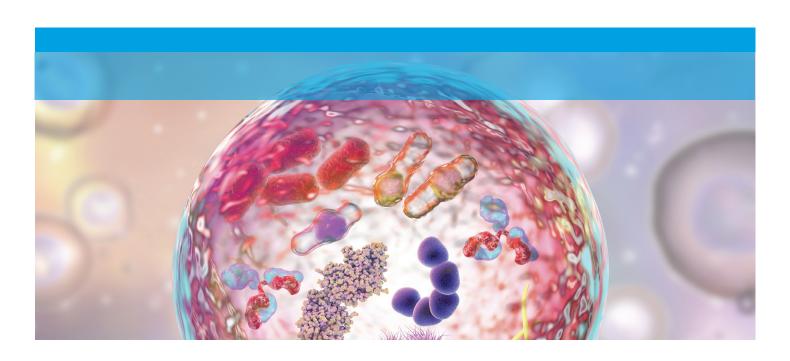


Supercharge Your Cell Research

Agilent cell analysis portfolio













Shorten the path to your next life-changing breakthrough

Advances in cell imaging, real-time cell analysis, and flow cytometry are rewriting the rules in the race against disease. But, to take full advantage of these technologies, your lab must maximize workflow efficiency and produce robust data. The right partner can help your lab accelerate discoveries.



Improve our world through more effective treatments and a higher quality of life

Uncovering unique cell biology. Discovering novel drug targets. Improving preclinical toxicology. Pioneering the next generation of immunotherapies.

Cell analysis can help you understand, predict, and influence the factors that determine cell health, proliferation, function, and death. But, conducting numerous investigations and compiling multiple data sets is complicated, and can tax the resources of any lab.

You can simplify and enhance your workflows—while enabling both beginners and experts to generate meaningful insights—by partnering with Agilent.

Research applications and industries

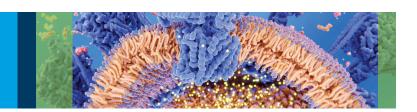
- Cancer biology: Investigate dynamic cancer cell strategies with innovative cell analysis technologies.
- Cardiovascular research: Perform functional analysis of cardiomyocyte contractile, electrical and metabolic activities.
- Cell biology: Optimize cell culture workflows and assays and perform robust quantitative analysis.
- Cell health and viability: Measure biological processes such as proliferation, apoptosis, and cytotoxicity.
- Cell metabolism: Analyze key indicators of healthy cell function and predict cellular performance for in vitro disease models.
- Cell migration and invasion: Measure chemotaxis, and cell migration and invasion in real time.
- Cell signaling: Identify biochemical targets and develop therapeutic strategies.
- Developmental biology: Confocal and widefield imagingbased support for whole-organism studies.
- Drug discovery and development: Expand your drug pipeline with cell-based assays.
- Histology and whole-organism imaging: Deliver deeper insight into diverse sample types.

- Immunology: Understand the function and activity of immune cells and gain deeper insight into the mechanisms behind diseases and infections.
- Immuno-oncology: Assess real-time cell function, phenotype, and fate to develop therapies that harness the immune system to attack cancer cells.
- Microbiology: Quantify microbial growth, perform multiparametric profiling of microbial cultures, and detect microbial contamination.
- Molecular biology and biochemical: Achieve robust results for ELISA, nucleic acid and protein quantification, and enzyme kinetics.
- Neurobiology research: Quantify neuronal cell dynamics for research in normal development, regeneration, and the role of neurite outgrowth in neurological disease.
- Stem cell biology: Acquire mechanistic insights into disease and test the liability and effectiveness of new drugs.
- Toxicology research: Directly measure genotoxicity, mitochondrial toxicity, cytotoxicity, and cardiotoxicity with high specificity and sensitivity.
- Virology: Gain insights into virus-host cell interactions using robust cell analysis.



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Agilent Seahorse XF analyzers

Transform your measurement of energy metabolism

To fully understand what drives cell phenotype and function, you must consider the influences of energy metabolism.

Examining energy metabolism has led to new insights into biological function. In fact, some of this decade's most significant discoveries have hinged upon elucidating the role of energy metabolism in cellular processes.

Agilent Seahorse XF analyzers enable robust measurements of mitochondrial activity, glycolysis, and ATP production rates in a microplate format.

Capabilities include:

- Label-free detection of discrete bioenergetic changes in live cells, in real time
- Multiple parameters reported from every assay well, including oxygen consumption and proton efflux rates, and ATP production rates
- Compatibility with a wide range of 2D and 3D biomaterials, including adherent and suspension cells, tissue, organoids, spheroids, small organisms, and isolated mitochondria
- Four-port injection system with automated mixing feature for assessing immediate cellular responses to substrates, inhibitors, and other compounds
- Transient microchamber provides superior sensitivity and signal to noise ratio



Seahorse XF imaging and normalization system

By integrating cell count normalization into Agilent Seahorse Wave software, the Agilent Seahorse XF imaging and normalization system improves data interpretation and makes your XF analysis more successful than ever.

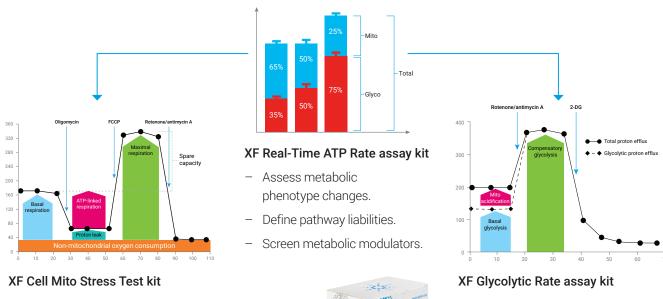
Learn more at:

www.agilent.com/lifesciences/ normalization



Deepen your insights into cell function with Agilent Seahorse XF assay kits

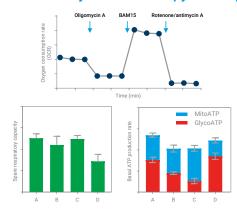
Core assays for therapeutic discovery and research



 Get a complete mitochondrial respiration profile with multiparametric output.

- Quantify glycolytic activity in real time.
- Reveal insights not evident with an end-point lactate accumulation assay.

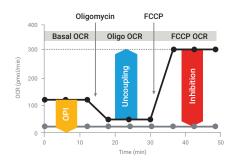
Customized assay for cell therapy development



XF T Cell Metabolic Profiling kit

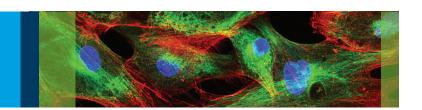
- Reveal T cell metabolic signatures that are critical for antitumor activities.
- Now validated for NK cells.

Turnkey solution for preclinical safety studies



XF Mito Tox assay kit

 Identify mitochondrial toxicity with high sensitivity, specificity, and a simplified assay protocol.



Agilent xCELLigence RTCA

Label-free real-time cell analysis

Discover what you've been missing between end points. The Agilent xCELLigence real-time cell analyzer (RTCA) harnesses impedance-based biosensor technology to continuously monitor cell health, behavior, and function with high accuracy, sensitivity, and reproducibility—all in real time without using labels.

Simply robust and powerful

The xCELLigence portfolio offers nine different configurations with a range of throughputs (16-, 48-, 96-, or 384-well formats) and functionalities. Perform quantitative monitoring of cardiomyocyte beating (milliseconds), receptor signaling (minutes), cell migration and invasion (hours), and cell growth and killing kinetics (hours/days) in real time without the use of labels. Experience robust assays, from discovery and process development to manufacturing quality control.

Control unit with state-of-the-art RTCA software

- Simple assay setup
- Streamlined real-time data acquisition and analysis
- Powerful immunotherapy analysis tools
- Support for 21 CFR
 Part 11 compliance



RTCA E-Plate

- Biocompatible biosensor E-Plate
- Glass or PET substrate
- Compatible with coculture device



xCELLigence RTCA analyzer

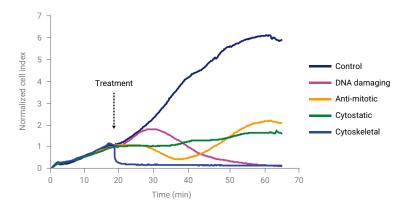
- Processing data in real time
- Validated performance

xCELLigence RTCA station

- Interfacing with biosensor E-Plate
- High temporal resolution (seconds)
- Independent cradles for multiple users
- Designed for culture incubator

Explore a wide range of research applications

- Cell migration and invasion
- Compound-mediated cytotoxicity
- Virus-mediated cytopathogenicity
- Immune cell killing and potency
- Functional monitoring of GPCR signaling
- Cell adhesion and spreading
- Cell proliferation and differentiation
- Barrier function disruption and recovery
- Continuous quality control of cells



Agilent xCELLigence RTCA eSight

Get two instruments and twice the results from one powerful system

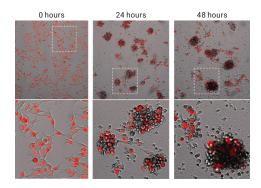
The Agilent xCELLigence RTCA eSight provides a simple, automated workflow that generates crucial data around the clock—all within your incubator. With real-time live-cell analysis, and the combination of impedance (label-free) and imaging (brightfield, red, green, and blue fluorescent channels), you can easily monitor and quantify kinetic cellular data over the course of seconds, hours, or days. Two imaging cradles support 6-, 12-, 24-, 48-, 96-, or 384- well capability along with whole-well imaging, while three multiplex (imaging plus impedance) cradles ensure a multiuser friendly experience to secure a high-throughput, information-rich, and efficient workflow.

Now take advantage of the latest v1.4 xCELLigence RTCA eSight software to image standard microtiter plates with 5×96 -well throughput, along with 3D organoid capabilities. RTCA eSight software also securely manages, verifies, and maintains electronic records in full compliance with US 21 CFR Part 11 and EU Annex 11 requirements, as part of the newly released compliance license.

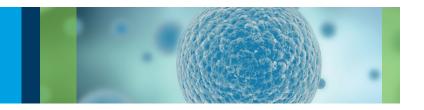
Multiplex impedance-based data with live-cell imaging for increased confidence

xCELLigence RTCA eSight adds live-cell imaging for increased confidence in your cell analysis and conclusions. Go a step further in your research and easily monitor and quantify assays spanning immune cell activation, proliferation, clustering, potency, target-cell killing, as well as viral cytopathic effect and drug discovery. Uncover unique drug mechanisms of action and cellular phenomena by multiplexing with both impedance and imaging—all in the same well.

Capture precious cellular and biological events as they happen, and never miss a crucial time point again.



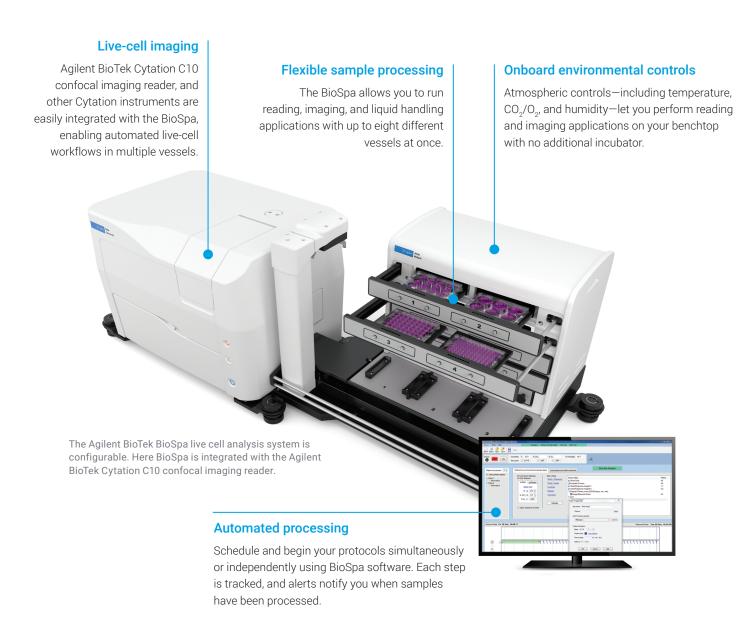
Seeing is believing: Fully unlock your CAR-TCR T cell research by visualizing and quantifying kinetic events ranging from monoculture to complex coculture experiments. Users can select 5x, 10x, or 20x objectives.



Agilent BioTek BioSpa live cell analysis system

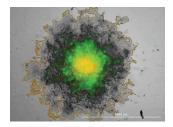
Multiplate processing with walkaway convenience

The Agilent BioTek BioSpa live cell analysis system lets you process up to eight vessels for hours, days, or weeks at a time. Onboard atmospheric controls enable kinetic reading and image processing on a laboratory benchtop. You can also perform live-cell imaging, including liquid handling under sterile conditions, by placing the system into a laminar flow hood.

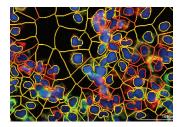


Automate live-cell workflows

BioSpa integration with Agilent BioTek liquid handlers and imagers creates an automated system for long- and short-term live-cell assays. Agilent BioTek Gen5 software provides the data capture and analysis for imaging operations.



Three-dimensional cell structure details are captured with the Z-stacking and Z-projection features in Agilent BioTek Gen5 software.



Agilent BioTek Gen5 software tools like nuclear and cytoplasmic masking define regions of interest for detailed analysis.





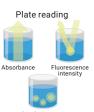




Expand the already powerful Agilent BioTek Gen5 analyses with application-specific modules including (1) spot counting, (2) neurite outgrowth, (3) single-object tracking, (4) scratch wound healing, and more. Each module integrates seamlessly in Gen5 and provides in-depth analysis and customizable metrics.

Featured technologies

The Cytation product line offers a range of microscopy and imaging capabilities, including upright and inverted microscopes, confocal and widefield imaging, plus multimode plate reading.







The BioSpa live cell analysis system fits compactly in a laminar flow hood, enabling long-term, kinetic, live-cell assays under sterile conditions.



Related instruments and accessories

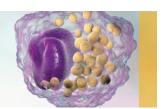
BioSpa integrates with several Agilent BioTek instruments to enable a variety of automated workflows. Key components of a system can include:

- Cytation C10/7/5/1 cell imaging multimode readers
 Confocal and widefield automated imagers and plate readers
- Synergy Neo2 hybrid multimode reader
 Fast, accurate multimode plate reading, up to 1536 wells
- MultiFlo FX multimode dispenser
 Automated liquid handling steps with peristaltic and syringe pump delivery
- 405 TS washer
 Rapid 96- and 384-well plate washing
- 406 FX washer dispenser
 Multifunctional liquid handling



The Agilent BioTek BioSpa live cell analysis system with the Agilent BioTek MultiFlo FX multimode dispenser (let) and Cytation 5 cell imaging multimode reader (right).

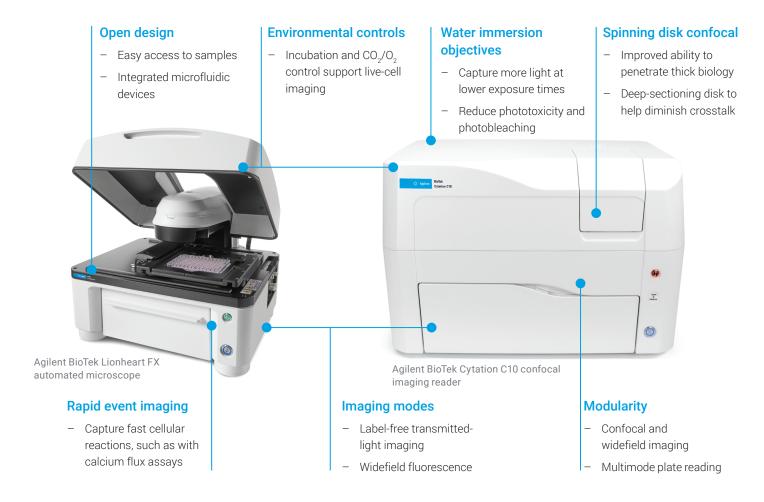




Agilent BioTek cell imagers and microscopes

Bring your science to life

Capture spectacular images, Z-stacks, montages, and time-lapse sequences using different vessels, including Agilent cell culture and imaging microplates. These instruments support a wide range of microscopy workflows, including live-cell kinetics.



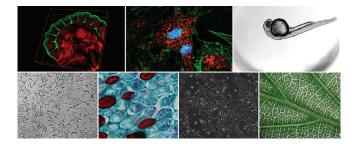


Cytation cell imaging multimode readers

The Cytation line offers a broad range of of imaging modes, plus multimode reading, across many application areas and budgets.

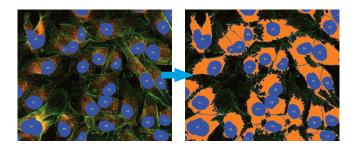
Capture with confidence

Execute a wide range of widefield and confocal imaging applications including live- and fixed-cell samples.



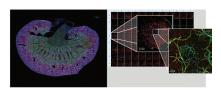
Analyze with certainty

Use Gen5 to analyze and obtain a wealth of data on a population, single-cell, or subcellular level.

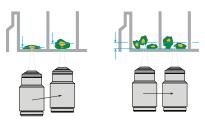


Featured technologies

The wide-field-of-view camera provides fast imaging. Tissue sections on slides (below left) and in microplates (right) can be imaged from low to high magnification.

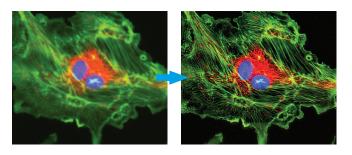


The Agilent BioTek proprietary laser autofocus offers speed, excellent reproducibility, and accuracy while preventing phototoxicity and photobleaching.



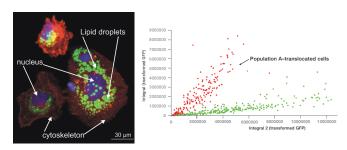
Process and optimize images

Image-processing tools provided by Gen5 software improve your final results, delivering publication-quality images.



Publish without external software

Automatically create scatterplots, histograms, and IC_{50}/EC_{50} curves from generated data.



Related instruments and accessories

Enhance the live-cell imaging and microscopy capabilities of Agilent BioTek instruments with an extensive range of objectives, filters, and peripherals. Application-specific modules for Gen5 software provide advanced analysis and customizable metrics.



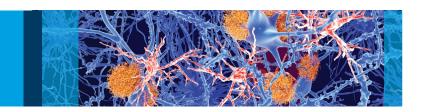


Dual-reagent injector module

Agilent BioTek AutoScratch wound

making tool automatically creates scratch wounds

Explore the entire Agilent BioTek imaging and microscopy instrument portfolio at www.agilent.com/lifesciences/biotek-imaging



Agilent BioTek liquid handling and automation

Save time, space, and money

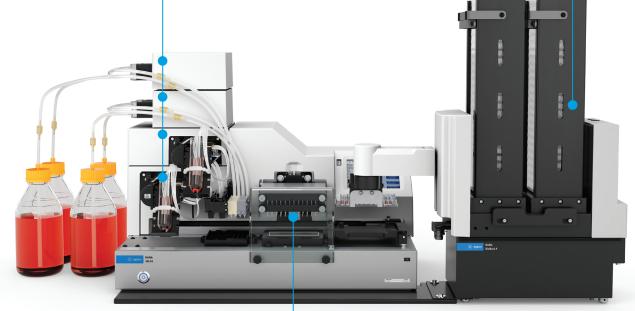
Why use multiple instruments for washing and reagent dispensing? With their small footprint, Agilent BioTek washers, dispensers, and combination washer dispensers offer the ultimate modularity. These affordable, compact instruments are designed to offer the best performance, with low maintenance, ease of use, and powerful functionality.

Automate seamlessly

The Agilent BioTek BioStack microplate stacker is compact and versatile, with rapid plate exchange to increase throughput. BioStack enables automated workflows in microplates and slides.

Noncontact reagent dispensing Add up to two peristaltic pumps and

Add up to two peristaltic pumps and two dual-syringe pumps to the plate washer to dispense up to six reagents on a single instrument.



Agilent BioTek 406 FX washer dispenser

Agilent BioTek BioStack microplate stacker

Plate washing

The dual-action manifold allows separate control of aspirate and dispense tube positions for optimized 96- and 384-well plate washing.

Modularity enables application versatility

Agilent BioTek liquid handling and automation instruments are designed for ultimate versatility, with modules that enable expanded applications as your research needs change. The wide range of applications includes:

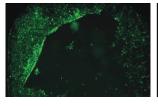
ImmunocytochemistryHigh-content screening

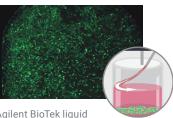
Magnetic bead assays
 Cell seeding

Automated media exchange – for 3D cell structures

- ELISA







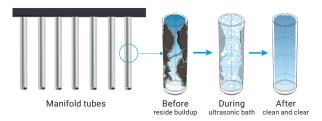
The angled tips available for the Agilent BioTek liquid handlers ensure maximum cell retention.



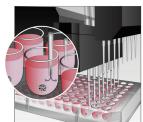
The Agilent BenchCel microplate handler integrates with several Agilent BioTek instruments to create an automated ELISA workstation.

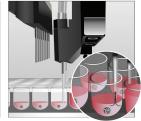
Featured technologies

The Agilent BioTek Ultrasonic Advantage feature of the Agilent BioTek 406 FX washer dispenser automatically maintains clog-free dispense and aspirate tubes.



The Agilent BioTek MultiFlo FX offers Automated Media Exchange (AMX) technology to provide gentle media exchange for cells and spheroids.





Related instruments and accessories

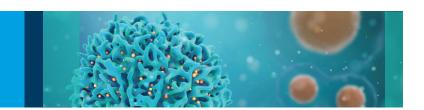
Agilent BioTek liquid handlers integrate with BioSpa and other Agilent BioTek microplate imagers and readers to enable fully automated live-cell workflows.



The BioStack integrates with Agilent BioTek liquid handlers, imagers, and readers for increased throughput and walkaway convenience of multiplate processes.



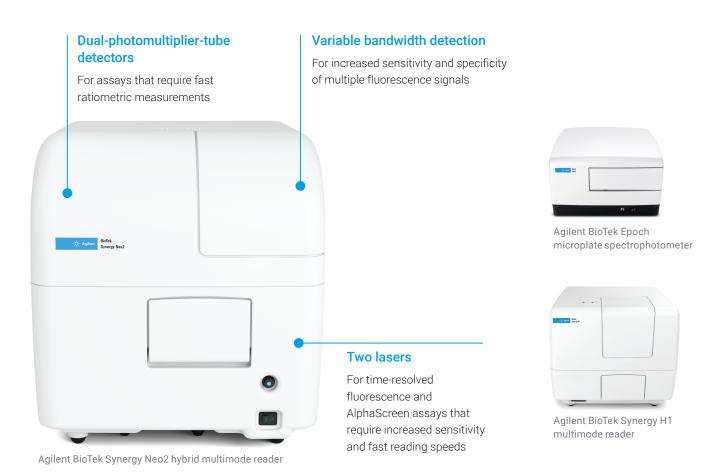
See the complete portfolio of Agilent BioTek liquid handling products at www.agilent.com/lifesciences/biotek-automation



Agilent BioTek microplate readers

Experience ultimate flexibility and performance

Configurable Agilent BioTek microplate readers offer a range of modules, options, and accessories to address low-, medium-, and ultrahigh-throughput applications. Absorbance readers deliver excellent performance and functionality from basic ELISA to advanced detection chemistries. Multimode readers support monochromator- and filter-based, and combination methods—enabling detection of UV-Vis absorbance, luminescence, fluorescence, fluorescence polarization, time-resolved fluorescence (TRF), FRET, and AlphaScreen assays.



Modular detection covers multiple applications

The modular and upgradable Agilent BioTek multimode readers offer expanded capabilities as your research needs change. The applications for these readers are broad ranging and include:

High-throughput screening
 ELISA

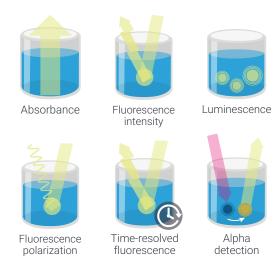
Biomarker assaysHTRF

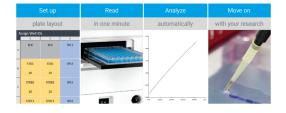
Nucleic acid quantification
 Microbial growth assays

Protein quantification – AlphaScreen assays

Rapid kineticsFRET

Applications in 6- to 1536-well microplates are accommodated, depending on the selected microplate reader.

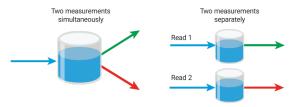




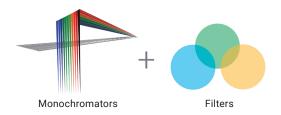
Agilent BioTek Gen5 data analysis software—with many preprogrammed assays—makes plate setup, reading, and analysis seamless and efficient, so you can move on with your research.

Featured technologies

Synergy Neo2 has dual PMTs, enabling rapid, simultaneous measurements forfluorescence polarization (FP), fluorescence resonance energy transfer (FRET), and time-resolved FRET (TR-FRET) assays.



The combination of filters and monochromators in Synergy H1 and Synergy Neo2 provides flexibility and performance.



Related instruments and accessories

The Agilent BioTek Take3 microvolume plates enable microvolume nucleic acid measurements in the Epoch microplate spectrophotometer and Synergy multimode reader.



The reagent injector for Synergy Neo2 and Synergy H1 has straight tips for vigorous inject/read assays, or angled tips for gentle dispensing to cell layers.





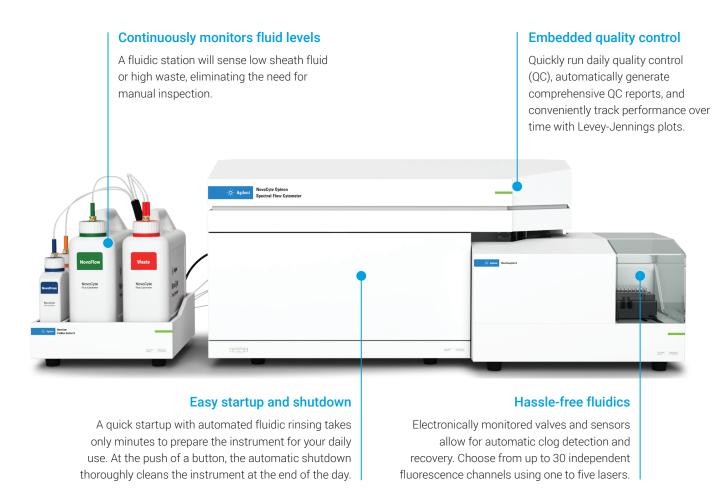
Agilent NovoCyte flow cytometers

Find answers to your flow cytometry frustrations

Built on a proven platform, spectral and conventional flow cytometry is within your reach. With the Agilent NovoCyte Opteon spectral flow cytometer or the Agilent NovoCyte Penteon, Quanteon, and Advanteon, these flow cytometers deliver expanded capabilities that accommodate today's sophisticated, multicolor flow cytometry assays.

Put more flow into your flow cytometry with features like:

- Innovative spectral capabilities to analyze more markers simultaneously and increased flexibility in panel design
- High-sensitivity and resolution
- Smart design functionalities and walkaway convenience
- Automation-ready capabilities for high-throughput needs
- Wide, seven-log dynamic range that eliminates the need for routine detector adjustments
- Excellent side-scatter resolution of 100 nm, which allows for small particle detection
- Exceptional fluidic stability and precise volumetric measurement for absolute counts in every sample





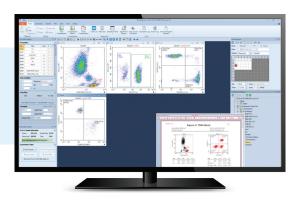
Flow cytometry doesn't have to be complicated

Instrument clogging. Endless detector setting adjustments. Different software programs for acquisition and data analysis. If you use flow cytometry to analyze cell characteristics, then you've probably dealt with all of these hassles and more. But here's the good news: NovoCyte flow cytometers put your flow frustrations to rest.

- Begin and end your day with ease: It takes just minutes to prepare the cytometer for use, and prescheduled shutdown includes an automatic deep clean.
- Keep clogs at bay: Electronically monitored valves and sensors allow for automatic clog detection and recovery.
- Reduce the need for manual inspections The cytometer automatically detects low fluid or high waste.
- Maintain quality: An automatic QC test monitors instrument performance.
- Intuitive and easy-to-use software: There is no steep learning curve to focus on data generation.
- Analyze your data while acquiring samples in the background: Maximize your efficiency without wasting your time.

The Agilent NovoSampler Q or S, which can be integrated into different automation platforms, efficiently processes FACS tubes (using a 40-tube rack) and 24-, 48-, 96-, and 384-well plates.

Streamline your sample acquisition, data analysis, and reporting. The latest edition of our industry-leading NovoExpress software provides an exceptional user experience.





Agilent microplates

Meeting the needs of today's cell analysis procedures

Today's cell analysis workflows incorporate multiple steps and components, including test molecule storage, sample purification, dilution and transfer of assay components, and analysis of each final test condition. The Agilent portfolio of reagent reservoirs, storage/assay plates, filter-bottom microplates, and imaging microplates provide the solutions you need to perform each portion of your assay procedure.

Compound library storage

Store compound libraries and large numbers of biological samples safely and efficiently. All storage plates are sealable and automation friendly. www.agilent.com/microplates/storage_plates

Assay component dilution and transfer

Perform serial dilutions for IC_{50}/EC_{50} evaluations. Easily hold cells, media, and assay reagents before transferring with manual or automated pipetting. www.agilent.com/microplates/reservoirs

Filter-based assay performance

Customize filter-based applications by optimizing sample preparation and final yield output.

www.agilent.com/microplates/filter_plates

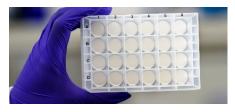
Image-based cellular analysis

High-quality transmitted light and fluorescence imaging is possible using clear or black-walled microplates with coverslip-thick bottoms in 96- or 384-well formats.

www.agilent.com/microplates/imaging_plates











Custom solutions

Your application is unique. While there are plenty of standard microplate options to choose from, the right microplate for your needs could be a variation of an existing product or a completely new design. Learn more about our custom solutions at www.agilent.com/microplates/custom_plates



Move your science forward, faster

Where can you find the support, services, and expertise that will give you the confidence to pursue deeper insights into diseases and their potential therapies? Look no further than Agilent. Our broad, multidisciplinary community puts your mission-critical goals at the center of everything we do.

Agilent CrossLab services for cell analysis

Unplanned instrument downtime can waste precious samples and set your research back weeks or months. Control costs and power your workflow productivity by partnering with Agilent CrossLab services. Together, we can help you maximize uptime through predictive diagnostics, control service costs, and produce publication-ready data.



View or download the brochure at www.agilent.com/lifesciences/cell-analysis-crosslab



An extensive support network

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