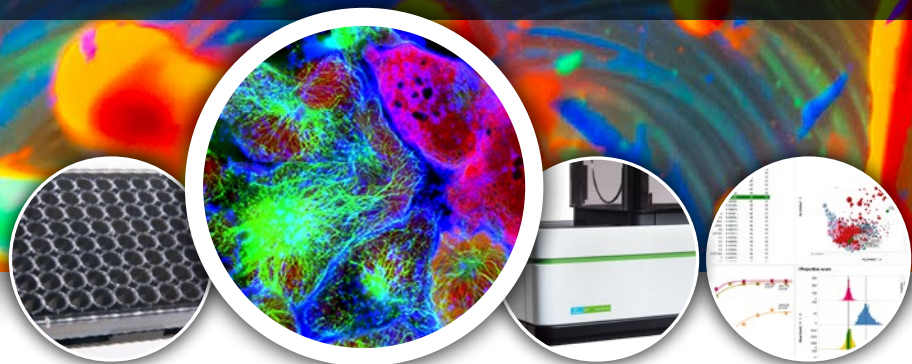


# PHENOMENAL FLUORESCENCE



PHENOVUE™ CELLULAR IMAGING REAGENTS



# ACHIEVE YOUR MOMENT OF CLARITY

Faster results, simple reagents, easy-to-operate instrumentation, and seamless workflows – these benefits are not only nice-to-haves, but they're necessary to keep up with scientific advances in studying cell biology and discovering novel drug treatments.

Cellular imaging allows you to detect and analyze numerous cellular components, from macromolecules to organelles and cell compartments. Scientists like you are studying more complex models such as 3D cell cultures with the goal of generating detailed phenotypic fingerprints for deeper insights. But pressures to do so with ease, speed, and reliability are mounting.

It's time to discover PhenoVue™, our suite of cellular imaging reagents – from cell painting kits to organelle and cell compartment stains to fluorescent-labelled secondary antibodies – that complement our proven high-content screening instruments and image analysis software.

Working together to deliver reliable, accurate, physiologically relevant results, our portfolio of cellular imaging reagents, microplates, imaging instruments, image analysis software, and automation solutions is designed to streamline your high-content workflows and lead you to breakthroughs faster.

Get to know our PhenoVue portfolio of reagents –  
and get to know better science.

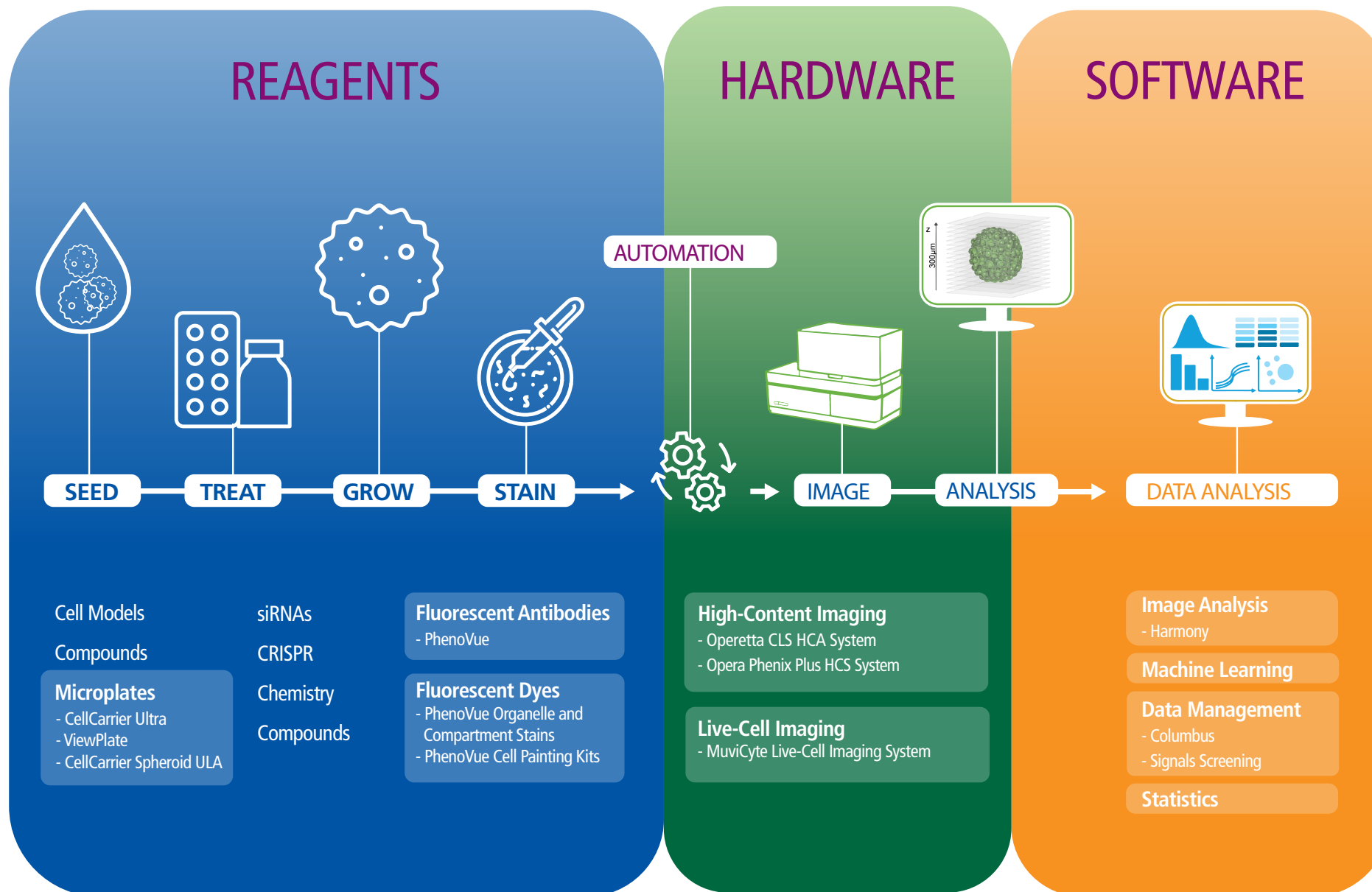
## PHENOVUE REAGENTS



## CELLULAR IMAGING INSTRUMENTS



# CELLULAR IMAGING WORKFLOW



## PHENOVUE REAGENTS

## CELLULAR IMAGING INSTRUMENTS

# PAINT A PICTURE OF YOUR ANALYSIS

Cell painting is a powerful phenotypic high-content screening approach that combines cell and computational biology to unravel cells' responses when subjected to perturbations.

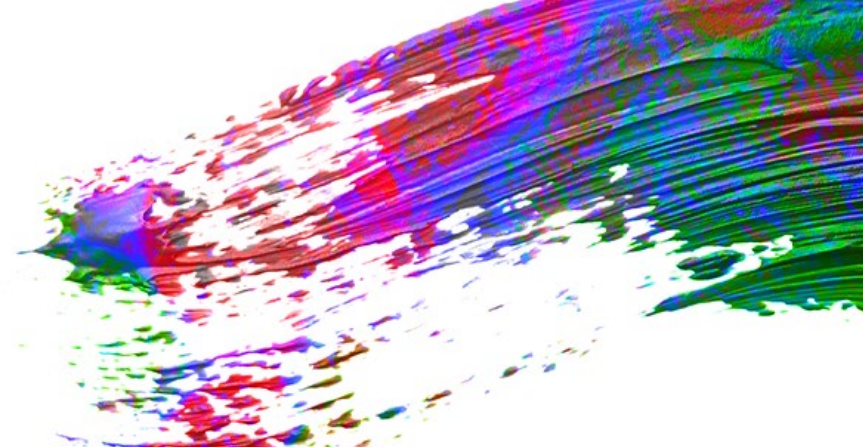
In this process, cells are "painted" by labeling various cellular compartments with different fluorescent bioprobes to quantitatively profile multiple phenotypic parameters to better understand the effects of chemical compounds, drugs, genes, or other test articles.

Cell compartments and organelles are simultaneously tagged with six fluorescent probes, followed by acquisition and analysis of images. The six probes target specific cell compartments to determine protein expression or signaling pathways, identify organelles and their function, or identify whole-cell morphology.

Two versions of the PhenoVue cell painting kit are available, each in three different pack sizes. Both kits comprise validated, pre-optimized fluorescent bioprobes. The PhenoVue Cell Painting Kit reflects the protocol described in Bray et al.<sup>1</sup> The PhenoVue™ Cell Painting JUMP Kit reflects the JUMP-CP consortium protocol v3.<sup>2</sup>

1. Bray, M.A., et al., *Cell Painting, a high-content image-based assay for morphological profiling using multiplexed fluorescent dyes*. *Nat Protoc*, 2016. 11(9): p. 1757-74.

2. [https://github.com/carpenterlab/2016\\_bray\\_natprot/wiki#updates-to-the-cell-painting-protocol](https://github.com/carpenterlab/2016_bray_natprot/wiki#updates-to-the-cell-painting-protocol) (Accessed June 2021).



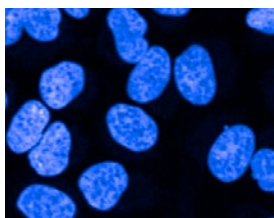
## PhenoVue Cell Painting Kits

- PhenoVue Cell Painting Kit for 1 x 384-well plate
- PhenoVue Cell Painting Kit for 10 x 384-well plates
- PhenoVue Cell Painting Kit for 100 x 384-well plates
- PhenoVue Cell Painting JUMP Kit for 1 x 384-well plate
- PhenoVue Cell Painting JUMP Kit for 10 x 384-well plates
- PhenoVue Cell Painting JUMP Kit for 100 x 384-well plates

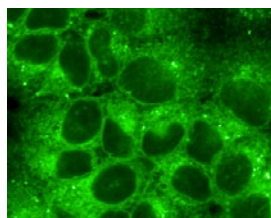
## PhenoVue Dye Diluents

- PhenoVue Dye Diluent A (5X)

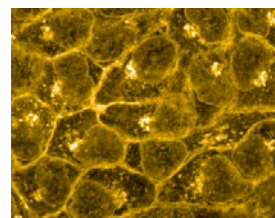
**PhenoVue Hoechst 33342**  
Nuclear Stain (Nucleus)



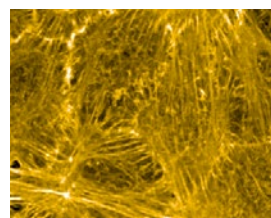
**PhenoVue Fluor 488 –**  
Concanavalin A  
(Endoplasmic Reticulum)



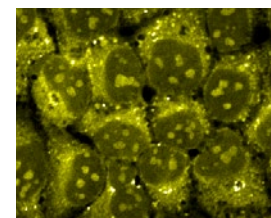
**PhenoVue Fluor 555 –**  
WGA (Plasma Membrane +  
Golgi Apparatus)



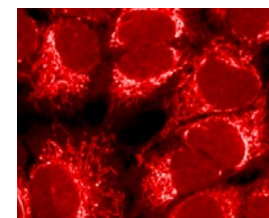
**PhenoVue Fluor 568 –**  
Phalloidin (Actin)



**PhenoVue 512**  
Nucleic Acid Stain  
(Nucleoli - RNA)



**PhenoVue 641**  
Mitochondrial Stain  
(Mitochondria)

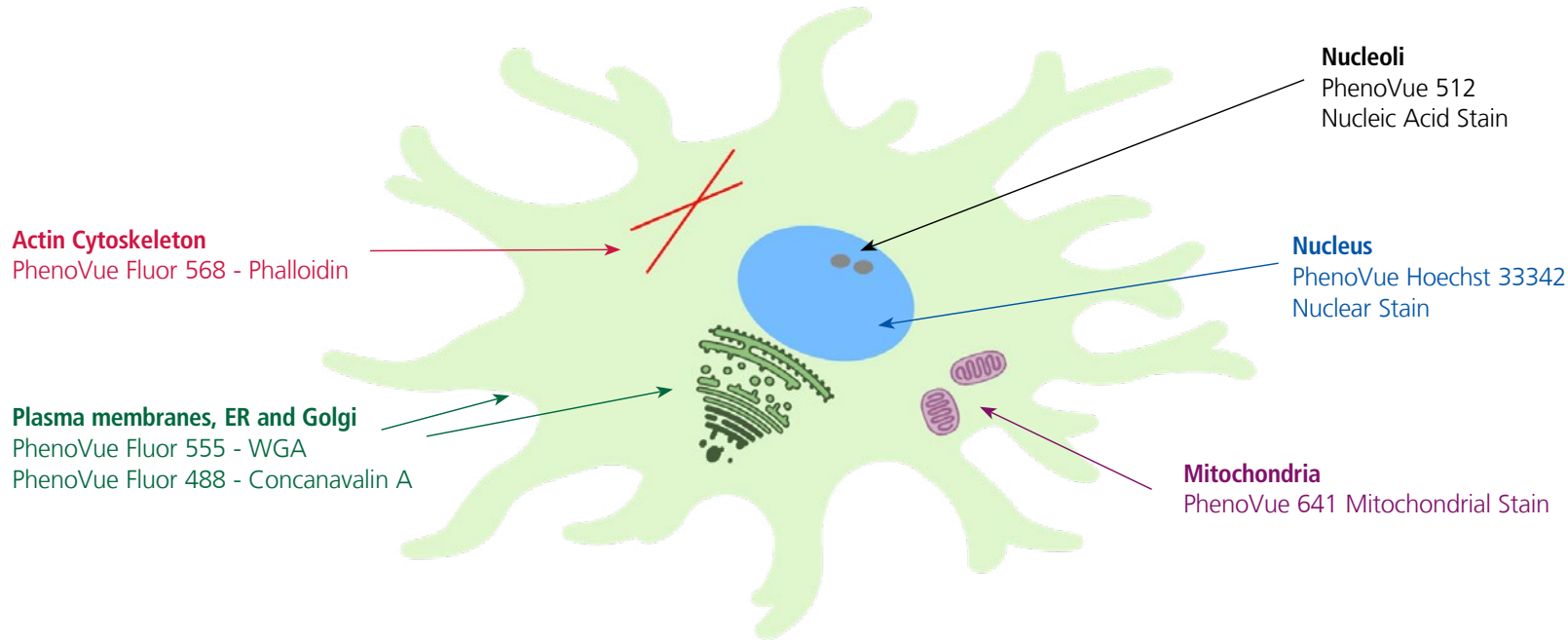


## PHENOVUE REAGENTS

## CELLULAR IMAGING INSTRUMENTS



CELL PAINTING KIT COMPONENTS:



PHENOVUE REAGENTS



CELLULAR IMAGING INSTRUMENTS

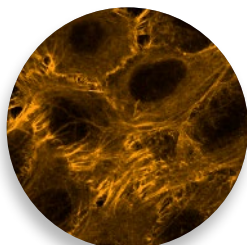


# GAIN DEEPER INSIGHTS FROM YOUR ANALYSIS

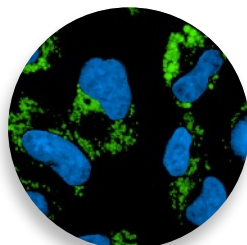
Cellular imaging techniques, such as high-content analysis, rely on the ability to detect and distinguish between specific cellular compartments and organelles. High-quality data depends on high-quality images, which all depends on bright fluorescent dyes.

Building on our extensive expertise in imaging instrumentation, fluorescent dye chemistry, and assay development, our PhenoVue organelle-specific stains detect various organelles and cellular compartments and are optimized for high-content screening. Features include:

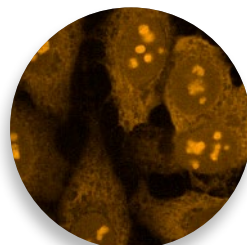
- Range of stains and fluors for commonly studied organelles and compartments
- Variety of fluorescent colors to enable multiplexing while avoiding spectral overlap
- Validation in high-content screening applications
- Bright fluorophores to enable high-quality images



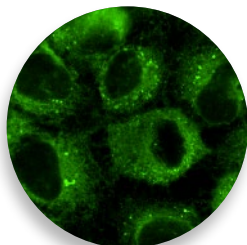
Fluor 568 - Phalloidin



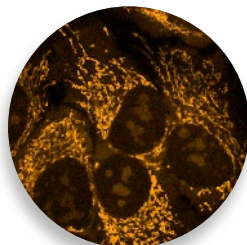
493 Lipid Stain



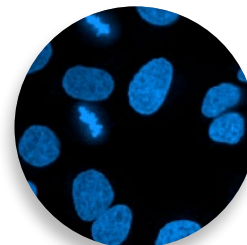
512 Nucleic Acid Stain



Fluor 488 - Concanavalin A



551 Mitochondrial Stain



Hoechst 33342 Nuclear Stain

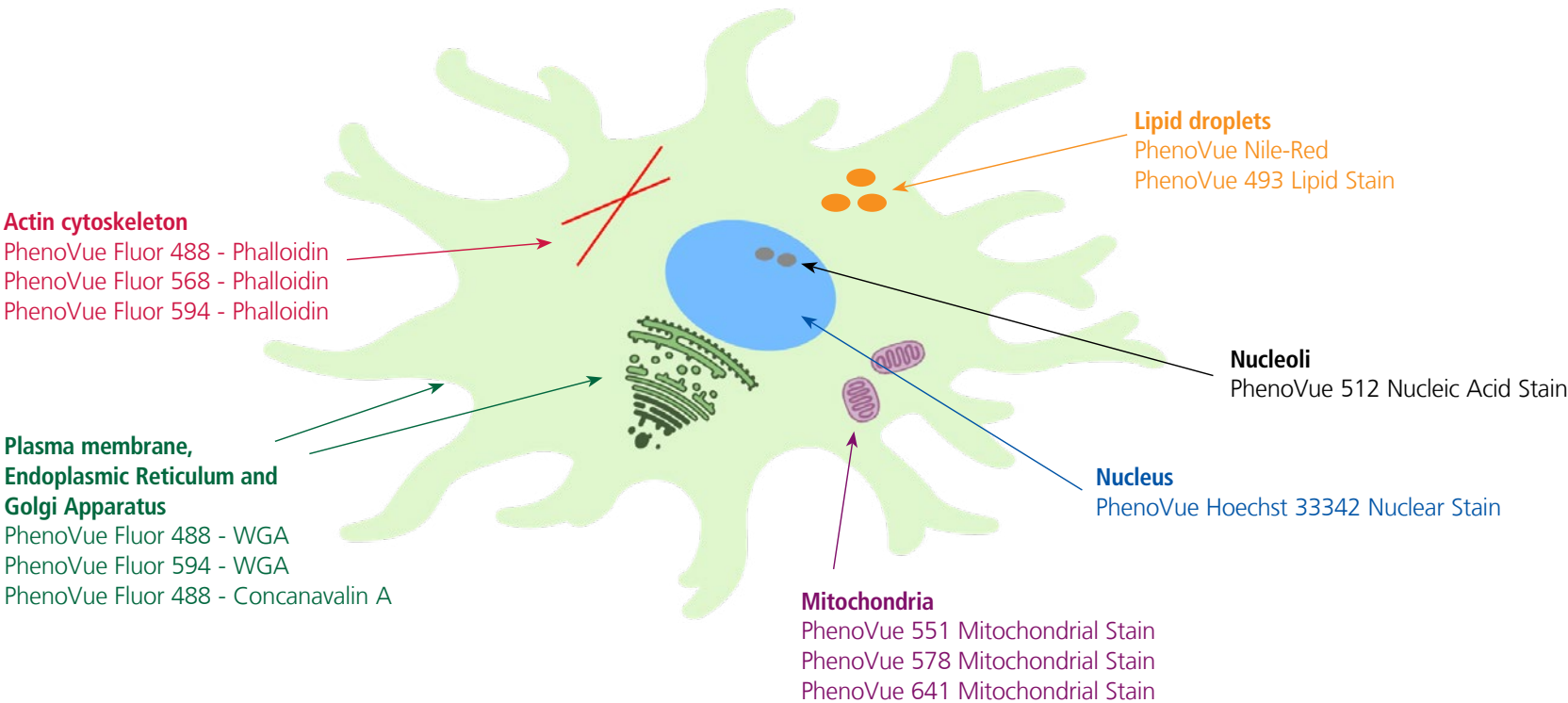
## PhenoVue Cell Compartment and Organelle Stains

- PhenoVue Fluor 488 - WGA
- PhenoVue Fluor 594 - WGA
- PhenoVue Fluor 488 - Phalloidin
- PhenoVue Fluor 568 - Phalloidin
- PhenoVue Fluor 594 - Phalloidin
- PhenoVue Fluor 488 - Concanavalin A
- PhenoVue 551 Mitochondrial Stain
- PhenoVue 578 Mitochondrial Stain
- PhenoVue 641 Mitochondrial Stain
- PhenoVue Nile Red Lipid Stain
- PhenoVue 493 Lipid Stain
- PhenoVue 512 Nucleic Acid Stain
- PhenoVue Hoechst 33342 Nuclear Stain

## PHENOVUE REAGENTS

## CELLULAR IMAGING INSTRUMENTS

PhenoVue Cell Compartment and Organelle Stains:



PHENOVUE REAGENTS

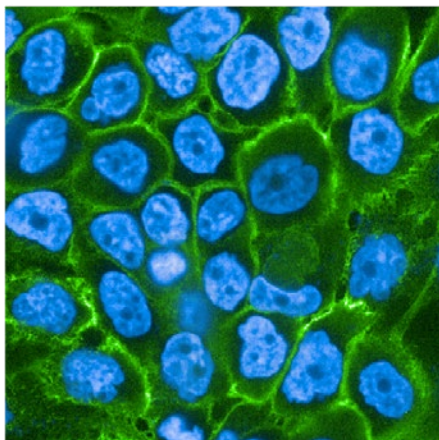
CELLULAR IMAGING INSTRUMENTS

# IMAGINE THE POSSIBILITIES

Fluorescent secondary antibodies are everyday tools for researchers performing high-content analysis, cellular imaging, flow cytometry, and western blotting. The method of indirect immunofluorescence detection relies on an unconjugated antigen-specific primary antibody coupled with a fluorescent secondary antibody.

Secondary fluorescent antibodies offer enhanced sensitivity – binding to the primary antibody and then amplifying the fluorescence signal. In addition, they provide greater flexibility since they can be easily combined for multiplexing experiments. Get to know our extensively validated PhenoVue fluor-labeled secondary antibodies. Features include:

- Bright fluorophores for high-quality images
- Highly cross-adsorbed antibodies to minimize cross-reactivity in multiplexing applications
- Both anti-rabbit and anti-mouse antibodies for your common applications
- Validated in high-content screening applications



*A431 cells stained with mouse anti-EGFR antibody + PhenoVue Fluor 488 - Goat anti-mouse antibody, highly cross-adsorbed, and PhenoVue Hoechst 33342 nuclear stain.*

## PhenoVue Fluorescent Secondary Antibodies

- PhenoVue Fluor 488 Goat Anti-Rabbit Antibody Cross-Adsorbed
- PhenoVue Fluor 568 Goat Anti-Rabbit Antibody Cross-Adsorbed
- PhenoVue Fluor 594 Goat Anti-Rabbit Antibody Cross-Adsorbed
- PhenoVue Fluor 488 Goat Anti-Rabbit Antibody Highly Cross-Adsorbed
- PhenoVue Fluor 568 Goat Anti-Rabbit Antibody Highly Cross-Adsorbed
- PhenoVue Fluor 594 Goat Anti-Rabbit Antibody Highly Cross-Adsorbed
- PhenoVue Fluor 488 Goat Anti-Mouse Antibody Cross-Adsorbed
- PhenoVue Fluor 568 Goat Anti-Mouse Antibody Cross-Adsorbed
- PhenoVue Fluor 594 Goat Anti-Mouse Antibody Cross-Adsorbed
- PhenoVue Fluor 488 Goat Anti-Mouse Antibody Highly Cross-Adsorbed
- PhenoVue Fluor 568 Goat Anti-Mouse Antibody Highly Cross-Adsorbed
- PhenoVue Fluor 594 Goat Anti-Mouse Antibody Highly Cross-Adsorbed

## PHENOVUE REAGENTS

## CELLULAR IMAGING INSTRUMENTS



# IMAGING MICROPLATES FOR PRECISION ANALYSIS

See what others can't when you use our imaging microplates designed for cell-based assays, confocal microscopy, and high-content phenotypic imaging and analysis. And to facilitate 3D cell cultures for imaging applications, we offer our specialized CellCarrier™ Spheroid ULA microplates.



## CellCarrier™ Ultra Microplates

Achieve accurate results with our CellCarrier Ultra microplates, engineered to deliver superior images and maximum quality data for all high-content applications.

Our CellCarrier Ultra microplates feature an exceptionally flat bottom, enabling fast autofocusing for optimal clarity. Plus, you'll benefit from superior images thanks to their 188 µm thickness and the high-optical glass-like quality of the cyclic olefin foil imaging surface. Cyclic olefin also offers better transparency in the near UV range when compared to polystyrene, giving you a clearer image for better results. Additional features include:

- Ultralow plate bottom provides better well access when using water immersion and high-numerical aperture (NA) objectives
- Low-profile polystyrene lid results in reduced evaporation
- Unique corner spacers minimize the risks of damaging the imaging surface when stacking
- Various coatings to choose from to suit your application

[SEE ALL CELLCARRIER ULTRA MICROPLATES](#)

PHENOVUE REAGENTS

CELLULAR IMAGING INSTRUMENTS

# IMAGING MICROPLATES FOR PRECISION ANALYSIS

See what others can't when you use our imaging microplates designed for cell-based assays, confocal microscopy, and high-content phenotypic imaging and analysis. And to facilitate 3D cell culture for imaging applications, we offer our specialized CellCarrier™ Spheroid ULA microplates.



## CellCarrier™ Spheroid ULA Microplates

A unique ultralow attachment (ULA)-coated surface in round well plates enables the formation of consistently round spheroids from numerous cellular models. This microplate coating also helps eliminate satellite spheroid growth, which allows for easier data acquisition and analysis. Additional features include:

- Unique design made specifically for 3D spheroids
- Automation compatibility for quick, hassle-free analysis
- Compatible with high-content screening systems such as Operetta CLS™ and Opera Phenix™ Plus

[SEE ALL CELLCARRIER SPHEROID ULA MICROPLATES](#)

### PHENOVUE REAGENTS

### CELLULAR IMAGING INSTRUMENTS



# IMAGING MICROPLATES FOR PRECISION ANALYSIS

See what others can't when you use our imaging microplates designed for cell-based assays, confocal microscopy, and high-content phenotypic imaging and analysis. And to facilitate 3D cell cultures for imaging applications, we offer our specialized CellCarrier™ Spheroid ULA microplates.



## ViewPlate® Microplates

These poly-D-lysine (PDL)-coated and collagen-coated microplates feature a clear-bottom base with an opaque black or white frame and are specifically designed for microscopy-based HCS applications. In addition, they are ideal for multimodal analyses on microplate readers that also have well imaging, such as the EnSight™ multimode plate reader. Varieties include:

- Plastic or glass-bottom (GB)
- 96-, 384-, and 1536-well formats
- White ½-area 96-well plates
- Untreated for biochemical assays
- Tissue culture (TC)-treated, collagen-coated, or PDL-coated for cellular assays

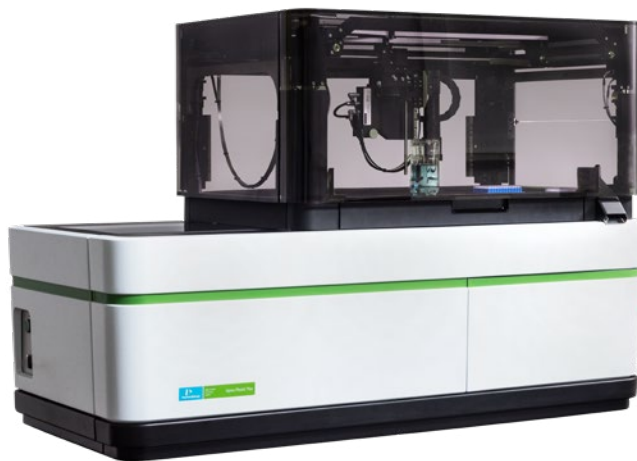
[SEE ALL VIEWPLATE MICROPLATES](#)

PHENOVUE REAGENTS

CELLULAR IMAGING INSTRUMENTS

# HIGH-CONTENT ANALYSIS AND SCREENING SYSTEMS

From basic research to assay development and screening, our high-content analysis (HCA) and high-content screening (HCS) systems produce the highest possible image quality so you can take your research further – in less time than ever before – especially when combined with our easy-to-use workflow-based Harmony® software, robotic systems, and advanced data analytics.



## Opera Phenix Plus High-Content Screening System

For your most demanding high-content applications. Benefits include:

- Modular design adapts to your changing application needs
- Enhanced speed using a dual- or four-camera configuration with simultaneous imaging
- Synchrony Optics™ combines a microlens-enhanced Nipkow spinning disk with a pinhole distance optimized for thick and 3D samples
- Dual-view excitation of neighboring spectral channels minimizes crosstalk
- Custom-designed high-NA water immersion objectives capture more photons and provide high-image resolution even in thick samples
- Fast imaging frame rate of up to 100fps and optional pipettor module captures fast cellular responses

**Best for disease research and screening labs needing fast throughput and high performance.**

[CLICK HERE TO LEARN MORE ABOUT OUR OPERA PHENIX PLUS HCS SYSTEM](#)

### PHENOVUE REAGENTS

### CELLULAR IMAGING INSTRUMENTS



# HIGH-CONTENT ANALYSIS AND SCREENING SYSTEMS

From basic research to assay development and screening, our high-content analysis (HCA) and high-content screening (HCS) systems produce the highest possible image quality so you can take your research further – in less time than ever before – especially when combined with our easy-to-use workflow-based Harmony® software, robotic systems, and advanced data analytics.



## Operetta CLS High-Content Analysis System

For routine 2D high-content assays and complex assays. Benefits include:

- Confocal spinning-disk technology provides a gentle imaging process (especially for live-cell experiments) for efficient background rejection
- Flexible excitation with a powerful and stable 8x LED light source
- Proprietary automated water-immersion objectives with very high numerical aperture, giving faster read times and reduced photodamage

**Best for basic research and assay development labs with multiple users and intermediate throughput requirements.**

[CLICK HERE TO LEARN MORE ABOUT OUR OPERETTA CLS HIGH-CONTENT ANALYSIS SYSTEM](#)

## PHENOVUE REAGENTS

## CELLULAR IMAGING INSTRUMENTS

# CELL IMAGING

In addition to our high-content screening systems, our portfolio includes instruments that cover all aspects of cellular analysis, whether you're studying dynamic cellular processes in real time or need the flexibility of having image cytometry alongside standard detection modes.



## MuviCyt Live-Cell Imaging System

For deeper insights from live-cell imaging. Benefits include:

- Ability to study dynamic cellular processes in real time
- Designed to operate inside your cell-culture incubator, maintaining optimal conditions for your cells
- Time-lapse recording with multi-position scanning
- Small footprint and ease of operation
- Three-color fluorescence (GFP, RFP, Hoechst, and Brightfield)
- Open-stage design and flexible sample carrier and vessel type (microplate, petri-dish, flask, slides)
- Z-stacking capability to image thicker samples and be able to maintain focus on larger objects over long time periods
- Unlimited and flexible positioning of FOVs allow you to repeatedly monitor positions of interest within the well
- Flexible Movie Maker software with matrix capability to arrange movies of different channels, treatments, or wells side by side

**Best for labs needing to study dynamic cellular processes in real time.**

[CLICK HERE TO LEARN MORE ABOUT OUR  
MUVICYTE LIVE-CELL IMAGING SYSTEM](#)

## PHENOVUE REAGENTS

## CELLULAR IMAGING INSTRUMENTS



# CELL IMAGING

In addition to our high-content screening systems, our portfolio includes instruments that cover all aspects of cellular analysis, whether you're studying dynamic cellular processes in real time or need the flexibility of having image cytometry alongside standard detection modes.



## EnSight™ Multimode Plate Reader

For image-based cytometry via well-imaging technology alongside a suite of other detection modes. Benefits include:

- Fast well imaging alongside standard detection technologies – alpha technology, fluorescence intensity, TRF, luminescence, and absorbance
- Flexible and upgradeable configurations
- Workflow-based Kaleido software for everyday and complex assays
- Imaging mode for a variety of assays, including:
  - Cell health and toxicity, proliferation, migration, viral infection, transfection efficiency, and spheroid growth
  - Imaging small animals such as zebrafish
  - Assessing cell-based assay quality
- Ability to compare and combine results from different detection technologies to take an orthogonal approach

**Best for research and assay development labs that need the flexibility of multiple detection modes.**

[CLICK HERE TO LEARN MORE ABOUT OUR ENSIGHT MULTIMODE PLATE READER](#)

## PHENOVUE REAGENTS

## CELLULAR IMAGING INSTRUMENTS

# SIMPLE SOFTWARE FOR COMPLICATED ANALYSIS

Get the most out of your analysis with the right software. Harmony, Columbus, and Signals Screening software are all compatible with our imaging instruments and PhenoVue cellular imaging reagents. Our software makes it easy for you to generate and analyze image data from cellular samples and *in vivo* models.



From acquisition to analysis, Harmony high-content imaging software empowers you to easily quantify more of what you see in your images. With everything you need to analyze even the most complex cellular models in 3D, discriminate phenotypes confidently, and turn your data into discovery, Harmony software enables you to control every aspect of your analysis through a single, easy-to-use workflow-based interface.

[CLICK HERE TO LEARN MORE](#)



A powerful solution for high-content analysis, our Columbus software is the first universal high-volume image data storage and analysis system that brings fast, secure, web-enabled access to images from a vast range of sources including all major high-content screening instruments. Access, view, annotate, and analyze utilizing high-performance computing with Columbus Plus, and measure multidimensional images from anywhere at any time.

[CLICK HERE TO LEARN MORE](#)



This fit-for-purpose data processing engine guides scientists through managing and analyzing HCS data from assay platforms including plate readers, high-content readers, SPR instruments, and more. Import data from multiparametric datasets, and transform and publish results with minimal tuning or optimization. Use powerful multivariate statistical methods and unsupervised machine learning techniques to reduce dimensionality so you can identify parameters that best define distinct cellular fingerprints.

[CLICK HERE TO LEARN MORE](#)

PHENOVUE REAGENTS

CELLULAR IMAGING INSTRUMENTS

# INTEGRATED AUTOMATED UNCOMPLICATED

Higher throughput, improved efficiency, and reduced variability might sound like a dream. But these benefits are a reality when you automate your lab. Our experts have extensive experience developing integrated workstations for automating cell-based assays. Whatever your screening needs, we have a solution that's right for your lab.

Whether you're integrating with our plate::handler™ FLEX system for automated plate loading, or integrating your entire high-content screening workflows with our explorer™ G3 automated workstations, the difference in your analysis is clear – increased productivity, less risk of human error, safer working conditions, and the ability to maximize your data for better results.

[CLICK HERE FOR MORE INFORMATION ABOUT  
OUR AUTOMATION SYSTEMS](#)



plate::handler FLEX system



explorer™ G3 workstation

PHENOVUE REAGENTS

CELLULAR IMAGING INSTRUMENTS



# COMPLETE SERVICES FOR INCREASED PRODUCTIVITY AND EFFICIENCY

Today’s lab leaders are facing several challenges, from tighter deadlines to increased budget scrutiny to teams with various degrees of comfort with lab equipment. Time that could be spent getting ahead is spent on noncore activities.

To help you overcome barriers to success, OneSource® Laboratory Services has built a team of trained scientists and engineers who bring their real-life knowledge to you, helping increase your productivity with recommendations on how to best utilize your assets. With this knowledge, you can get back to your core mission.

We service our instruments, as well as equipment from other manufacturers – from contracts and performance maintenance to full-lab asset management delivered globally, we can help you make the most of your important lab assets. And for labs looking to introduce new equipment and techniques, we offer training at our facilities and yours.

## INSTRUMENT SUPPORT SERVICES

Maintaining labs is never easy, especially when an instrument is down. We know you’re responsible for the performance of your laboratory, and we make sure nothing holds you back. Our field service engineers, manufacturing site technical services, and research and development teams are here at your disposal to ensure maximum uptime.

You need your instruments to be reliable and running with minimal downtime, and you want flexible service agreements that are easy to comprehend. We understand, and we’re here to help.

## EDUCATION SERVICES

Whether you are looking for a basic instrument refresher course, simple troubleshooting techniques, general application support, or method optimization, our field application scientists or service engineers will come directly to your lab. Through education, you will gain knowledge and insights into the latest techniques, not only increasing your confidence, but also unlocking the full potential of your instrument.



### ONESOURCE SERVICES

- Asset optimization
- Lab environment and instrument monitoring
- Asset location
- Education and training
- Technology and descriptive analysis
- IoT/Lab of the future
- Remote support
- Multivendor services
- Compliance
- Lab support
- IT solutions
- Instrument qualifications

### PHENOVUE REAGENTS

### CELLULAR IMAGING INSTRUMENTS



For more information visit [www.perkinelmer.com/PhenoVue](http://www.perkinelmer.com/PhenoVue)

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