HUMAN HEALTH

ENVIRONMENTAL HEALTH

HIGH-PERFORMANCE MULTIMODE DETECTION TO DRIVE YOUR RESEARCH

EnSpire® Multimode Plate Reader

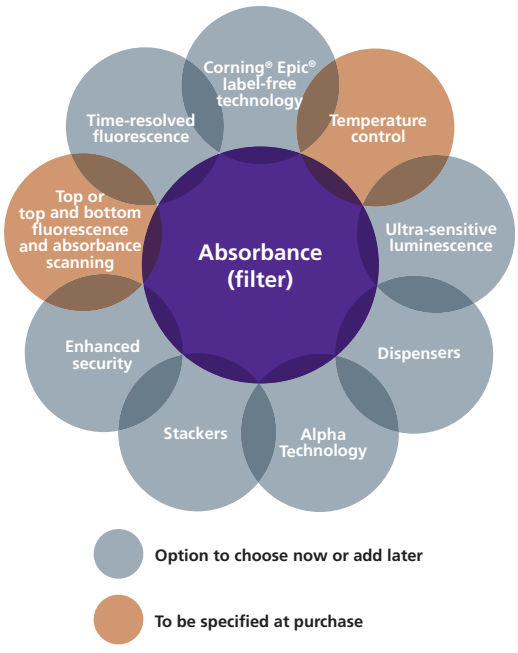
PerkinElmer®
For the Better

EnSpire Multimode Plate Reader

IT ALL STARTS WITH EXCEPTIONAL TECHNOLOGY

PerkinElmer opens up a world of new opportunity and sets a new standard in multimode detection. With the addition of Corning® Epic® label-free technology to the EnSpire benchtop multimode platform, and features such as touchscreen and pre-coded protocols, this system is both versatile and easy to use in the research lab. Select the combination of technologies that matches your research needs – both now and in the future. And because it all starts with exceptional technology, you can be sure that whatever modes you choose, you will be getting premium performance.

Any technology, any modality, any application. The choice is yours.



YOUR RESEARCH APPLICATION? YOUR CHOICE

EnSpire is the flexible platform for today's high-demand, multi-user research environment. For the first time, you can choose Corning® Epic® label-free technology and a wide range of other industry-leading technologies for a truly versatile detection system – all in a high-performance, easy-to-use research reader.

- **Optical label-free technology:** EnSpire delivers established Corning® Epic® label-free technology in addition to labeled technologies on one flexible research reader. It's ideal for non-invasive cellular receptor and signaling assays, as well as biochemical binding assays such as protein:protein and protein:small molecule interaction assays.
- **Alpha-certified technology:** Only PerkinElmer offers the Alpha expertise and knowledge to deliver the best performance for AlphaLISA®/AlphaScreen® detection. Alpha Technology is a no-wash, homogeneous format, ideal for cellular and protein:protein interaction assays.
- **Ultra-sensitive luminescence:** When working with primary, stem or difficult-to-transfect cells, you have to deal with limited cell access, cost issues and other challenges. EnSpire's ultra-sensitive luminescence option requires fewer cells and delivers higher performance than standard luminescence.
- **Quad-monochromator for fluorescence and absorbance:** With the ability to choose any wavelength and perform wavelength scans, you can get the best possible signal to background for fluorescence applications. Perform GFP and other bottom read cell-based applications.
- **Time-resolved fluorescence:** TRF offers high sensitivity for biological and cellular assays, even when sample is at a premium, or in low concentration.

EnSpire Multimode Plate Reader
Basic System
Absorbance (filter)
Plate barcode readers
Plate shaking
Integrated computer
Touchscreen
Software with data analysis
Pre-programmed protocols
Optional Technologies and Accessories
Corning® Epic® label-free technology
Alpha Technology
Ultra-sensitive luminescence
Time-resolved fluorescence
Absorbance/fluorescence quad-monochromator
Temperature control up to 65° C
Fluorescence bottom read
Dispensers
Stackers (20 or 50)
Enhanced security (21 CFR part 11 support)

LABEL-FREE TECHNOLOGY AN EPIC ADVANCE IN MULTIMODE DETECTION

The EnSpire cellular and biochemical label-free platform combines the acclaimed performance of Corning® Epic® technology with label-free patented biosensor microplates. Together with labeled technologies, this provides the orthogonal approach you need to improve lead optimization and cell signaling research, and arrive at better decisions sooner.

Cellular assays

Label-free technology offers rich, physiologically relevant information with superior sensitivity from both recombinantly and endogenously expressed targets. The integrated cellular response obtained from a label-free assay enables characterization of the signaling pathways involved, which can be affected by biased agonism, dimerization and allosterism.

Typical cellular label-free assays include:

- GPCRs and orphan receptor screening
- Pathway identification and validation
- Receptor panning
- Receptor tyrosine kinases
- Ion channels

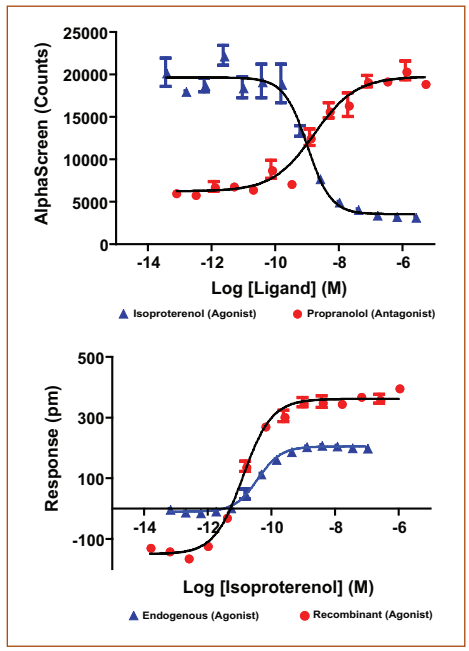
Biochemical assays

Perform highly sensitive, label-free biochemical binding assays with confidence, including difficult targets or weak biological interactions.

Typical biochemical label-free assays include:

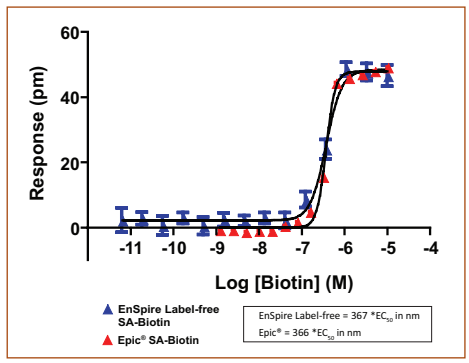
- Protein:small molecule binding interactions (proven down to 150 Daltons)
- Binding strength (K_D) assays to complement SPR "on/off" rates
- Detection of direct biomolecular interactions
- Proteases
- Protein-oligo (DNA/RNA) interactions

An Orthogonal Approach: Alpha and Label-free Experiments Confirm Pharmacology



Top: Pharmacology seen using Alpha assay of endogenously expressed B2 target in A431 cells. Bottom: Pharmacology confirmed using label-free in both endogenously(A431) and recombinantly(CHO-K1) expressed B2.

EnSpire vs. Corning® Epic® System (Protein:Protein Interaction Assay)



Excellent comparability of the two label-free platforms is demonstrated in this streptavidin-biotin dose response curve.

Applications

- GPCRs
- Receptor tyrosine kinases
- Ion channels
- Protein:protein interactions
- Protein:small molecule interactions
- Binding strength K_D

ALPHA ASSAY: VERSATILITY FOR SIMPLE OR COMPLEX SAMPLES

When you need an efficient, highly adaptable assay to study a variety of targets, there's only one solution: Alpha Technology. Offered exclusively by PerkinElmer, this incredibly versatile platform gives you the power to assay even the most complex samples, in many important therapeutic areas.

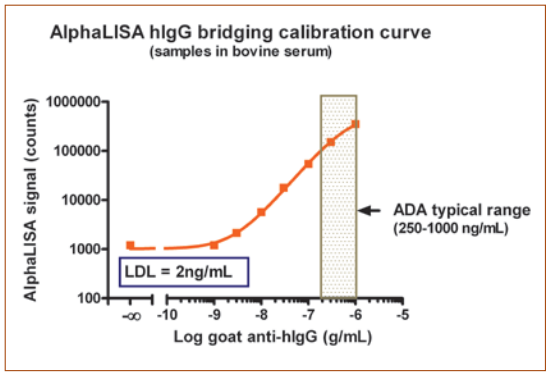
Alpha Technology is a homogeneous, bead-based platform that detects virtually any molecule from large endogenous protein complexes to very small peptides. And it works with a variety of sample types – all in one well and with no wash steps.

EnSpire is an Alpha-certified instrument, enabling you to explore a broader range of therapeutic areas faster and more easily.

The benefits you need today

- Top-of-the-range HTS AlphaScreen – allows fast reading time for busy, multi-user environments
- Simple ELISA conversion – combines photometric ELISA assays and high-performance Alpha Technology in the same instrument
- Flexible – measure virtually any protein interaction and complex as large as 200 nm in size; choose custom or off-the-shelf solutions
- Improve workflow – no-wash homogeneous assay with wider dynamic range (up to 5 logs) and a simple protocol offers an alternative to conventional ELISA
- Versatile – ideal for simple or difficult matrix, serum or plasma, enzymes, receptor-ligand interactions, low-affinity interactions, second messenger levels, DNA, RNA, sugars and small molecules
- Cost-effective – use small amounts of sample and reagents

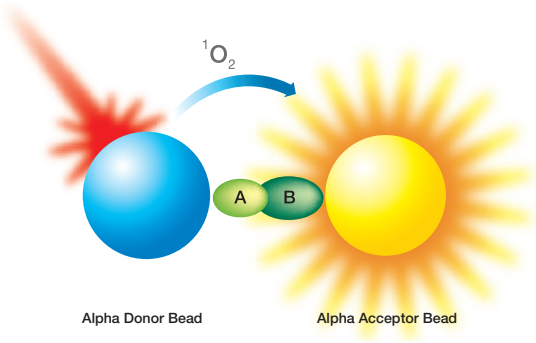
AlphaLISA Offers a Sensitive and Simple Alternative for Immunogenicity Bridging Assays



The US Food and Drug Administration currently recommends that screening assays achieve a sensitivity of approximately 250-500 ng/mL. This concentration corresponds to the high end of the AlphaLISA calibration curve.

Applications

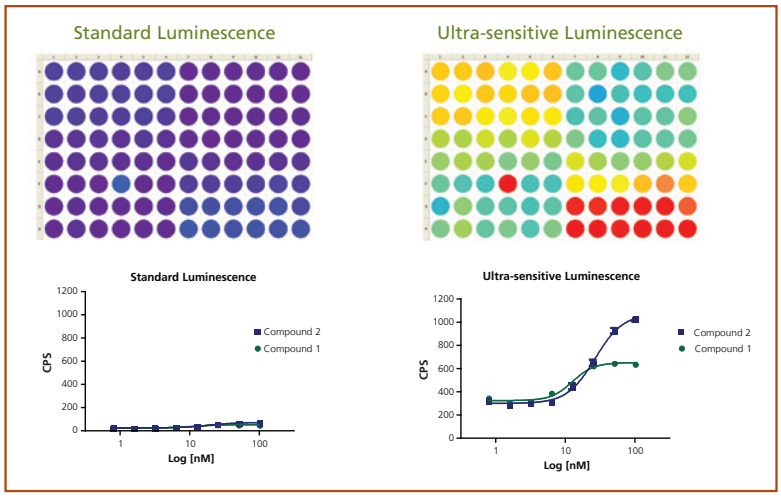
- Biologics
- Biomarkers
- Epigenetics
- Kinases
- Protein:protein interactions
- GPCRs



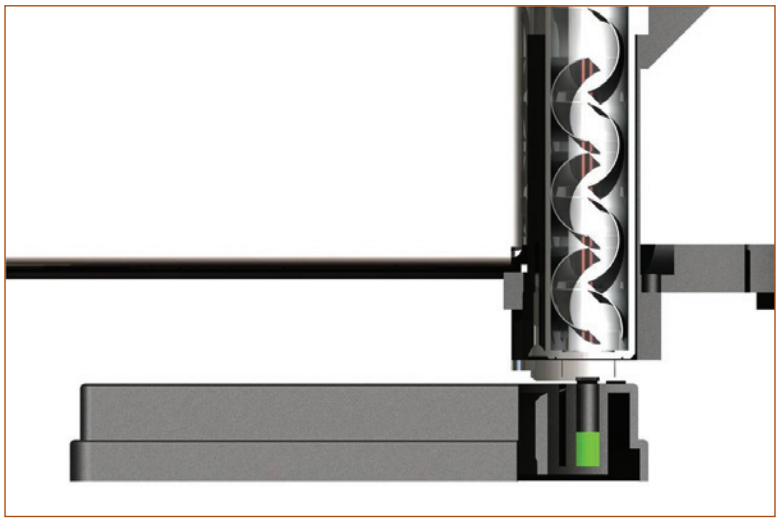
AlphaLISA is preferable to ELISA for a wide range of applications and is easy to automate and miniaturize.

ULTRA-SENSITIVE LUMINESCENCE:
ACHIEVE BIG THINGS
WITH YOUR SMALLEST SAMPLES

When every cell is precious, EnSpire's ultra-sensitive luminescence technology helps you get the best information out of them all. This is one of the most sensitive luminescence readers on the market, delivering nearly 40 times better sensitivity than systems with standard luminescence capability.



Two compounds measured by the EnSpire Multimode Plate Reader with standard luminescence vs. ultra-sensitive luminescence.



A separate PMT is used for luminescence. Its close proximity to the sample well delivers significantly higher sensitivity.

Advantages that take you further

- Significantly increase sensitivity and dynamic range
- Detect luminescent reporter genes with low expression levels or low cell numbers
- Use fewer precious primary cells
- Reduce the cost of reagents and substrates by up to 75%
- Achieve outstanding crosstalk performance
- Decrease reading time from 1 to only 0.1 seconds per well
- Combine with PerkinElmer Lites luminescence reagents for a complete solution

See what you can't see with standard luminescence detection

The quantification of cellular growth, including techniques such as proliferation and viability, has become critical to researchers conducting cell-based studies. Discerning cell viability and selecting the best cytotoxicity assay can be a challenging task. Selecting an appropriate assay format requires an understanding of what each assay is measuring as an endpoint, and how each measurement correlates to cell viability or cytotoxicity, as well as the available instrumentation to support the desired outcome. The increased sensitivity of ultra-sensitive luminescence enables a better evaluation of the inhibitors in this application.

Applications

- Reporter genes
- Cell proliferation
- Cell toxicity and viability
- Flash luminescence including Aequorin calcium assays
- Cellular oxygen with temperature up to 65° C
- Circadian rhythm studies
- Primary cells
- Cellular assays
- Low transfection rates

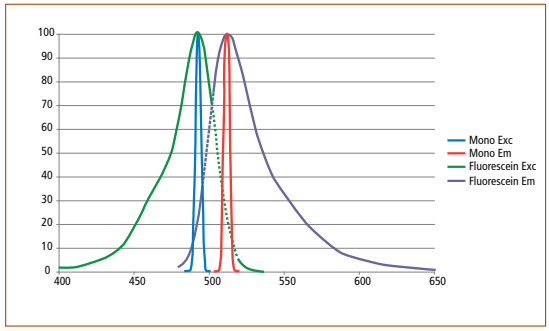
BEST-IN-CLASS QUAD-MONOCHROMATOR FOR YOUR CLASSICAL APPLICATIONS

EnSpire's high-performance quad-monochromator technology is designed to meet the needs of labs with diverse user groups. The simple, intuitive touchscreen shortens assay startup times, even for occasional users. EnSpire also gives you the freedom to run endpoint assays with one or two wavelengths or scan the entire wavelength range, and is easily integrated into liquid handling automated workstations.

Many features, many opportunities

- Monochromator-based wavelength selection
- Fluorescence intensity detection capability
- Photometric UV/VIS technology
- ELISA reference wavelength correction
- Easy to use with touchscreen and pre-coded assay protocols
- Compatible with plate formats up to 384-well, including a wide range of PerkinElmer application-specific microplates and plates for low sample volumes such as the IMAPlate™

Quad-monochromators Give Increased Signal to Background in Narrow Stokes' Shift Assays

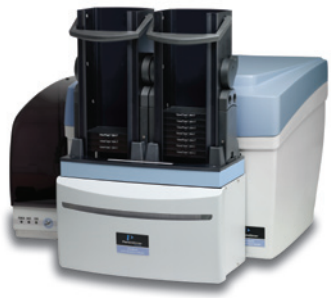


The bandpass cut-off properties of our quad-monochromator reduce the overlap area between Exc and Em, vastly reducing noise in narrow Stokes' shift assays.

Applications

- GFPs
- ELISA
- Protein quantitation
- DNA/RNA quantitation
- FRET
- Gene expression
- Cell counting
- Colorimetric assays
- Automation

For increased throughput or walkaway convenience, the JANUS® Mini Automated Workstation can be integrated with the EnSpire workflow.



Options include a 2-channel dispenser with stirred/heated reagents reservoir for flash luminescence, calcium and other kinetic assays, and 20- or 50-plate stacker with restacking function for slow kinetic assays. Magazines are compatible with PlateStak™ automated microplate handler.

For scientific breakthroughs. For a better tomorrow.

At PerkinElmer, we share your commitment to finding answers to the mysteries of human health. With proven expertise in reagents, assays, cellular imaging, detection systems and automated liquid handling, we offer the right combination of technologies and service, enabling scientists around the world to rapidly discover new therapies.

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