

Discover the possibilities.



revvity



Detection technologies for your scientific breakthroughs

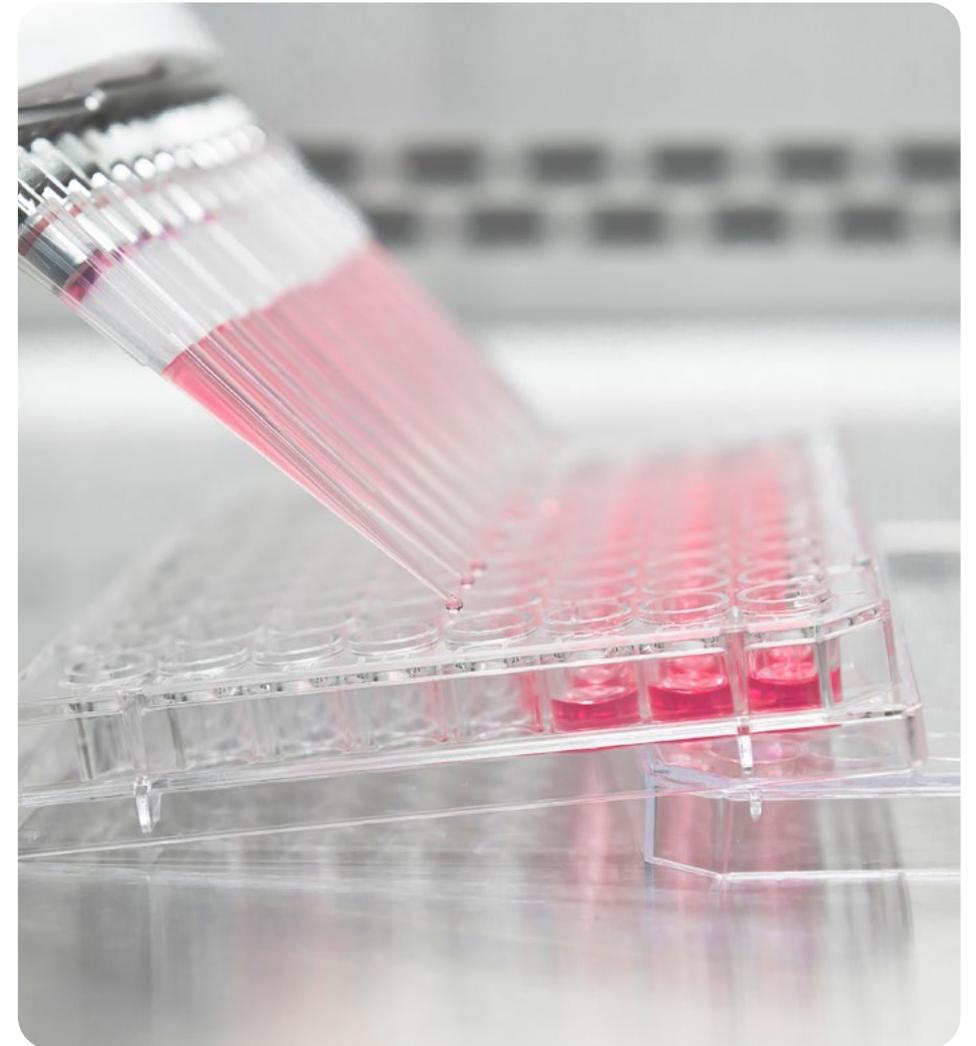


Set your lab up for success

Revvity's portfolio of multimode plate readers provides the latest detection technologies to meet the diverse assay requirements of today's labs. What's more, they are configurable, so you can add instrument options whenever you need them.

When combined with a wide range of assay technologies from Revvity, our solution can provide the optimal platform for your requirements.

This guide helps you determine which detection technologies, reagents, and microplates you need to achieve superior results.





Our line of high-performance plate readers

Here's how it works: we come to you with over 30 years of plate reader instrument development experience. You can count on our plate readers to bring you the performance, reliability, consistent results, and the best user experience available—across a multitude of applications and a range of detection options.



VICTOR Nivo™ multimode plate reader

Packs all popular detection modes into the industry's smallest multimode reader footprint. The perfect microplate reader for everyday biochemical and cell-based assays measures at any wavelength. Its software interface is easy to learn and use and lets you control the instrument from almost any device - perfect for multiuser environments.



EnVision™ XCite multimode plate reader

Offers a combination of filter based and monochromator based detection. It provides the flexibility required for busy multiuser labs - increasing productivity and elevating confidence in your scientific results.



EnVision Nexus™ multimode plate reader

Provides lightning speed and superior sensitivity across all detection technologies. It is the new standard in high-throughput screening on a brand-new innovative platform for your most demanding applications.



Innovation that meets your needs today – while powering up for the future

Our configurable multimode plate readers offer you the flexibility to meet your assay requirements today and add more detection technologies in the future.

| | Absorbance | Fluorescence Intensity | Luminescence | Ultrasensitive Luminescence | TRF and TR-FRET | Fluorescence Polarization | Alpha (Laser-Based) | AlphaPlex (Laser-Based) | Dual PMT Detector |
|--|--------------------------------|--------------------------------|-----------------------------|-----------------------------|--------------------------------------|---------------------------|---------------------------------|-------------------------|-------------------|
|  VICTOR Nivo | Filter or spectrometer | Filter | Including BRET/BRET2 assays | | Lamp based, HTRF™ Certified | ✓ | Alpha Standard | | |
|  EnVision XCite | Filter and quad monochromators | Filter and quad monochromators | Including BRET/BRET2 assays | ✓ | Lamp or laser based, HTRF™ Certified | ✓ | Standard or HTS Alpha | ✓ | |
|  EnVision Nexus | Filter | Filter | Including BRET/BRET2 assays | ✓ | Lamp or laser based, HTRF™ Certified | ✓ | Enhanced Alpha and/or HTS Alpha | ✓ | ✓ |

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Not for use in diagnostic procedures.



Get the assay technology that's right for your lab

There are many assay options available for your research. Traditional technology such as ELISA is widely used, but you may find it has limitations. Therefore, we invite you to consider other technologies such as DELFIA™, LANCE™, HTRF™, or Alpha since they offer ease of use, scalability, or the absence of washing* - all without compromising sensitivity and specificity.

Our assay platforms offer:

- Wide dynamic range
- Increased sensitivity
- Reduced background
- Large stokes shift
- Extended signal stability
- Faster time to results

Choose the right assay:

| | ELISA | | | |
|-------------------------|--------------------------|---|--|--|
| Plate Format | 96-wells | 96 to 384-wells | 96 to 1536-wells | 96 to 1536-wells |
| Miniaturization | Limited | Limited | Yes | Yes |
| Time to Results | 4-24 hrs | 4-6 hrs | 1-2 hrs | 1-2 hrs |
| | | | Significant time saving reallocated back to science | |
| Wash Steps | Yes | Yes | No | No |
| Dynamic Range | 2 Log | 5 Log | 4 Log | 5 Log |
| | | Large dynamic ranges are beneficial to avoid making dilutions during sample prep. They can be cumbersome and lead to analytical imprecision/variability | | |
| Sensitivity | 10 pg/mL | 10 pg/mL | 10 pg/mL | 1 pg/mL |
| Avidity | No | No | Only with streptavidin | Yes |
| | | | Sought after characteristic for PPIs with low affinities | |
| Signal Stability | Up to 1 hr | Days - Years | 24 hrs to days | Up to 24 hrs |
| | | Allows for the plates to be left on the bench and read at a more convenient time. | | |
| Multiplexing | No | Yes (up to 3) | No | Yes (up to 3) |
| Chemistry | Enzyme-linked, HRP or AP | Fluorophore Chelate | Fluorophore Cryptate | Fluorophore Embedded-beads |
| Analyte Size | No limitation | No limitation | Subject to Förster radius (9 nm) | Subject to oxygen singlet diffusion (200 nm) |

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*Except for DELFIA which requires wash steps.



Eliminate time-consuming separation and wash-steps with **Alpha technology**

Alpha is a bead-based homogeneous assay platform with a simple, streamlined workflow to detect and quantitate biomolecules in both simple and complex sample types. This technology offers several advantages over traditional ELISAs – larger dynamic range, improved sensitivity, and higher signal-to-noise ratios.

- Applications:**
- Biomarker Detection
 - Protein Kinase
 - Cytokine
 - GPCR Research
 - Epigenetics
 - Protein-Protein Interactions

- Disease research:**
- Cardiovascular
 - Oncology
 - Immuno-oncology
 - Metabolic
 - Neuroscience
 - Virology

How AlphaLISA technology works:





Choose from a variety of Alpha solutions

AlphaLISA™

Use when running large numbers of ELISA assays from the same sample or working with a difficult matrix, such as a serum, or plasma

AlphaLISA™ SureFire™ Ultra™

For studying pathways or phosphorylated proteins in whole cells, or endogenous receptors

AlphaLISA™ SureFire™ Ultra™ Multiplex

For use when measuring both phosphorylated and total proteins in the same sample

AlphaScreen™

Perfect for studying fusion-tagged proteins or protein-protein interactions (PPIs)

Alpha Toolbox

Get everything you need to create your own assay when your target doesn't have an off-the-shelf quantitative ELISA assay



No Washing Required



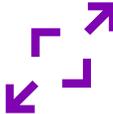
Broad Sample Compatibility



Wide Detectable Range



Small Sample Size



Scalable



Time-Resolved Fluorescence Resonance Energy Transfer (**TR-FRET**) technology

TR-FRET technology combines the benefits of Time Resolved Fluorescence (TRF) with those of Fluorescence Resonance Energy Transfer (FRET) in a simple, highly sensitive, and highly reproducible assay platform for detection, quantitation, and screening.

A simple, no wash strategy to detect and quantify proteins quickly

HTRF (Homogeneous Time Resolved Fluorescence) is a FRET-based technology that exhibits performance levels in stability and specificity, making it unparalleled for time-resolved FRET studies due to the chemical and photophysical characteristics of these fluorescent dyes. HTRF is extremely stable in time, allowing repetitive measurements for days. The very structure of HTRF reagents also makes assays highly resistant to most experimental conditions. It is suitable for a wide variety of applications and disease research.

Applications:

- Biomarker Detection
- Protein Kinase
- Cytokine
- GPCR Research
- Epigenetics
- Protein-Protein Interactions

Disease research:

- Cardiovascular
- Oncology
- Immuno-oncology
- Metabolic
- Neuroscience
- Virology



The simpler way to get work done

How HTRF technology works:



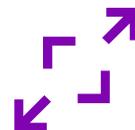
No Washing Required



Easy To Implement



Saves Time

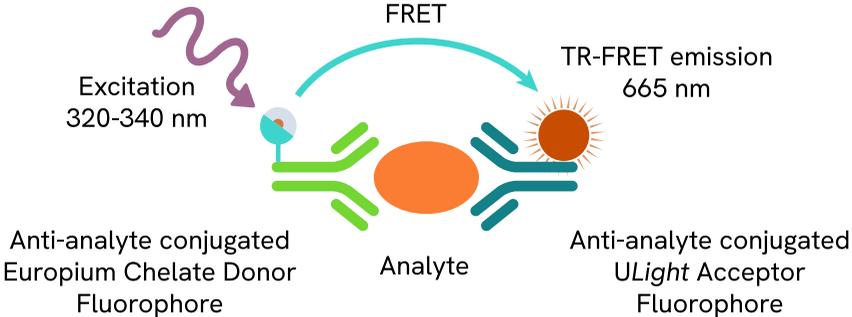


Scalable



TR-FRET technology at its finest

With a multitude of benefits over standard fluorometric detection, LANCE™ (Lanthanide Chelate Excite) TR-FRET technology combines the benefits of Time Resolved Fluorescence (TRF) with those of Fluorescence Resonance Energy Transfer (FRET). It's done in a simple, highly sensitive, and highly reproducible assay platform for detection, quantitation, and screening. These assays save you time and hassle, from biomarker detection assays to cAMP/GPCR studies to kinase and epigenetic assays.



How LANCE TR-FRET advances your science:



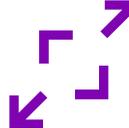
No Washing Required



Saves Time



Wide Detectable Range



Scalable



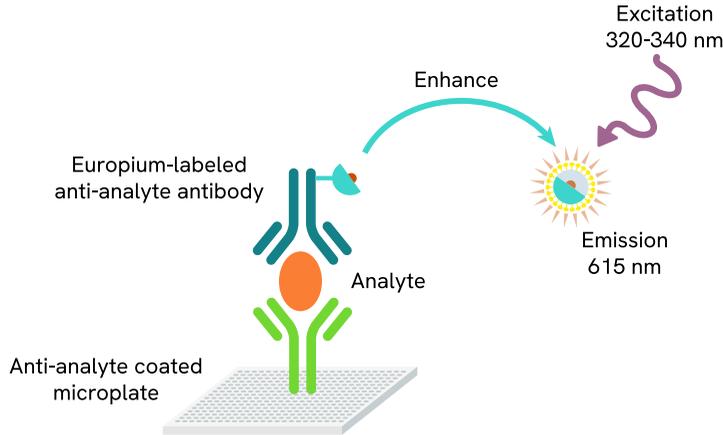
Long Signal Stability



A Time-Resolved Fluorescence (TRF) technology

TRF technology combines the benefits of Time-resolved Fluorescence (TRF) with the use of lanthanide chelates for a highly sensitive, robust, and reproducible assay format. With over 20 years of history and thousands of publications, DELFIA™ (Dissociation-Enhanced Lanthanide Fluorescent Immunoassay) is ideal for simple to complex matrices and can be used for both biochemical and cell-based assays. The use of long-lifetime fluorescent lanthanide chelates, rather than other fluorophores, allows for a delay in measurement between excitation and emissions, which occur simultaneously in standard fluorometric assays.

The EnVision Nexus plate reader offers the TRF laser option for higher speed and sensitivity. The main advantage is the nitrogen laser generates a very narrow excitation pulse, reducing the background and enabling shorter delay times. In addition, with a 10x stronger pulse than Xenon flash, the range of feasible assays expands. Combined, you can get exceptionally fast measurement times - less than 36 seconds for a 1536-well plate.



How DELFIA TRF advances your science:



Wash-Based Assay



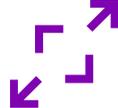
Long Signal Stability



Broad Sample Compatibility



Wide Detectable Range



Scalable

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Luminescence detection platform

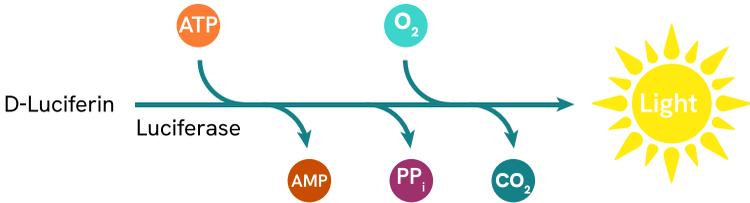
Reporter gene, cytotoxicity, and cell proliferation assays are important tools in drug discovery. Luminescence assays allow for the study of transcriptional gene expression, virus life cycles, and cell viability. Our luciferase-based luminescence assays include reporter gene, ATP-monitoring assays, and kinase activity assays.

Ultrasensitive Luminescence

This optional detection technology boosts sensitivity by almost 25 times versus enhanced luminescence due to the detector being closer to the sample - giving you more information from every cell. With the Ultrasensitive Luminescence option, the time per 384-well plate decreases to less than two minutes - not only freeing up the instrument, but also minimizing drift effects. This option is available for the EnVision Nexus plate reader.

Benefits include:

- Ultrasensitivity
- Wider dynamic range
- Superior S/B ratios
- No separation steps
- Faster time to results
- Easy setup for high throughput
- Hassle-free storage



| | britelite™ plus <i>Intensively sensitive</i> | steadylite™ plus <i>Long-lived glow</i> | neolite™ <i>Bright and stable</i> | sensilite™ <i>Ultra sensitive</i> | twinlite™ <i>Dual luciferase assay</i> |
|-----------------------------|--|--|--|---|--|
| Application | Firefly Luciferase Reporter Gene Assays | | | | Firefly and Renilla Luciferase Reporter Gene Assays |
| Half-life | 0.5 hours | 4-5 hours | 2.5 hours | Flash | Flash |
| Relative Sensitivity | High | Moderate | Moderate | Very High | Very High |
| Microplate Formats | 96, 384, 1536 wells | 96, 384, 1536 wells | 96, 384, 1536 wells | 96, 384 wells | 96, 384 wells |
| Ideal For | Low transfection efficiencies, stem cell transfection, continuous processing | High-throughput screening, extended batch processing | Low transfection efficiencies, primary cell transfection, batch processing | Low transfection efficiency, stem cell transfection | Normalization for high quality data, screen two events in parallel |

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Fluorescence and absorbance technologies for detection



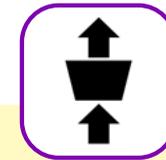
Detection Mode: Fluorescence Intensity

One of the most popular detection modes, fluorescence intensity is the measurement of light emitted from a molecule (fluorophore) at one wavelength where the molecule was previously excited with light at a shorter wavelength. There are innumerable fluorophores available for applications such as DNA or protein quantitation, reporter-gene expression, and protein binding.



Detection Mode: Fluorescence Polarization

Fluorescence polarization is a homogeneous assay technology that's ideal for high-throughput screening. It's often applied to measure binding events between small and large molecules. Similar to fluorescence intensity, fluorescence polarization is based on the emission of light by an excited fluorophore. For this detection, samples are excited by polarized light using specific filters. Fluorescein is the commonly used fluorescent label and is suitable for typical applications such as receptor-ligand binding, protein interaction, or hapten immunoassays.



Detection Mode: Absorbance

Absorbance is the measurement of the amount of light being absorbed by a sample. A specific wavelength of light is usually selected from an optical filter or the whole spectrum can be captured using a spectrometer. It's one of the most well-established microplate assay formats and perfect for assays such as ELISA, protein and nucleic acid quantification, and enzyme activity.



Engineered to deliver the highest quality data

Choosing the right microplate is a critical, often overlooked, part of an assay. The right microplate helps provide valuable data, whereas the wrong microplate can lead to missing or inaccurate data, late projects, and higher costs.

To ensure that your microplates are maximizing your success, we can use your coating process, modify existing formulations, or develop a unique process tailored to you. High-quality barcode labels are also available.

| Application | 1/2 Area Plate | Alpha Plate* | Cell Carrier Ultra | CulturPlate | DELFI A | Hardshell PCR | IsoPlate | OptiPlate | ProxiPlate | Spectra Plate | StorPlate | ViewPlate | VisiPlate |
|---------------------------------|----------------|--------------|--------------------|-------------|---------|---------------|----------|-----------|------------|---------------|-----------|-----------|-----------|
| Storage | | | | | | | | | | | ✓ | | |
| Imaging | | | ✓ | | | | | | | | | ✓ | |
| Fluorescence Assays | ✓ | | | ✓ | ✓ | | ✓ | ✓ | ✓ | | | ✓ | ✓ |
| Luminescence Assays | ✓ | ✓ | | ✓ | | | ✓ | ✓ | ✓ | | | ✓ | ✓ |
| Absorbance/Colorimetrics Assays | ✓ | | | | | | ✓ | | | ✓ | | ✓ | |
| Cell Culture | | | ✓ | ✓ | | | ✓** | | | ✓** | | ✓** | ✓** |
| NGS | | | | | | ✓ | | | | | | | |

* Select plates available in 1/2Area

** Tissue-culture treated only



Custom services that increase your ROI

If you need to create a custom product that fits your specific needs, we've got the know-how to help you. With over 30 years of experience, our team of dedicated experts will partner with you to create a custom product optimized for use with our plate readers plus other cost-efficient custom services.

Assay Development

With a variety of assay technology options, there's an approach for any need.

- Elucidation of your target's biology
- Conversion of any ELISA assays into an efficient Alpha, DELFIA, or HTRF format
- Careful selection and optimization of your lysates

Custom Labeling

Let us guide you and help shorten your project timeline.

- Labeling of multiple types of molecules
- Quick and accurate timelines
- Reliable chemistry optimization with optional challenge ratio labelings prior to scale-up

Compound Profiling

We offer expert profiling and screening services.

- GPCR functional/binding, immune checkpoint assays
- Phosphoprotein detection, cytokine secretion, FcR binding, biochemical enzymatic assays
- Cell proliferation

Custom Microplates

The right microplate can lead you to accurate results, greater efficiencies, and lower costs.

- Cover a vast array of application areas
- Available in different well formats, plastic types, coatings, and colors



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