection rate:** Image-based autofocus: 96 wells, 1 color (DAPI), 4x, 6 minutes
Laser autofocus: 96 wells, 1 color (DAPI), 4x, <3 minutes
Burst Mode: 10 fps, single well, single color at ≤ 50ms integration time

Fluorescence Intensity

- Light source:** Xenon flash lamp
- Detector:** PMT
- Read methods:** End point, kinetic, area scanning, inject/read process
- Wavelength selection:** Deep blocking bandpass filters/dichroic mirrors
- Wavelength range:** 200 - 700 nm (850 nm option)
- Dynamic range:** 7 decades
- Sensitivity:** Fluorescein: 0.25 pM (0.025 fmol/well, 384-well plate)
- Read speed:** 96 wells: 11 seconds; 384 wells: 22 seconds

Luminescence

- Sensitivity:** 10 amol ATP (flash); 100 amol (glow)
- Read modes:** End point, kinetic, area scanning, inject/read process

Fluorescence Polarization

- Sensitivity:** 1.2 mP standard deviation at 1nM fluorescein
- Wavelength range:** 280 – 700 nm (850 nm option)
- Read modes:** End point, kinetic, inject/read process

Time-Resolved Fluorescence

- Sensitivity:** Europium 40 fM (4 amol/well, 384-well plate)

Absorbance

- Light source:** Xenon flash lamp
- Wavelength selection:** Monochromator
- Wavelength range:** 200 – 999 nm, 1 nm increment
- Bandwidth:** 2.4 nm
- Dynamic range:** 0 – 4.0 OD
- Resolution:** 0.0001 OD

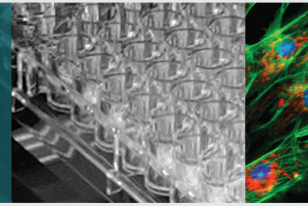
Reagent Injectors

- Number:** 2 syringe pumps
- Dispense volume:** 5 – 1,000 μL in 1 μL increment
- Dead volume:** <1.1 mL with back flush

Physical Characteristics

- Power:** 100-240 VAC, 50/60 Hz (24VDC external power supply, 130W)
- Dimensions:** 20" D x 16.5" W x 17.5" H (50.8 cm x 41.91 cm x 44.5 cm)
- Weight:** 65 lbs (29 kg)

BioSpa™ Live Cell Analysis System



BioTek's BioSpa™ Live Cell Analysis System automates many applications in multiple plates for continuous live cell imaging and analysis. The core BioSpa System includes BioSpa 8 Automated Incubator and Cytation™ Cell Imaging Multi-Mode Reader – together, they automate kinetic live cell workflows in multiple plates for hours, days or weeks. It's easy to add one of BioTek's dispensers or washers to automate the entire process from cell culture, plating, media exchanges and washing through image capture and analysis. BioTek's Gen5™ Software easily enables high quality real time image capture and data-rich quantitative analysis for complete phenotypic expression data.

The system provides temperature, gas and humidity control for up to 8 microplates for short and long term assays. BioSpa's software seamlessly integrates and schedules liquid handling, incubation, imaging and data analysis while providing constant monitoring of all environmental conditions and processing steps. BioSpa's OnDemand mode provides a simple, efficient interface for imaging or detection-only workflows with multi-user flexibility. The BioSpa System brings increased productivity at an affordable price to many laboratories.



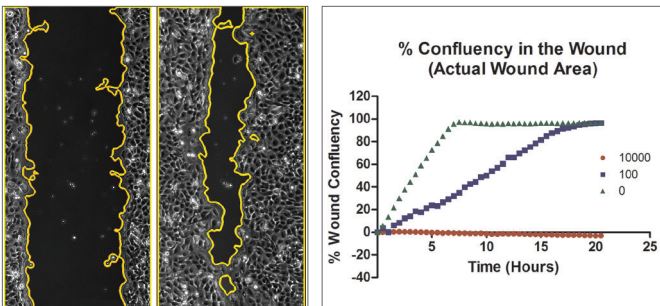
BioSpa 8 transfers microplates from its incubator to Cytation.

Typical Applications:

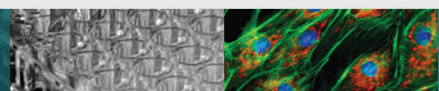
- 2D and 3D cell imaging
- Label-free cell counting
- Cell migration/scratch wound healing assays
- Cell proliferation and cytotoxicity assays
- Apoptosis assays
- Phenotypic assays

Features:

- Unattended automation for up to 8 plates or other labware
- Temperature and CO₂/O₂ control and humidity monitoring
- Time lapse, z-stacking and montage image capture
- Fluorescence, brightfield, color brightfield and phase contrast
- Up to 60x magnification and 4 color channels
- OnDemand mode for multiple users and on-the-fly labware addition/removal
- Continuously records environment conditions, includes customized notifications
- Powerful image analysis, cell counting, cytoplasm analysis, spot counting, subpopulation analysis
- Available media exchange and washing with added BioTek dispenser, washer or combined systems

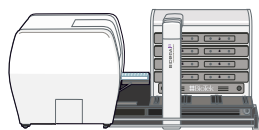


HT-1080 cells migrating in a scratch wound assay and image analysis in Gen5.

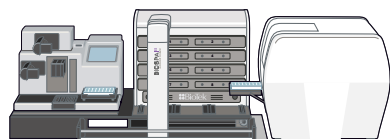


Configurations:

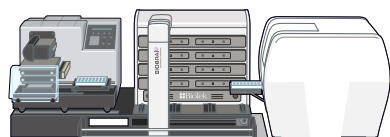
BioSpa Live Cell Analysis Systems can be configured with BioSpa 8 Automated Incubator, Cytation Imager and other compatible washers and dispensers.



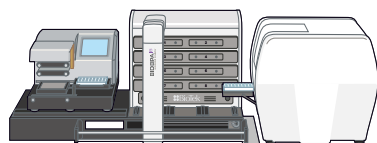
BioSpa 8 and Cytation



MultiFlo FX, BioSpa 8 and Cytation



EL406, BioSpa 8 and Cytation



405TS, BioSpa 8 and Cytation



BioSpa Live Cell Analysis System, left to right: MultiFlo FX, BioSpa 8, Cytation.

Technical Details:

General

Microplate types:	6- to 1536-well standard height microplates, with or without lids
Plate height range:	7.6 mm to 25.4 mm
Other labware supported:	Cell culture dishes (60 mm and 35 mm)
Lidded plate handling:	BioSpa 8 handles plate de-lidding or re-lidding
Microplate capacity:	Up to 8 microplates or other labware
Air filter:	User-replaceable HEPA filter
Compatible instruments:	Cytation C10, Cytation 7, Cytation 5, Cytation 1, EL406, 405 TS, 405 LS, MultiFlo FX
Temperature control:	To 45 °C
Software:	BioSpa Software; Gen5 Software; LHC Software (instrument dependent)
CO ₂ and O ₂ control:	Range: 0 - 20% (CO ₂); 1 - 19% (O ₂)
Humidity:	rH: 80 to 95% (lidded plates and 5% CO ₂) Source: Removable water pan Water level sensor: Low water level alert

Imaging System

Imaging modes:	Fluorescence, brightfield, high contrast brightfield, phase contrast, color brightfield
Imaging method:	Confocal and widefield: Single color, multi-color, montage, time lapse, z-stacking
Image processing:	Z-projection, digital phase contrast, stitching
Camera:	16-bit gray scale Sony
Objective capacity:	6 user-replaceable objectives
Objectives available:	1.25x, 2.5x, 4x, 10x, 20x, 40x, 60x
Phase objectives available:	4x, 10x, 20x, 40x
Image filter cube capacity:	4 user-replaceable fluorescence cubes plus brightfield channel
Imaging filter cubes available:	More than 20 colors available
Imaging LED cubes available:	365 nm, 390 nm, 465 nm, 505 nm, 523 nm, 590 nm, 623 nm, 655 nm, 740 nm
Automated functions:	User-trained autofocus, autofocus, autoexposure, auto-LED intensity
Autofocus methods:	Image-based autofocus, user-trained autofocus, laser autofocus (option)

Other

Technical details for BioTek microplate washers and dispensers vary by instrument. Contact BioTek for details.

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afr@nt-rt.ru || <https://agilent.nt-rt.ru/>