

Agilent BioTek Synergy Neo2 Hybrid Multimode Reader

Speed and ultra-high performance



Agilent BioTek Synergy Neo2 Hybrid Multimode Reader



Synergy Neo2 shown with CO₂/O₂ gas controller and dual reagent injector.

The BioTek Synergy Neo2 hybrid multimode reader is designed for the screening laboratory, with speed and ultra-high performance. It features patented Agilent BioTek Hybrid Technology, with its independent optical paths that ensure uncompromised performance in all detection modes.

The Agilent BioTek Gen5 microplate reader and imager software offers complete reader control, powerful data analysis, automation, and LIMS integration.

The fastest, highest-performing Agilent BioTek multimode reader

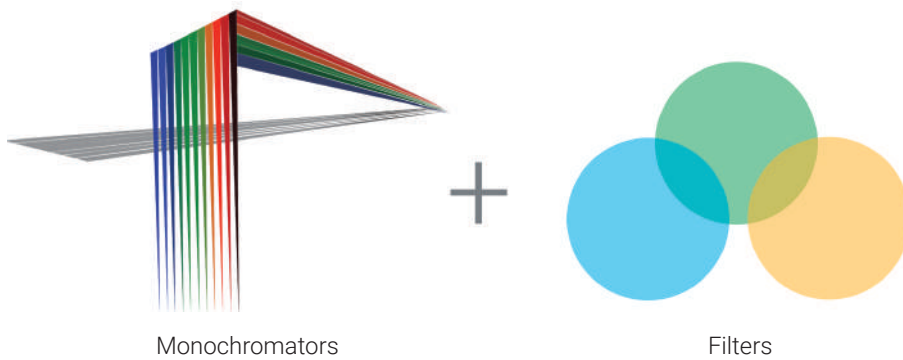
The Synergy Neo2 is the fastest, highest-performing BioTek multi-mode microplate reader, ideally suited for a wide range of screening laboratories, including pharmaceutical, biotechnology and academic screening facilities.

Synergy Neo2 features include:

- TRF and Alpha lasers for speed and improved sensitivity
- Patented Hybrid Technology with independent filter and monochromator-based optics for performance and flexibility
- Variable bandwidth selection for optimized fluorophore specificity and sensitivity
- Ultra-fast plate processing speeds with multiple PMT detectors
- Live cell options: atmospheric control and direct bottom plate detection

"This reader is sensitive and fast. Easy to use and flexible, of particular note is the ability to use either filters or monochromator. We were able to purchase the configuration we currently use, but can upgrade with additional functionality as needed."

- Reviewer, Biosero

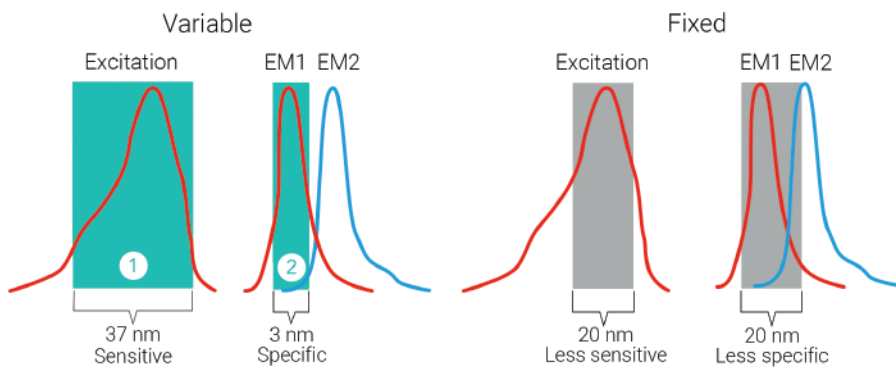


Hybrid plate reader: Flexibility and performance

With its patented combination of monochromator and filter optics, Synergy Neo2 is an advanced plate reader that delivers both the flexibility and performance you need for any microplate assay in your lab.

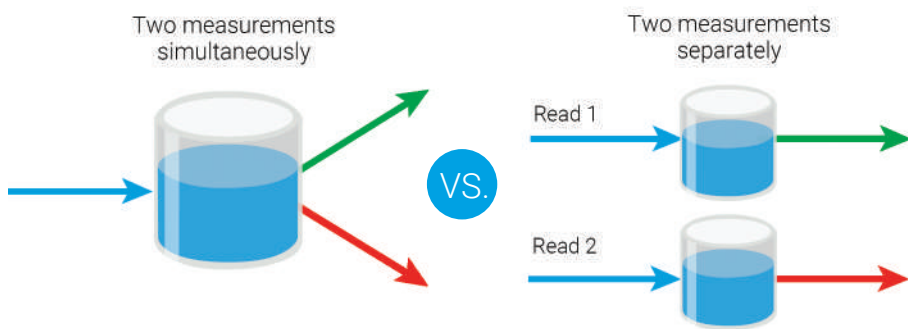
Monochromator: variable bandwidth, absorbance, fluorescence, luminescence

Filters: fluorescence polarization, time-resolved fluorescence, Alpha, filtered luminescence



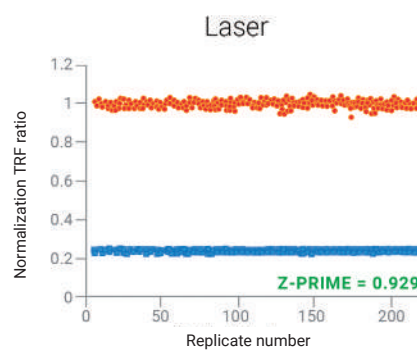
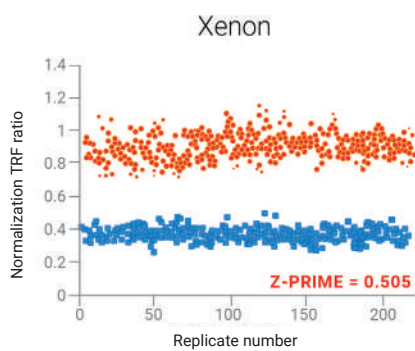
Variable bandwidth for sensitivity and specificity

The Synergy Neo2 optics use a quad monochromator design, with variable bandwidth settings between 3 nm and 50 nm, in 1 nm increments. Wide bandwidth settings (1) provide increased sensitivity and lower limits of detection. Narrow bandwidth settings (2) provide increased specificity when multiple signals are present, reducing signal crosstalk and enhancing assay performance.



Dual PMT = fast reading speed

Two PMTs: Synergy Neo2 takes two measurements simultaneously. Other systems have to perform FP, FRET, and TR-FRET, measurements one at a time, which considerably lengthens the time to results.



Two lasers: For TRF, TR-FRET, and Alpha

Alpha and TRF assays benefit from the increased sensitivity and fast reading speeds enabled by a laser-based system.



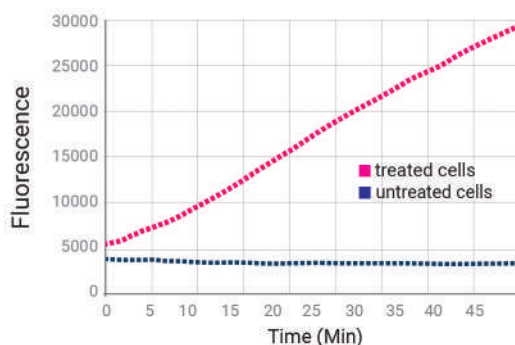
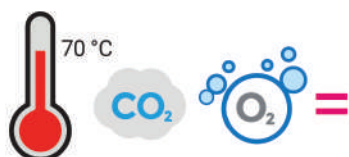
Compounded time savings with the Agilent BioTek BioStack Neo

Where automation is required, BioStack Neo, with its dual plate carrier, helps process plates quickly, leading to significant time savings, especially when those savings are compounded over multiple plates.



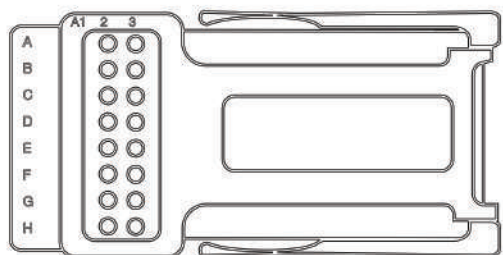
Agilent BioTek Synergy Neo2

The most advanced, high-performance, high-speed plate reader on the market today. Designed to meet the sophisticated needs of laboratories, the fully featured and flexible Synergy Neo2 offers uncompromising performance for cell-based and biochemical assays.



Environmental controls for cell-based assays

Temperature control to 70 °C, CO₂/O₂ control, and shaking create the ideal environment for live cell assay workflows. A consistent environment leads to consistent data for long-term kinetic assays.

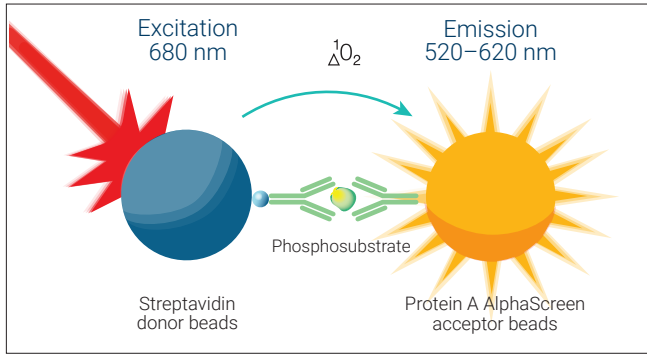


Microvolume analysis the Agilent BioTek Take3 microvolume plate

Synergy Neo2 acts as a microvolume analysis system when the Take3 or Take3 Trio microvolume plates are used. With only 2 µL each, run 16 or 48 samples at a time, saving considerable time compared to single-sample devices. Pre-defined ssDNA, dsDNA, RNA, and protein protocols provide rapid quantification results.

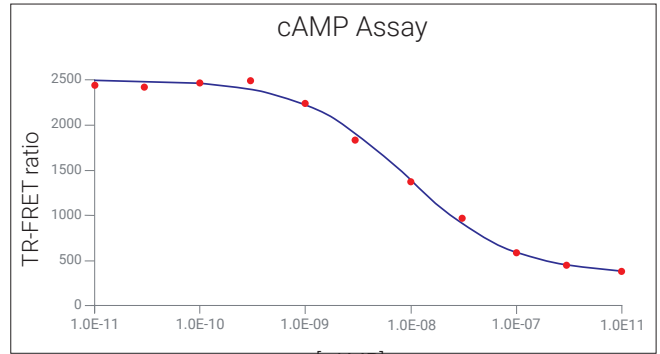
Applications

Alpha assays



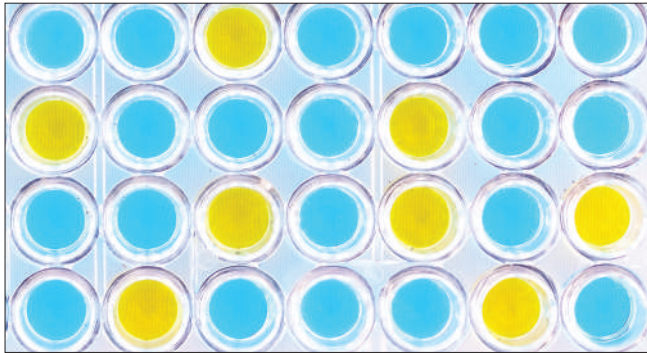
The laser light source in Synergy Neo2 provides high energy for excellent sensitivity for Alpha proximity assays.

TR-FRET



Laser-based TRF enables fast measurements with the exceptional sensitivity required by TR-FRET and HTRF methods.

ELISA



ELISA methods with colorimetric, fluorescent, and luminescent substrates are easily detected with Synergy Neo2.

Luciferase reporter assays



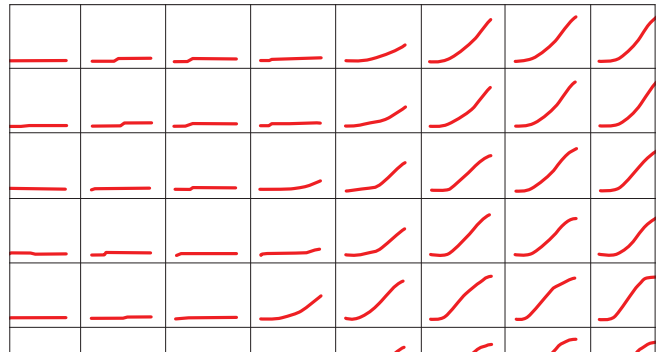
Luciferase-based reporter assays measure luminescent signal, allowing the quantification of the activity of factors affecting the signaling pathways under investigation.

Nucleic acid and protein quantification



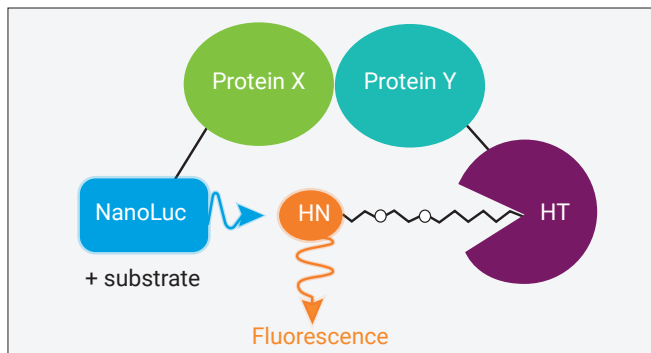
Nucleic acid and protein quantification assays can be executed by spectrophotometric or fluorescent determination with Synergy Neo2.

Cell growth



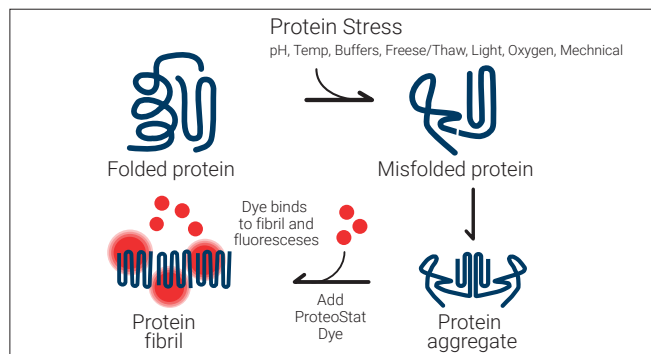
Microbial growth assays, including yeast and bacteria, can be measured by several methods, including turbidimetric measurements with Synergy Neo2.

Bioluminescence resonance energy transfer (BRET)



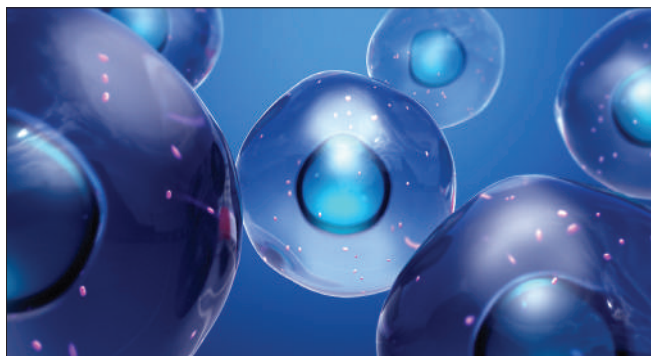
Bioluminescence resonance energy transfer (BRET) proximity assays enable detailed investigations of protein:protein interactions. BRET is easily detected with Synergy Neo2.

Protein aggregation



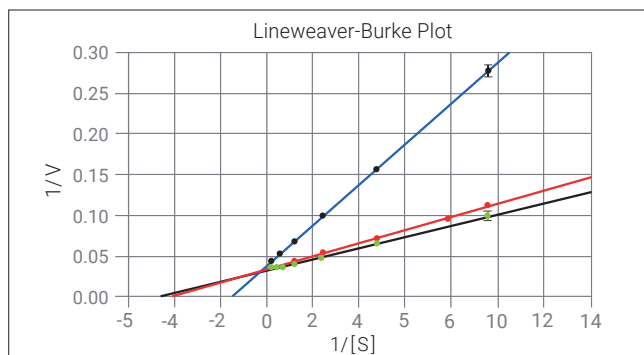
Synergy Neo2 has a robust shaking mechanism needed to quantify protein aggregation and amyloid formation via kinetic fluorescent measurements of Thioflavin T.

Cell-based assays



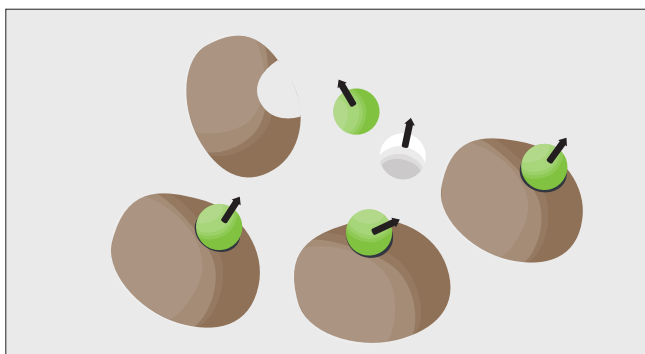
Cell-based assays assess critical characteristics such as viability, toxicity, proliferation, and cell death.

Enzyme kinetics



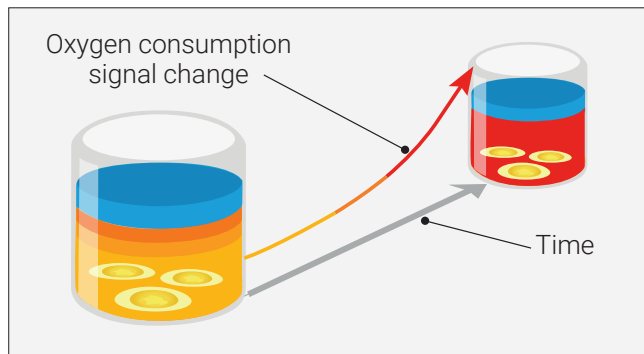
Enzyme reaction rates can easily be measured with Synergy Neo2. Agilent BioTek Gen5 microplate reader and imager software has built-in protocols for measuring Michaelis-Menten kinetics.

Fluorescence polarization



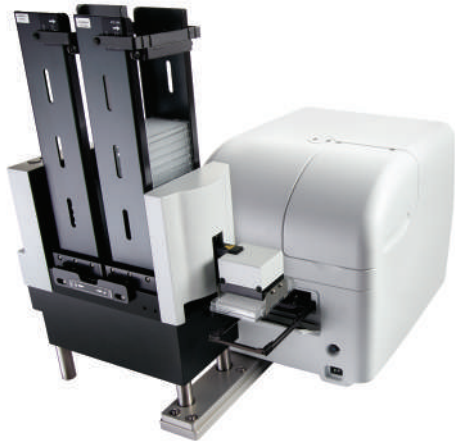
FP is widely used in research labs to study molecular binding or dissociation events and in screening labs to screen for drug candidates.

Metabolic activity



Use Agilent MitoXpress and pH-Xtra kits to measure real-time metabolic markers such as Oxygen Consumption Rates (OCR) and Extracellular Acidification Rates (ECAR).

Peripherals



Agilent BioTek BioStack microplate stacker

The BioStack Neo manages ultra-fast plate transfer to and from Synergy Neo2, enabling walk-away, efficient automated processing of up to 50 plates at a time.



CO₂/O₂ controller

The compact gas controller maintains control of CO₂ and O₂ levels in the Synergy Neo2 to support live cell assays.

Dual reagent injector

The dual reagent injector module enables fast inject/read processes. Angled injector tips protect cell monolayers from shear stress during injection.



Take3 microvolume plate

Measure multiple 2 μ L samples at a time with the Take3 microvolume plate, used with Synergy Neo2. Microvolume nucleic acid and protein quantification made fast and easy.



Agilent BioTek BioSpa 8 automated incubator

The environmental controls and labware handling capabilities of the BioSpa 8 automated incubator, integrated with Synergy Neo2, facilitate assays from ELISA to long-term live cell kinetic processes for up to eight microplates.

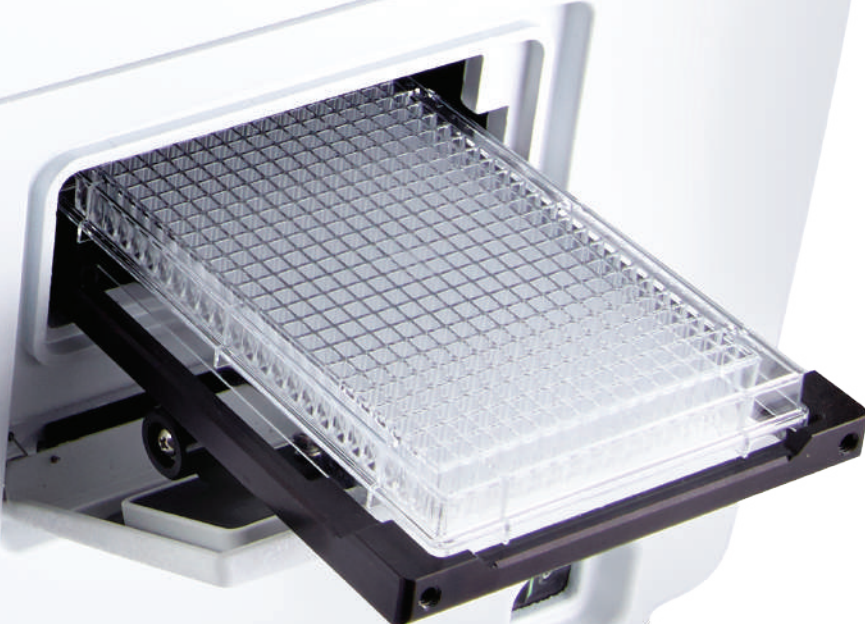


Agilent BenchCel microplate handler

Synergy Neo2 can be integrated with BenchCel and a liquid handler to fully automate batch processes, including ELISA. The compact footprint works well on the benchtop, and several stack sizes provide the required throughput.



BioTek
Synergy Neo2



Technical Details



General	
Detection modes	UV-Vis absorbance Fluorescence intensity Luminescence Fluorescence polarization Time-resolved fluorescence Alpha
Light sources	Three xenon flash lamps: for UV-Vis absorbance, fluorescence intensity, fluorescence polarization, time-resolved fluorescence 337 nm laser for time resolved fluorescence 680 nm laser for Alpha detection
Detectors	Four PMTs Silicon photodiode (absorbance)
Read methods	Endpoint, kinetic, spectral scanning, well area scanning
Microplate types	6- to 1536-well plates
Read path	Top reading and bottom measurements with monochromator and filter-based optics: fluorescence intensity, fluorescence polarization, time-resolved fluorescence and luminescence Top only: absorbance and Alpha measurements
Other labware supported	Take3 microvolume plates Petri and cell culture dishes
Environmental controls	4-Zone incubation to 70 °C with Condensation Control CO ₂ /O ₂ controller
Reagent injector	Two syringe pump injector module
Shaking	Linear, orbital, double orbital
Barcode reader	1D and 2D camera-based scanner
Automation	BioTek BioStack and third-party automation compatible BioTek BioSpa 8 automated incubator compatible Agilent BenchCel microplate handler
Modularity and configurability	Synergy Neo2 has many available configurations. Detection modules and peripherals can be added as laboratory needs change

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