Agilent

Trusted Answers

Agilent BioTek Synergy Neo2 Hybrid Multimode Reader

Speed and ultra-high performance

Agilent BioTek Synergy Neo2 Hybrid Multimode Reader

Agilent BioTek Synergy Neo2 shown with CO_2/O_2 gas controller and dual-reagent injector.

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

The Agilent BioTek Gen6 data analysis software offers complete reader control, powerful data analysis, automation, and LIMS integration.

The fastest, highest-performing Agilent BioTek multimode reader

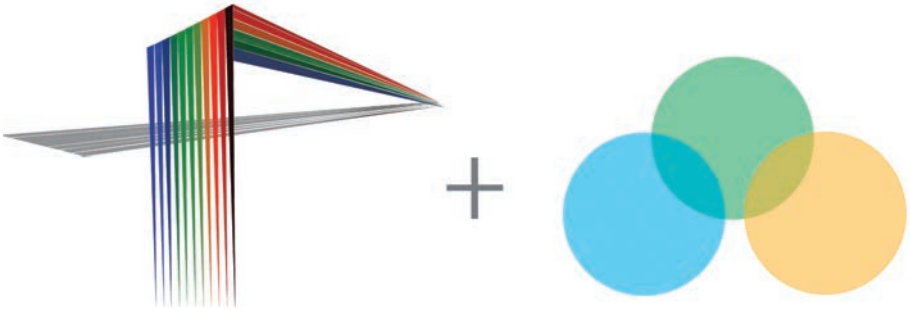
The Synergy Neo2 is the fastest, highest-performing Agilent BioTek multimode microplate reader, ideally suited for a wide range of screening laboratories, including pharmaceutical, biotechnology, and academic screening facilities.

Features include:

- Proprietary Hybrid Technology: independent filter and monochromator optics
- Ultrafast plate processing speeds with multiple detectors for simultaneous dual-emission detection
- TRF and Alpha lasers for better signal/noise, Z', and fast reading speeds
- Variable-bandwidth monochromators for optimal sensitivity and flexibility
- Live cell assay environment: incubation to 70 °C and CO_2/O_2 control
- Fast plate stacker for increased throughput
- Gen6 software provides control, powerful analysis, easy-to-use laboratory information management system (LIMS), and easy automation integration

"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**

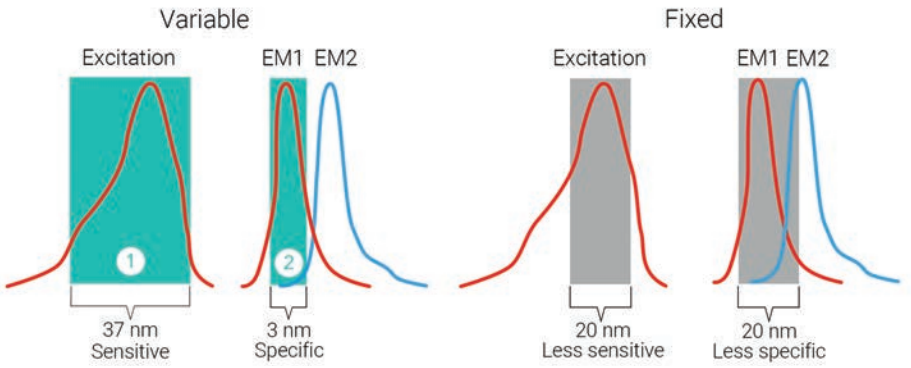


Monochromators Filters

Hybrid plate reader—flexibility and performance

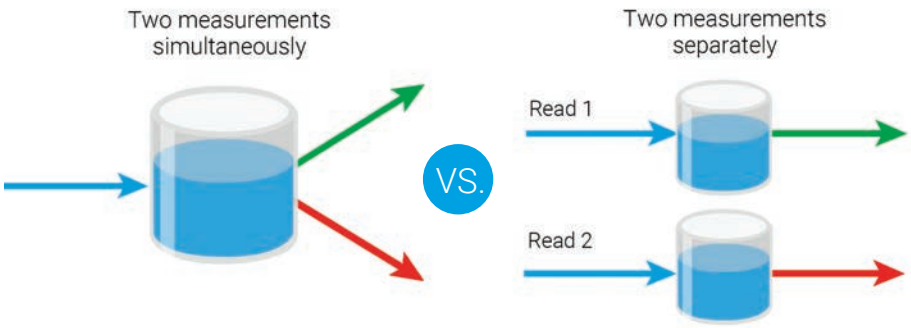
With its proprietary combination of monochromator and filter optics, Synergy Neo2 is an advanced plate reader that delivers both the flexibility and performance you need for any microplate assay in your lab.

Monochromator: Variable bandwidth, absorbance, fluorescence, and luminescence.
Filters: Fluorescence polarization, time-resolved fluorescence, Alpha, and filtered luminescence.



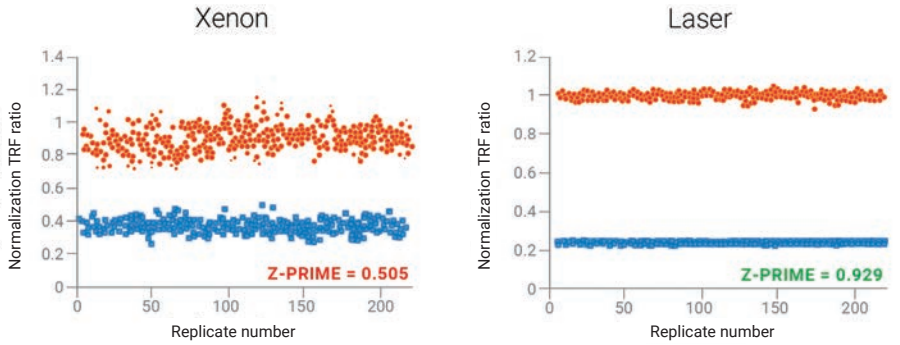
Variable bandwidth for sensitivity and specificity

The Synergy Neo2 optics use a quad monochromator design, with variable-bandwidth settings between 3 and 50 nm, in 1 nm increments. Large-bandwidth settings **(1)** provide increased sensitivity and lower limits of detection. Small bandwidths **(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 time-resolved fluorescence and Alpha

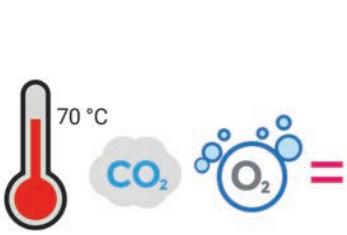
Alpha and time-resolved fluorescence (TRF) assays benefit from the increased sensitivity and fast reading speeds enabled by a laser-based system.

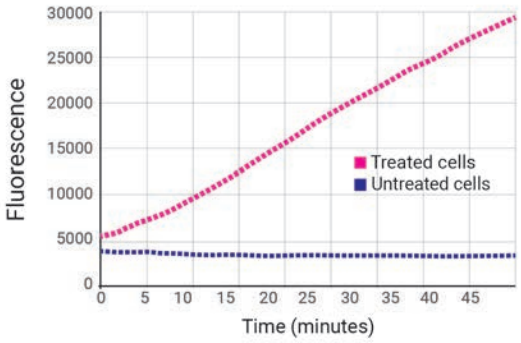
Compounded time savings with the BioStack Neo

Where automation is required, Agilent BioTek 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.

Synergy Neo2 hybrid multimode reader

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

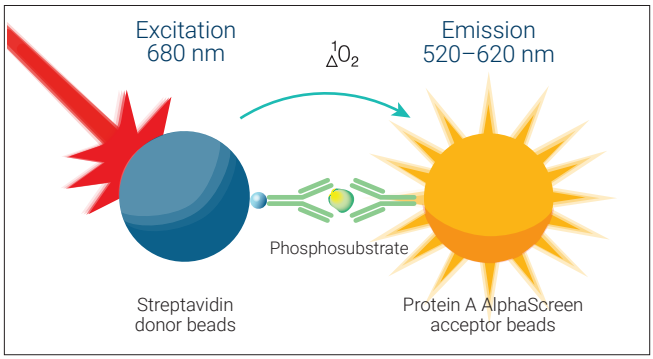
Temperature control to 70 °C, CO_2/O_2 control, and shaking create the ideal environment for live cell assay workflows. A consistent environment leads to consistent data for long-term kinetic assays.

Microvolume analysis the Take3 microvolume plate

Enable microvolume analysis with the Synergy Neo2, using the Take 3 or Take3 Trio microvolume plates. Measure up to 16 or 48 samples in one run and save a lot of time, compared to single-sample devices. The available Agilent BioTek Take3 app is preprogrammed for ssDNA, dsDNA, RNA, and protein quantification in 2 µL samples.

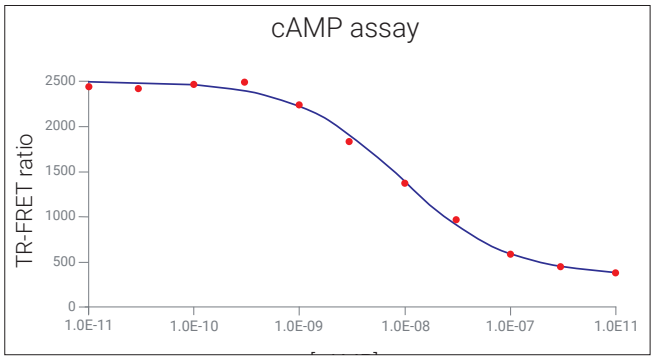
Applications

Alpha assays



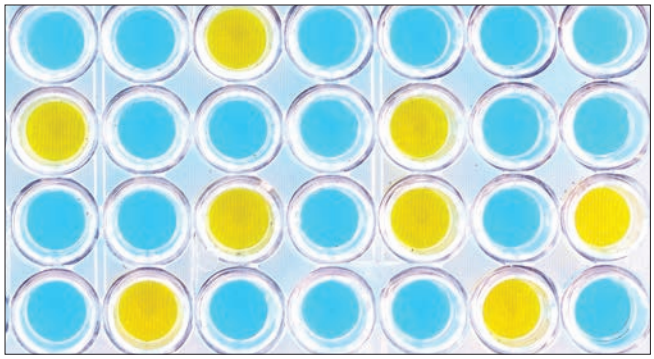
The laser light source in Synergy Neo2 provides high energy for excellent sensitivity for Alpha proximity assays.

Time-resolved fluorescence energy transfer



Time-resolved fluorescence energy transfer (TR-FRET) and homogeneous time-resolved fluorescence (HTRF) are sensitive, robust methods. Synergy Neo2 and Gen6 provide excellent sensitivity for optimal Z-factors.

ELISA



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

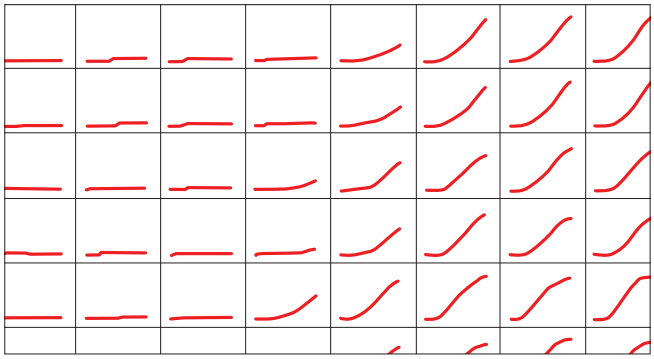
Luciferase reporter assays

Luciferase-based reporter assays measure luminescent signal. This enables users to quantify the activity of factors that affect particular signaling pathways.

Nucleic acid and protein quantification

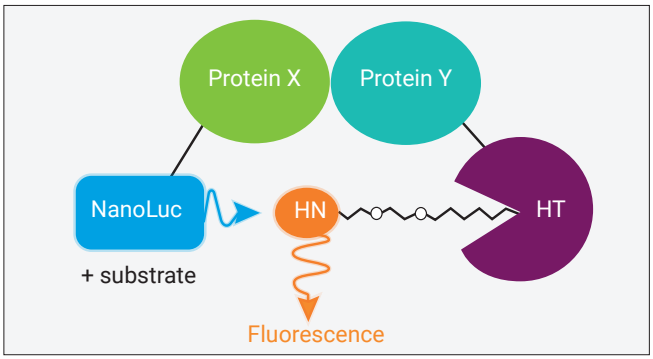
Nucleic acid and protein quantification assays can be executed by spectrophotometric or fluorescent determination with Synergy Neo2.

Microbial growth assays



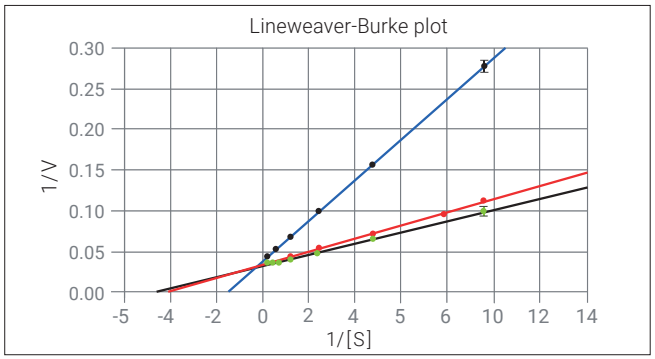
Microbial growth assays, including yeast and bacteria, can be measured by several methods, including turbidimetric measurements with Synergy Neo2.

Bioluminescence resonance energy transfer



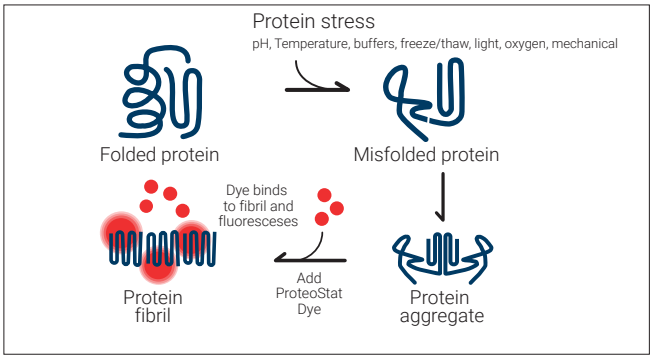
Bioluminescence resonance energy transfer (BRET) proximity assays enable detailed investigations of protein—protein interactions. BRET is easily detected with Synergy Neo2.

Enzyme kinetics



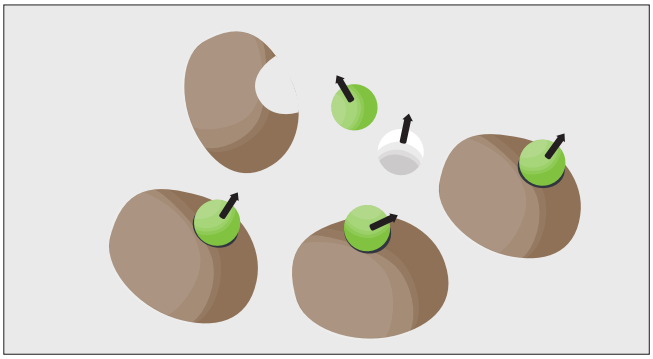
Enzyme reaction rates can easily be measured with Synergy Neo2. Gen6 data analysis software has built-in protocols for kinetic reactions.

Protein aggregation



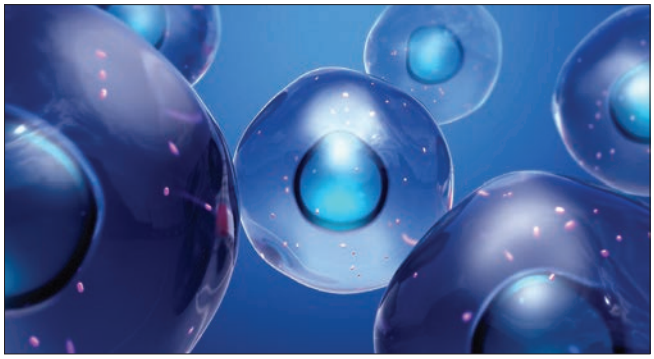
Synergy Neo2 has a robust shaking mechanism needed to quantify protein aggregation and amyloid formation via kinetic fluorescent measurements of thioflavin T.

Fluorescence polarization



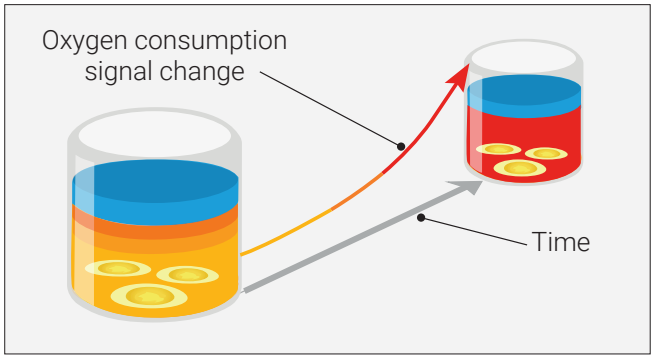
Fluorescence polarization is widely used in research labs to study molecular binding or dissociation events, and in screening labs to screen for drug candidates.

Cell-based assays



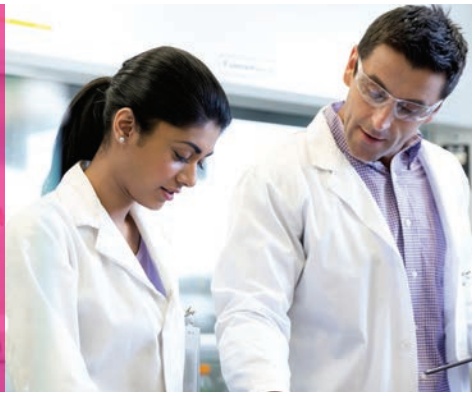
Cell-based assays assess critical characteristics such as viability, toxicity, proliferation, and cell death.

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



BioStack microplate stacker

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

CO_2/O_2 controller

The compact gas controller maintains control of CO_2 and O_2 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 µL samples at a time with the Take3 microvolume plate, used with Synergy Neo2. Microvolume nucleic acid and protein quantification made fast and easy.

BioSpa 8 automated incubator

The Agilent BioTek BioSpa 8 environmental controls and labware handling capabilities facilitate long-term live cell kinetic imaging processes for up to eight microplates and other labware.

BenchCel microplate handler

Synergy Neo2 can be integrated with Agilent 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.


Agilent
BioTek
Synergy Neo2

Agilent 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, and time-resolved fluorescence 337 nm laser for time-resolved fluorescence 680 nm laser for Alpha detection
Detectors	Four PMTs Silicon photodiode (absorbance)
Read Methods	End point, 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	1 and 2D camera-based scanner
Automation	BioStack and third-party automation compatible BioSpa 8 automated incubator compatible BenchCel microplate handler
Software	Gen6 data analysis software Gen5 Secure enables 21 CFR Part 11 compliance (option)
Modularity and Configurability	Synergy Neo2 has many available configurations; detection modules and peripherals can be added as laboratory needs change

Learn more and buy online:
www.agilent.com/lifesciences/biotek

Get answers to your technical questions and access resources in the Agilent Community:
community.agilent.com

U.S. and Canada
1-800-227-9770
agilent_inquiries@agilent.com

Europe
info_agilent@agilent.com

Asia Pacific
inquiry_lsca@agilent.com

DE61083349

This information is subject to change without notice.

© Agilent Technologies, Inc. 2021, 2023
Published in the USA, May 17, 2023
5994-2418EN

Agilent
Trusted Answers