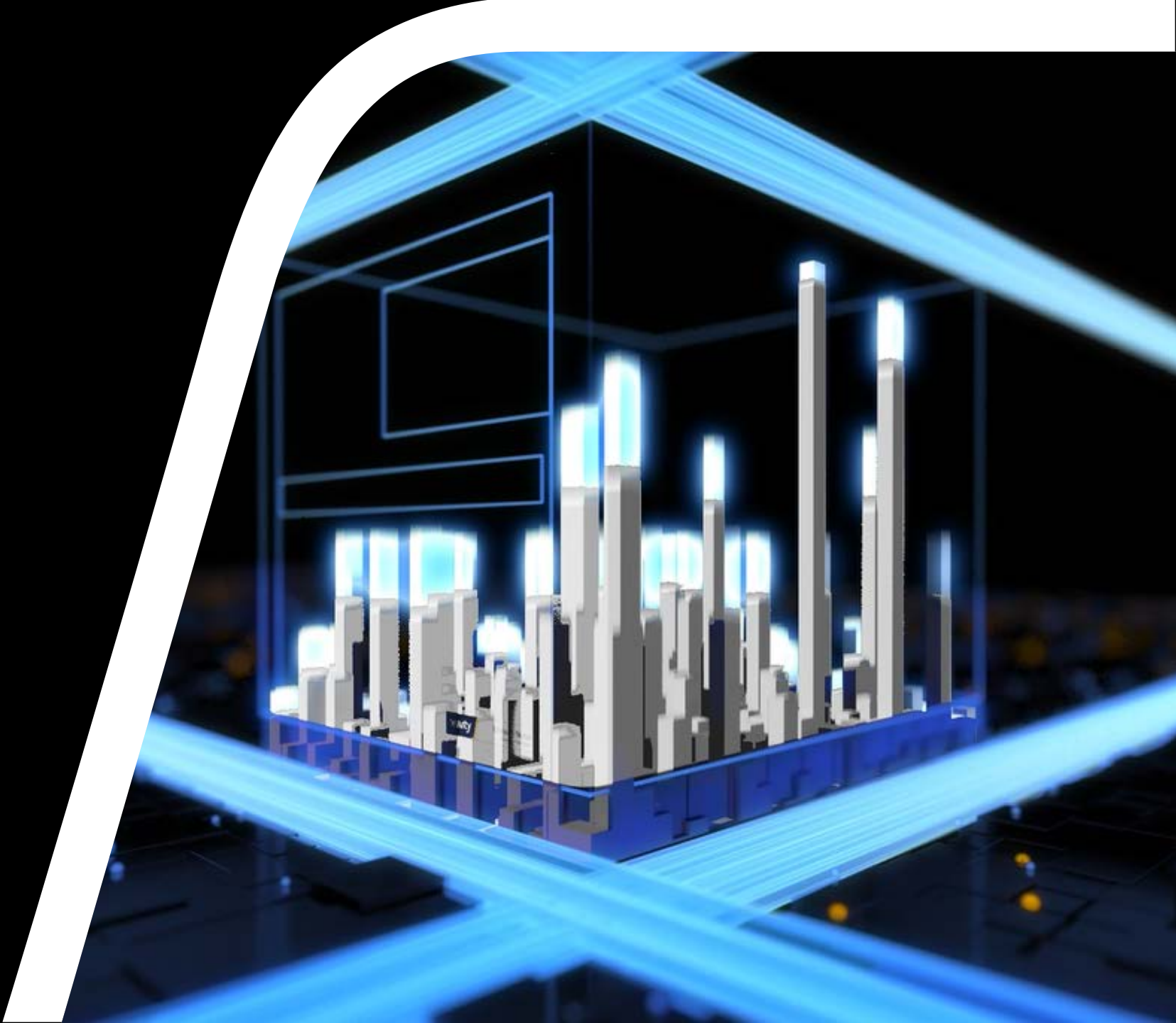


Meet the plate
reader family.



The Revvity plate reader family

State of the art technology for all application types and throughput needs



VICTOR® Nivo™



EnSight®



EnVision® Nexus™

← Low throughput - standard performance

High throughput - high performance →

Revvity's portfolio of multimode plate readers provides the latest detection technologies to meet the diverse assay requirements of labs today. All plate readers are configurable, so you can add technologies when you need to future-proof your lab. Over 30 years of instrument development experience, you can expect performance and reliability from any of our microplate readers.

The Revvity plate reader family

State of the art technology for all application types and throughput needs



VICTOR® Nivo™



EnSight®



EnVision® XCite



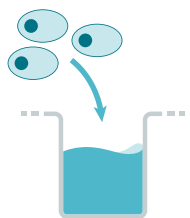
EnVision® Nexus™

Low throughput - standard performance

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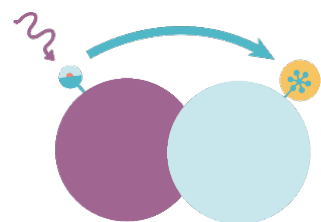
How our microplate readers work



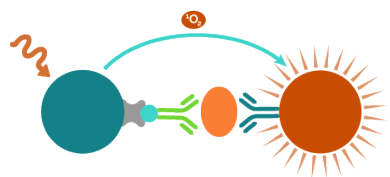
Cell-based Assays



Kinetic Assays



Biochemical Assays



Immunoassays



Binding Assays



Reporter Gene Assays

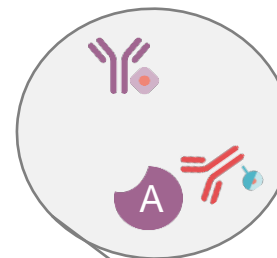


Quantification Assays

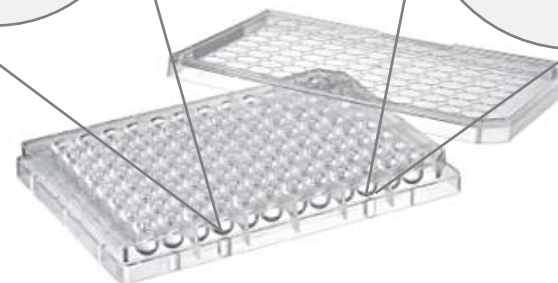
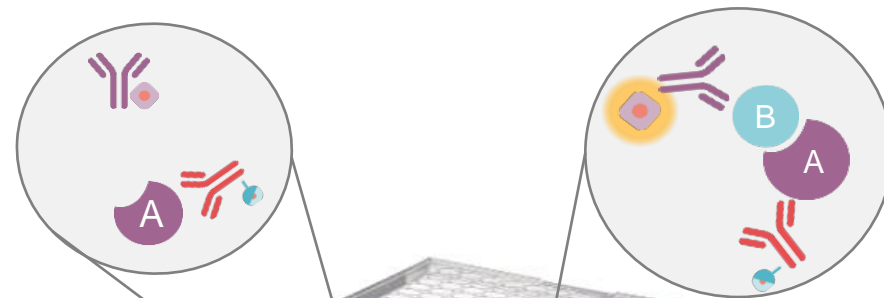
Detect:

- Presence or absence of an analyte (quantification)
- Protein interacting with each other – does protein A bind to protein B?

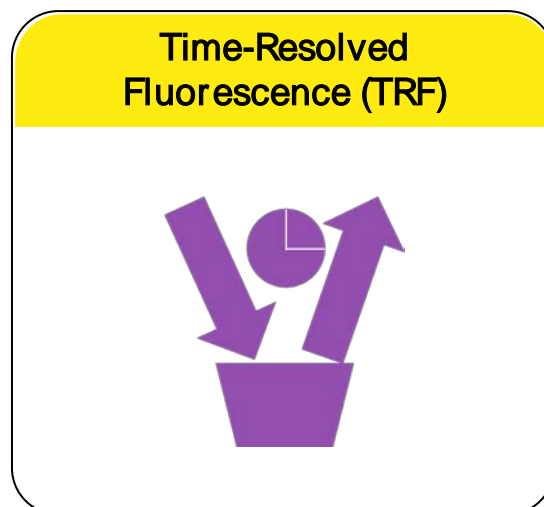
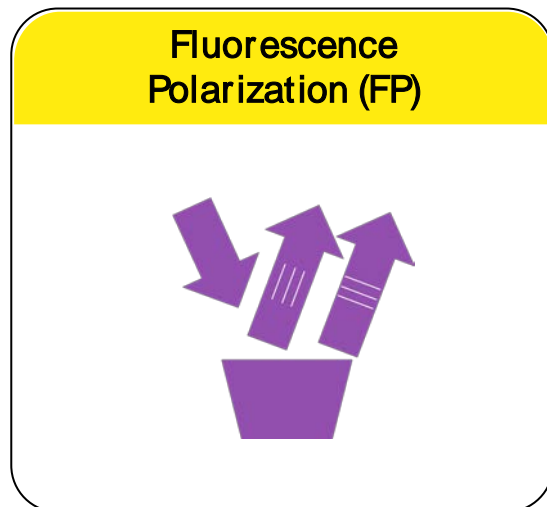
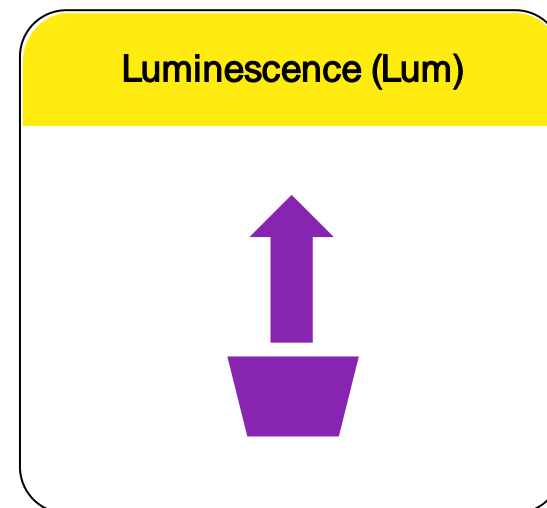
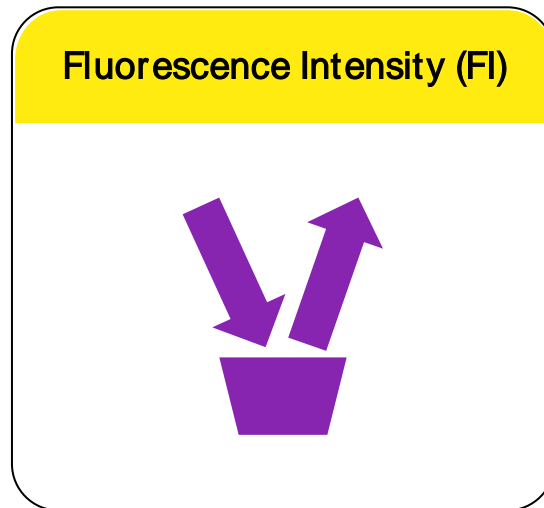
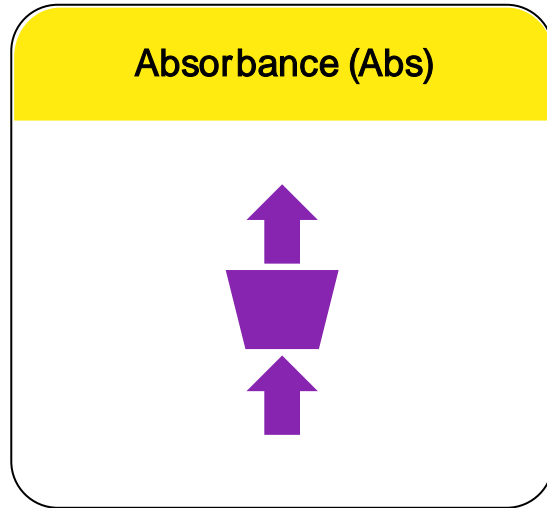
No Signal



Signal



Detection configurations



Accessories*



Stacker

- Walkaway solution
- Increased throughput
- Enables long-term assays with several plates



Temperature Control

- Heating of chamber from ambient +2 up to 65°C
- Enables cellular assays



Dispenser

- Dispensing of liquid in wells during assays
- 2 channels available
- Enables e.g. Ca²⁺ or flash LUM assays



Gas Control

- CO₂/O₂ regulation in measurement chamber
- Enables long-term cellular assays or hypoxia assays



Automation Interface

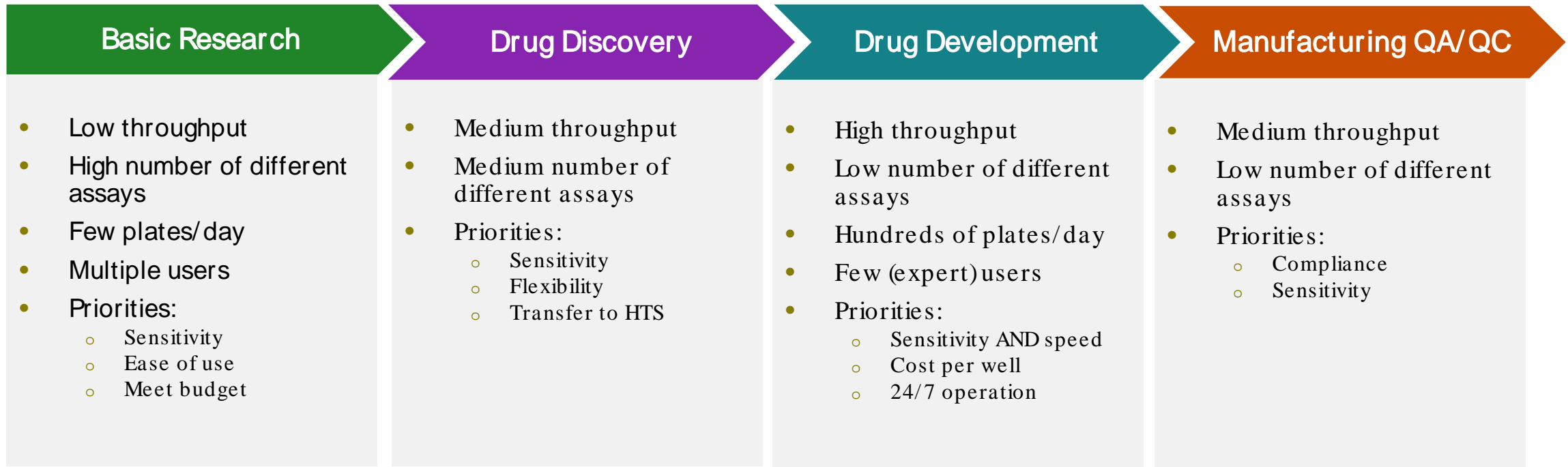
- Software option
- Enables integration of instrument into robotic environments



Enhanced Security

- Software option
- Adds features for customer's compliance with 21CFR p11
- Enables instruments in GLP/GMP environment

Different requirements across the drug discovery life cycle



View our guide to help you choose the right plate reader:

[Download](#)



VICTOR Nivo: industry's smallest multimode plate reader



Absorbance



Fluorescence Intensity



Luminescence



Time-Resolved Fluorescence



Fluorescence Polarization



Alpha



HTRF®
Certified



Temperature Control



Gas Control



Dispenser



Wifi



Stacker



Automation Interface

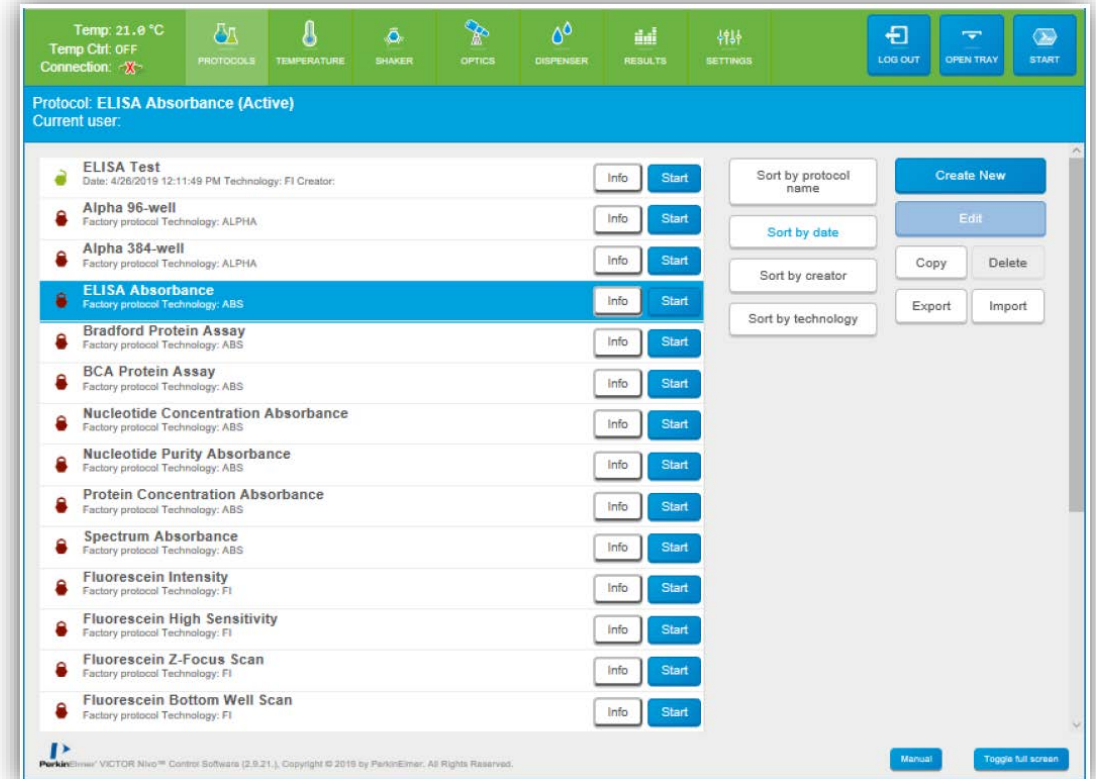
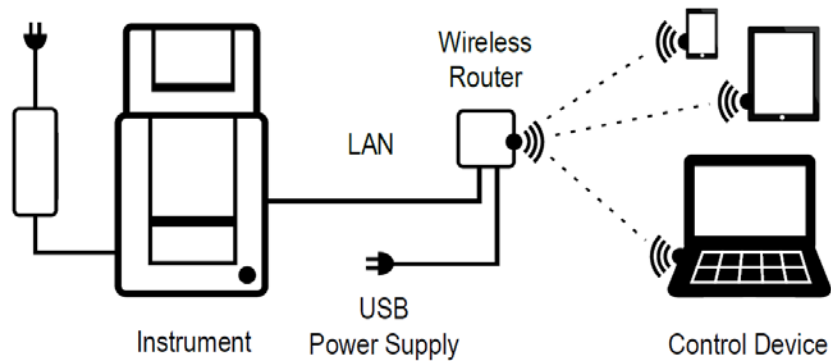


Enhanced Security



Simple reader operation and user interface

- Easy setup – can be done by user
- Connection via LAN/ WiFi
- Browser-based user interface
- Use of mobile devices possible
- Data in internal database
- Built in basic calculations, statistics, and curve fitting



Tutorial Videos:

[View](#)

VICTOR Nivo: supporting materials

Brochure



[Download](#)

Specification Sheet



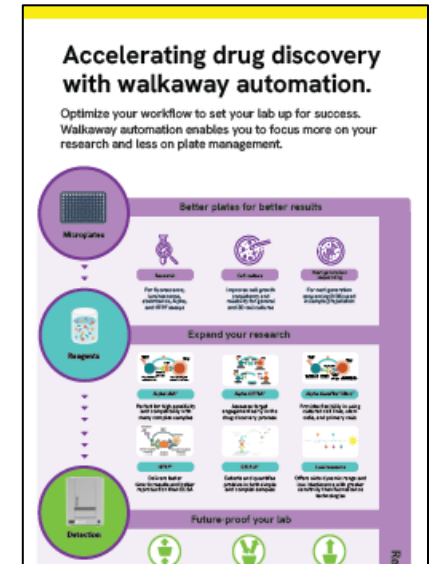
[Download](#)

Video



[View](#)

Infographic



[Download](#)

For additional content:

[Visit Website](#)

VICTOR Nivo: application notes

APPLICATION NOTE
Multimode Detection

Rapid and Simple Quantification of DNA and Protein Using the VICTOR Nivo Multimode Plate Reader

Introduction
Many research labs in both research and drug screening applications require the measurement of nucleic acid and protein concentration and purity in high sample throughput. The VICTOR Nivo Multimode Plate Reader offers a simple, accurate and reliable way to measure DNA and protein concentrations in a variety of applications.

Key Features
The VICTOR Nivo Multimode Plate Reader offers a simple, accurate and reliable way to measure DNA and protein concentrations in a variety of applications. It is a compact, benchtop instrument that is easy to use and provides a wide range of detection options for DNA and protein quantification.

PerkinElmer

[DNA & Protein Quantification using Abs & FI](#)

APPLICATION NOTE
Multimode Detection

Measuring Cell Proliferation and Cytotoxicity using the ATPase Lum System and the VICTOR Nivo Multimode Plate Reader

Introduction
In cell-based assays used in both research and drug screening applications, measuring cell proliferation and cytotoxicity is a key requirement. The VICTOR Nivo Multimode Plate Reader offers a simple, accurate and reliable way to measure cell proliferation and cytotoxicity in a variety of applications.

Key Features
The VICTOR Nivo Multimode Plate Reader offers a simple, accurate and reliable way to measure cell proliferation and cytotoxicity in a variety of applications. It is a compact, benchtop instrument that is easy to use and provides a wide range of detection options for cell proliferation and cytotoxicity.

PerkinElmer

[Cell Proliferation and Cytotoxicity Using Lum](#)

APPLICATION NOTE
Multimode Detection

Characterization of Compound Effects on PDE Activity Using the LANCE Ultra cAMP Kit and VICTOR Nivo Multimode Plate Reader

Introduction
In this application note, we describe the characterization of compound effects on phosphodiesterase (PDE) activity using the LANCE Ultra cAMP Kit and the VICTOR Nivo Multimode Plate Reader.

Key Features
The LANCE Ultra cAMP Kit and the VICTOR Nivo Multimode Plate Reader offer a simple, accurate and reliable way to measure PDE activity in a variety of applications. It is a compact, benchtop instrument that is easy to use and provides a wide range of detection options for PDE activity.

PerkinElmer

[LANCE Ultra cAMP Assay Using TRF](#)

APPLICATION NOTE
Multimode Detection

Rapid and Easy Quantification of GAPDH using the VICTOR Nivo Multimode Plate Reader and the MaxDiscovery GAPDH ELISA Kit

Introduction
The VICTOR Nivo multimode plate reader is a compact benchtop system, providing up to 16 detection modes: absorbance, fluorescence, luminescence, fluorescence intensity, time-resolved fluorescence and fluorescence polarization. The system is designed for easy integration into research and drug screening environments and is characterized by its small footprint, its flexibility and its easy-to-use, user-friendly interface.

Key Features
The VICTOR Nivo Multimode Plate Reader offers a simple, accurate and reliable way to measure GAPDH levels in a variety of applications. It is a compact, benchtop instrument that is easy to use and provides a wide range of detection options for GAPDH levels.

PerkinElmer

[GAPDH ELISA Assay using Abs](#)

For additional content: [Visit Website](#)

EnSight: detection capabilities



Absorbance



Fluorescence Intensity



Time-Resolved Fluorescence



Ultrasensitive Luminescence



Alpha



Temperature Control



Stacker



Robotic Interface



Enhanced Security

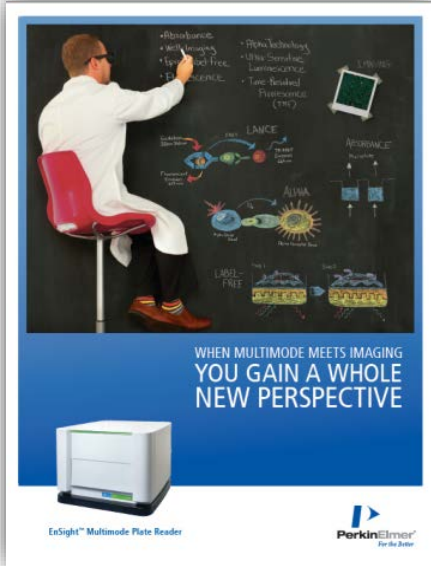


Monochromator (FI & Abs)



EnSight: supporting materials

Brochure



The brochure features a scientist in a white lab coat pointing at a chalkboard filled with diagrams and text. The diagrams include 'Alpha', 'LANCET', 'ALPHA', and 'LABEL-FREE'. The text on the board lists: 'Alpha-based', 'Label-free', 'Time-Resolved Fluorescence (TRF)', 'Alpha-based', 'Label-free', 'Time-Resolved Fluorescence (TRF)'. Below the chalkboard, the text reads: 'WHEN MULTIMODE MEETS IMAGING YOU GAIN A WHOLE NEW PERSPECTIVE'. At the bottom, there is an image of the EnSight Multimode Plate Reader and the PerkinElmer logo.

[Download](#)

Specification Sheet



The specification sheet is titled 'EnSight Multimode Plate Reader' and 'SPECIFICATIONS Plate Readers'. It includes a photograph of the plate reader. The document is divided into sections: Description, Key Features, Technologies, and Benefits. The PerkinElmer logo is at the bottom right.

[Download](#)

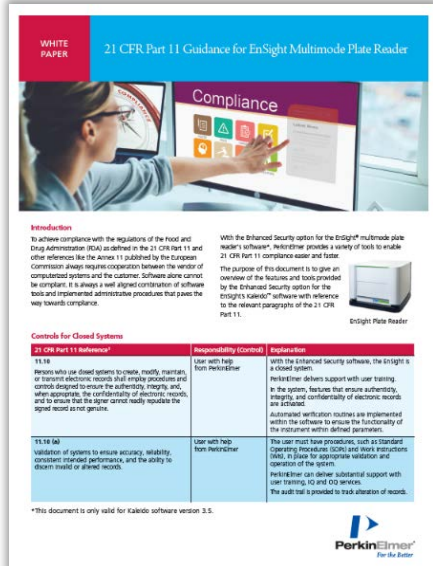
White Paper (WP)



The white paper is titled 'Identifying Pharmacological Chaperones for the Cellular Prion Protein using a Label-free Biochemical Assay on the EnSight Multimode Plate Reader'. It includes an 'APPLICATION NOTE Multimode Detection' section with author information: 'Author: Silvia B. Magagnoli, Antonella Santoni, Maddalena Biondini'. The PerkinElmer logo is at the bottom right.

[View](#)

Enhanced Security (GxP) WP



The white paper is titled '21 CFR Part 11 Guidance for EnSight Multimode Plate Reader'. It includes an 'Introduction' section and a table titled 'Controls for Closed Systems'. The table has three columns: '21 CFR Part 11 Reference', 'Responsibility (Control)', and 'Explanation'. The PerkinElmer logo is at the bottom right.

21 CFR Part 11 Reference	Responsibility (Control)	Explanation
TS.16 Persons who use closed systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, when appropriate, the confidentiality of electronic records, and to ensure that the signer cannot readily repudiate the signed record and/or process.	User with help from PerkinElmer	With the Enhanced Security software, the EnSight is a closed system. PerkinElmer delivers support with user training in the system, features that ensure authenticity, integrity, and confidentiality of electronic records are included. Automated verification routines are implemented within the software to ensure the functionality of the instrument within defined parameters.
TS.16 (a) Validation of systems to ensure accuracy, reliability, operational readiness performance, and the ability to detect invalid or altered records.	User with help from PerkinElmer	The user must have procedures with its standard operating procedure (SOP) and work instructions (WI). It shall be appropriate validation and operators of the system. PerkinElmer can deliver substantial support with user training, OQ and OOS services. The audit trail is provided to track alteration of records.

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[Visit Website](#)

EnVision Xcite: speed and sensitivity combined



Absorbance



Fluorescence Intensity



Luminescence



Time-Resolved Fluorescence



Fluorescence Polarization



Alpha



Monochromator (FI & Abs)

TRF Laser



Ultrasensitive Luminescence



HTS Alpha



Temperature Control



Robotic Interface For Automation



Dispenser



Stacker

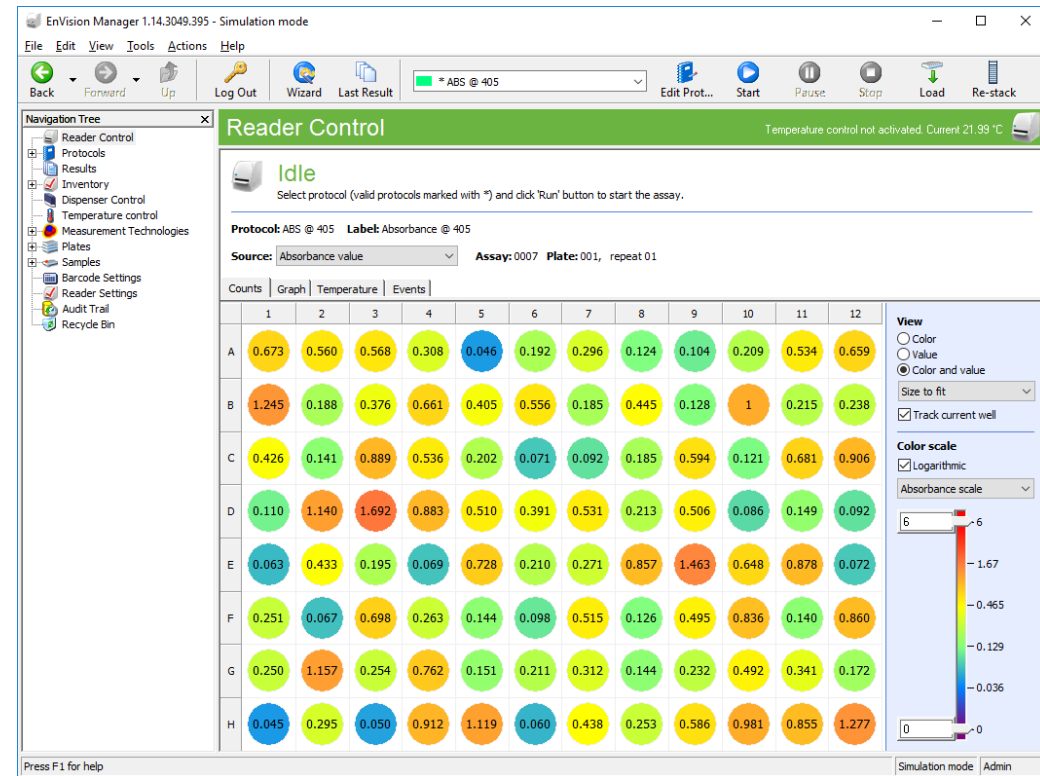


Enhanced Security



EnVision reader manager software

- Reader control via dedicated PC
- Manager software for reader control
 - Preset protocols for easy start
 - Integrated data analysis
 - Comprehensive list of operations for writing your own protocol
- Enhanced Security version for reaching 21CFR part 11 compliance in regulated environments
- Data in MS SQL database



EnVision: supporting materials

Brochure



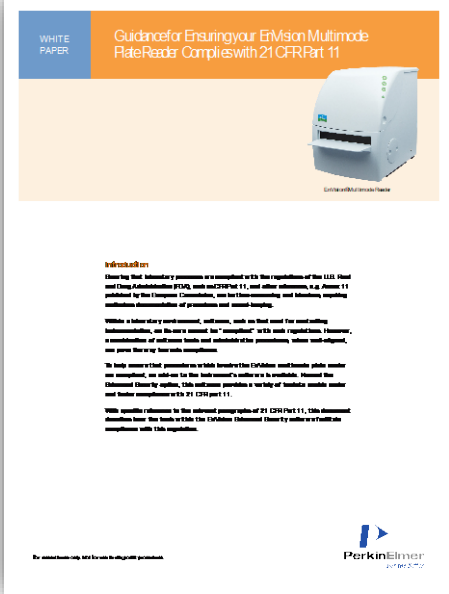
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Specification Sheet



[Download](#)

Enhanced Security (GxP) White Paper

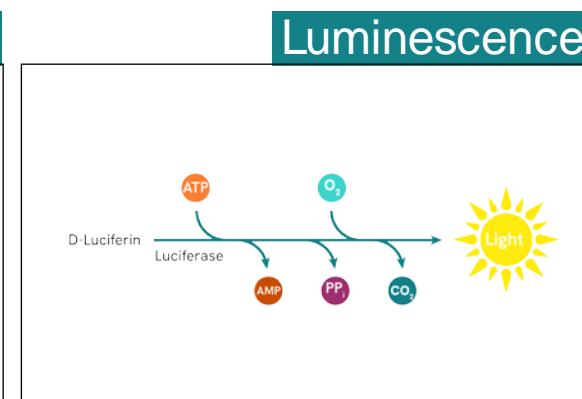
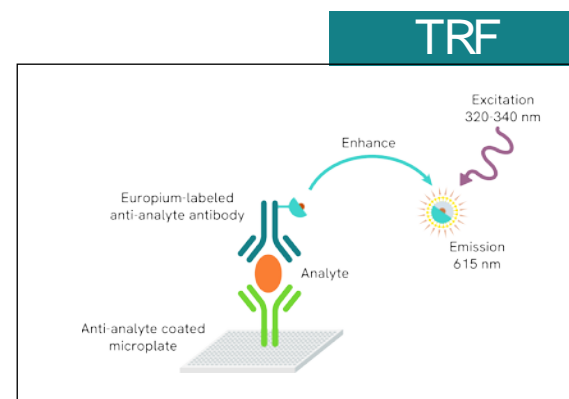
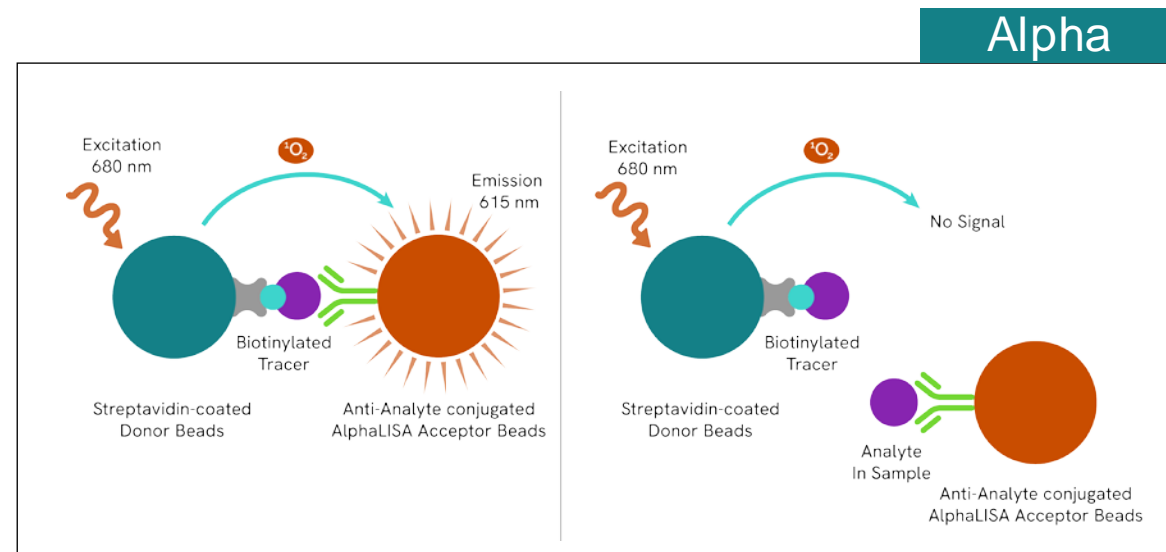


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For additional content: [Visit Website](#)

EnVision: application notes

	App Notes
Oncology	14
Inflammation	2
Metabolism	4
Cell Signaling	5
3D Culture	2
Screening	8
Biotherapeutics	7
Animal Health	1
Food Science	1



Introducing the NEW EnVision Nexus!



Absorbance



Fluorescence Intensity



Luminescence



Time-Resolved Fluorescence



Fluorescence Polarization



Enhanced Alpha



High Power TRF Laser



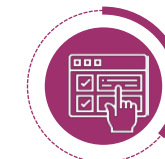
Ultrasensitive Luminescence



HTS Alpha



Robotic Interface for Automation



Stacker



Enhanced Security



EnVision Nexus key features



Highest speed and sensitivity for the most demanding applications, using an improved optical beam path, an aperture for crosstalk minimization, and latest detection technology available



Sensitive, accurate, and robust to give you **reliable results** and **minimized downtime**



New and improved **Kaleido 4.0 software** - workflow based, and easy to use to get your results fast



Modern, easy to use platform to future proof your lab, with **preconfigured, assay specific, filter modules** to simplify your workflow



Fully automatable for walkaway convenience



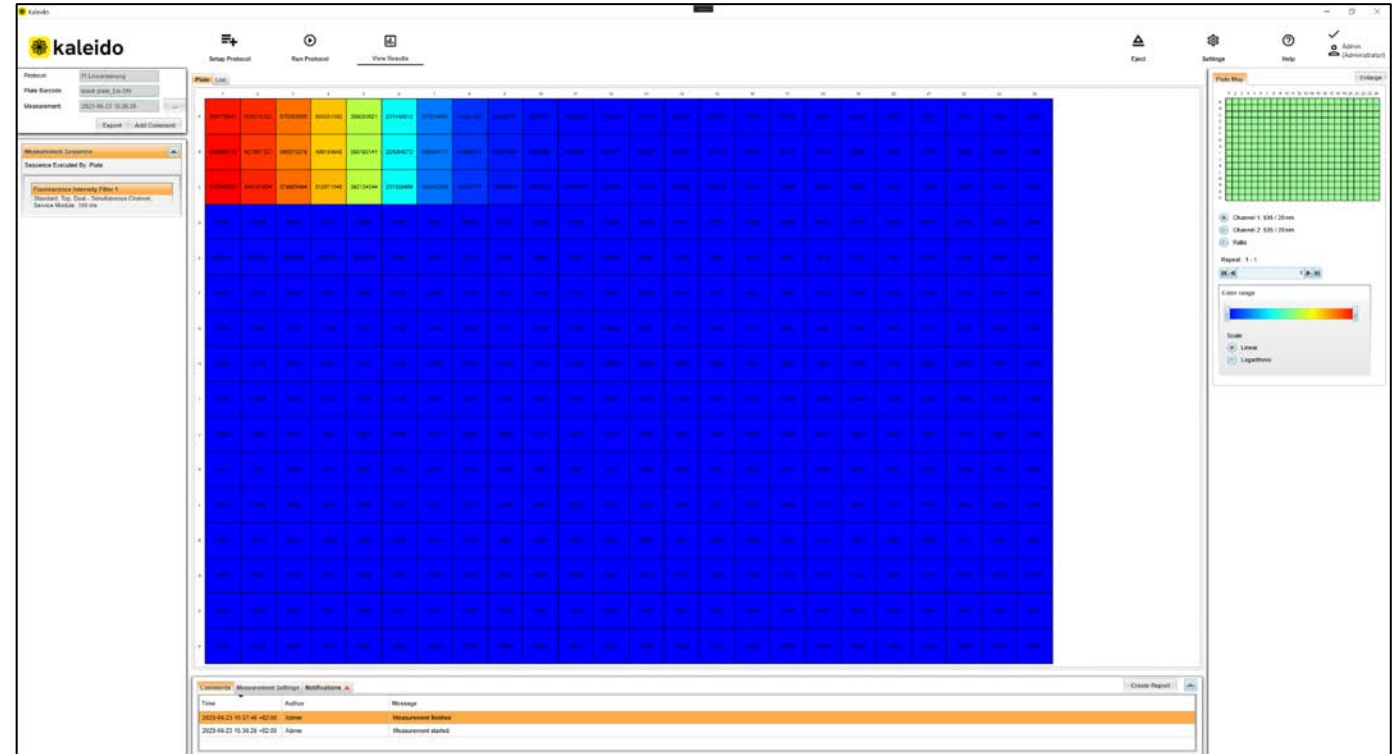
The next generation software: intuitive & powerful

Everything you need in one place

- Workflow oriented, **easy to use interface** offering simple experiment set up
- Database allowing for easy search, import, and backup of protocols
- Inventory cataloging all components, including filter modules, apertures, and even plate types and their details

Compliance

- Our Enhanced Security mode provides technological controls and features that **support 21 CFR Part 11 compliance** with access levels, data security, and a comprehensive audit trail of user actions.



Filter modules

What is it?

For the EnVision Nexus, we've combined filters and dichroic mirrors into a single preconfigured module

Easy to install

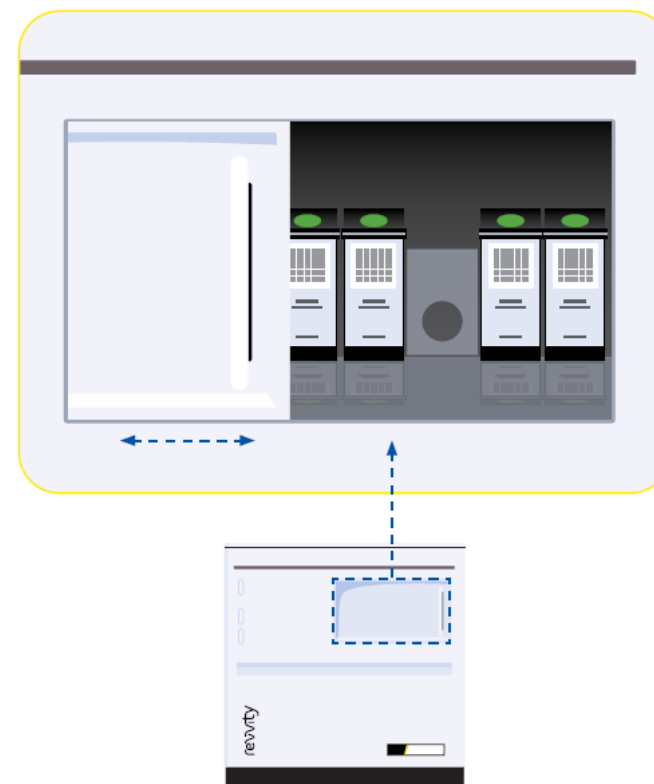
The new EnVision Nexus filter modules can be placed directly in the instrument by hand

Perfectly positioned

The modules are held into place magnetically, storing up to 6 modules at a time

Simple configuration

Seamless integration with software with more than 40 assay-specific modules to choose from



The next generation: walkaway convenience

Plate Stacker

Available for 20 or 50 plates, interchangeable plate stacker magazines can easily be added to increase capacity and throughput.

Automation

The EnVision Nexus can also be fully automated - integrating detection with liquid handling, incubation and other functionalities to provide full workflow automation solution.

Compatible with Revvity automation platforms as well as a wide range of third-party automation platforms.

revvity



EnVision Nexus: supporting materials

eBook



[Download](#)

Video



[Download](#)

Specification Sheet



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For additional content: [Visit Website](#)



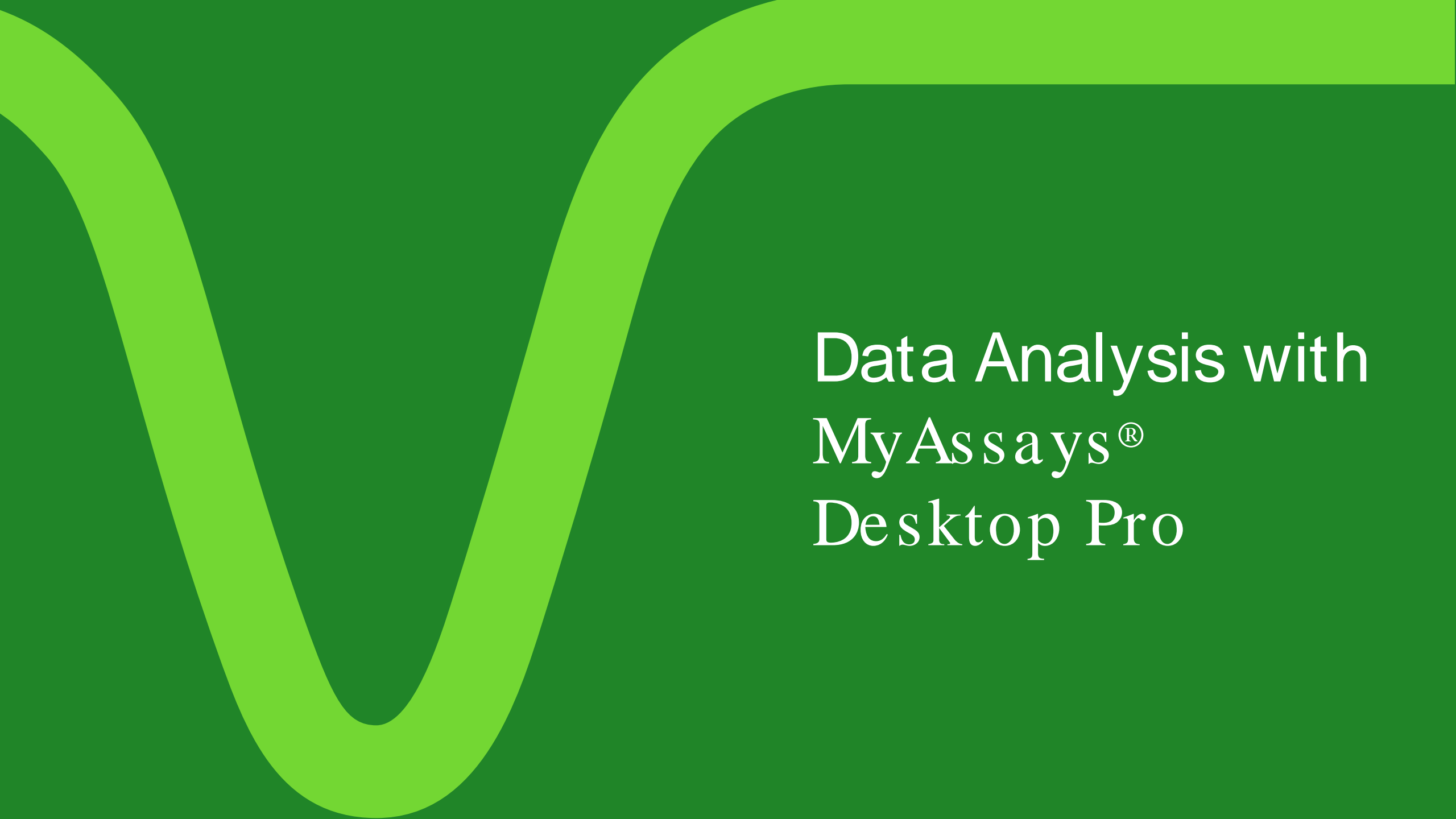
The next generation: support

Your application needs are as individual as you are.

So, we take a **consultative approach** to every engagement with you.

Our expert-global service and support teams, comprising dedicated lab- and field-based applications specialists, can work with you in partnership to overcome the unique challenges your application brings.

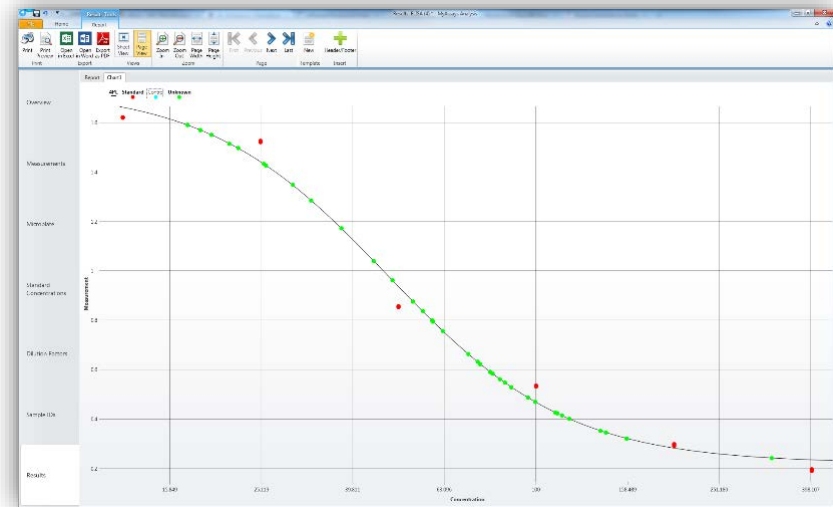
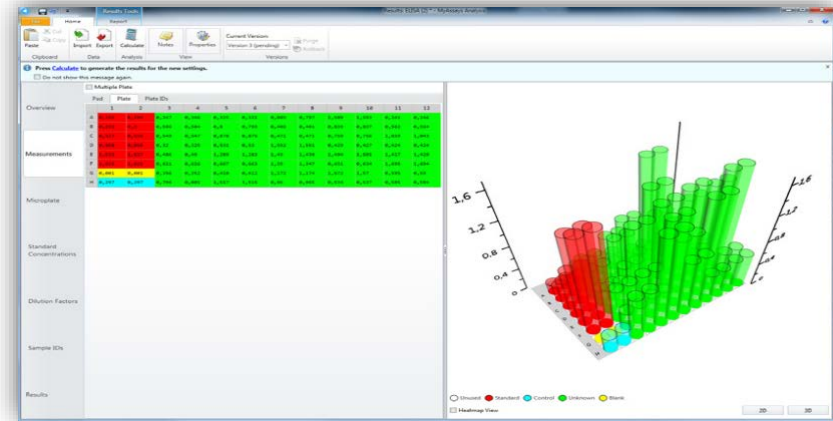




Data Analysis with
MyAssays[®]
Desktop Pro

Data analysis tool: MyAssays® Desktop Pro

- The data analysis tool for all Revvity multimode microplate readers
- Different versions available (Pro, Enhanced Security)
- 700+ pre-configured analysis protocols
 - Download & use offline
- Build and customize user-defined analysis protocols
- Importing, analysis, reporting, exporting
- Automatable analysis



A thick, light green wavy line starts from the top left, curves down into a deep valley, and then curves back up towards the top right, ending in a horizontal bar. The background is a solid dark green.

Enhanced Security Software

GxP requirements

GLP compliance

- Research labs
- CRO / Biotech

GMP compliance

- Drug manufacturing and QA/QC
- Pharma

- Software options to support customers in reaching compliance with
 - FDA 21CFR p11,
 - EU Annex 11
 - ...and similar



Our GxP toolbox

Compliance Solutions eBook



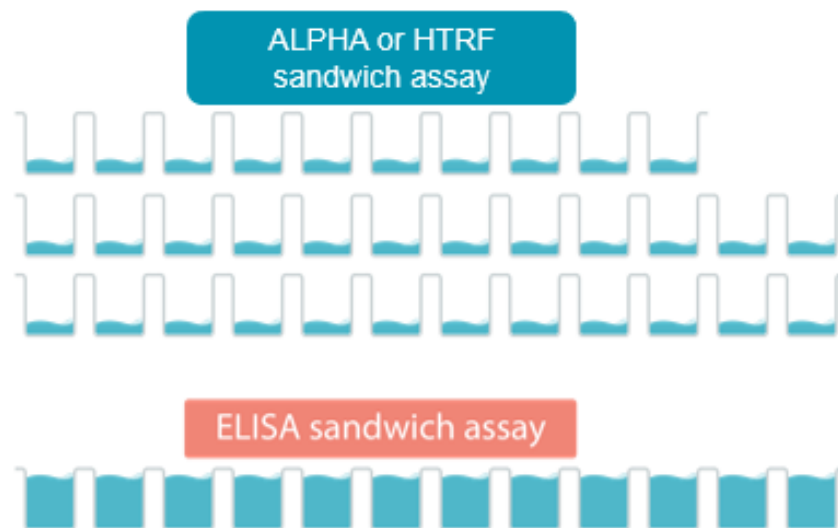
[Download](#)

Enhanced Security (GxP) Video



[View](#)

Saving previous samples with HTRF and Alpha



WB : ~25-50µg of total proteins / lane
 ALPHA or HTRF : ~5µg of total protein /well

Flexible format – Easy to Miniaturize

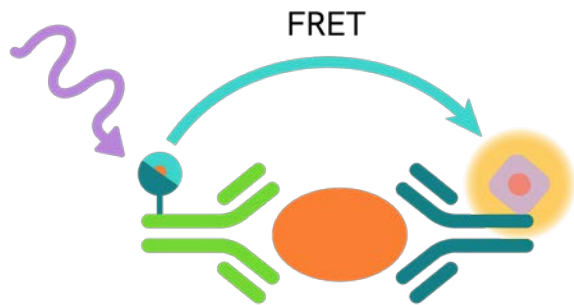
Plate	Volume per well	Application
96w	200 µl	Basic research
96w half area		
384w	Classical ALPHA / HTRF = 50 - 20 µl	uHTS
96 or 384w LV		
1,536w		
1,536w hibase	4 µl	

HTRF is specific, sensitive, and robust

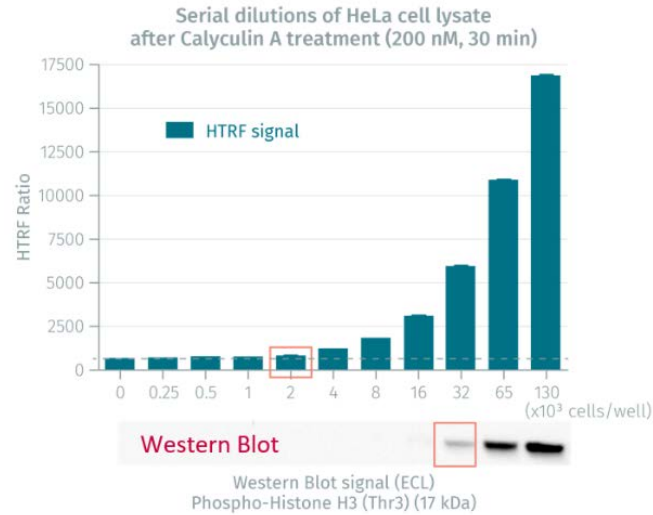


Increased Specificity over Western Blot

HTRF relies on the use of 2 antibodies, making it benefit from the double binding improvement of its specificity



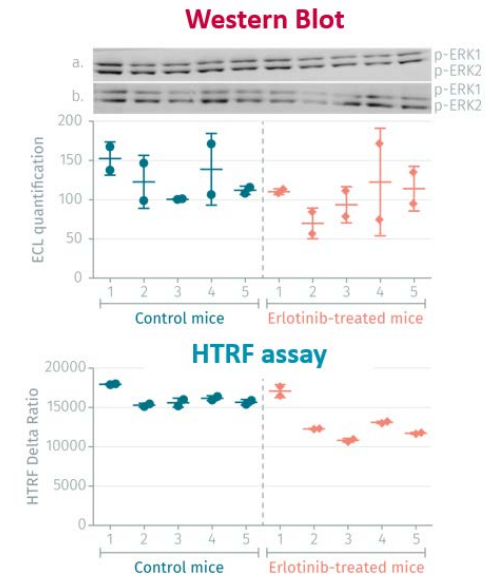
Superior Sensitivity



→ 16 times more sensitive



Top notch robustness for improved precision



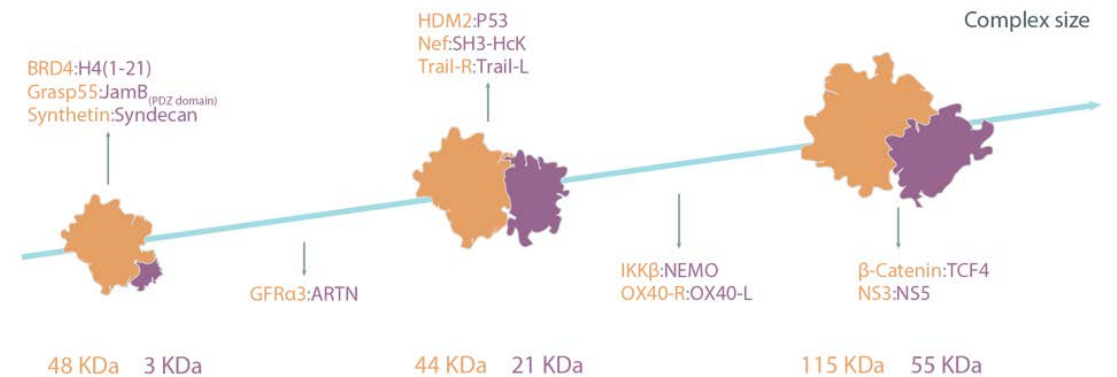
→ Do not miss on subtle compound-induced effects

HTRF assays work with target of all sizes

Detection is possible from small nucleotides to large molecules such as Utrophin



HTRF fits protein complexes of a wide size range



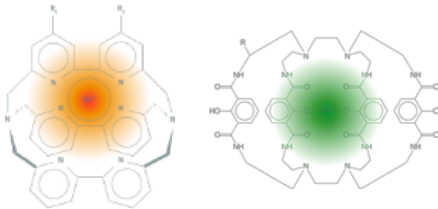
HTRF – how the technology works?

Spectral selectivity

DONOR
Eu³⁺ or Tb³⁺ cryptate



Absorbs at 337 nm
Long-live fluorescence (ms)



ACCEPTOR
XL665 or d2



Emits at 665 nm
Short-live fluorescence when no FRET (ns)

HTRF originated from the Nobel prized work of J.M. Lehn on rare earth complex



Principle

FRET occurs when both reagents are in close proximity



1) Excitation of Donor

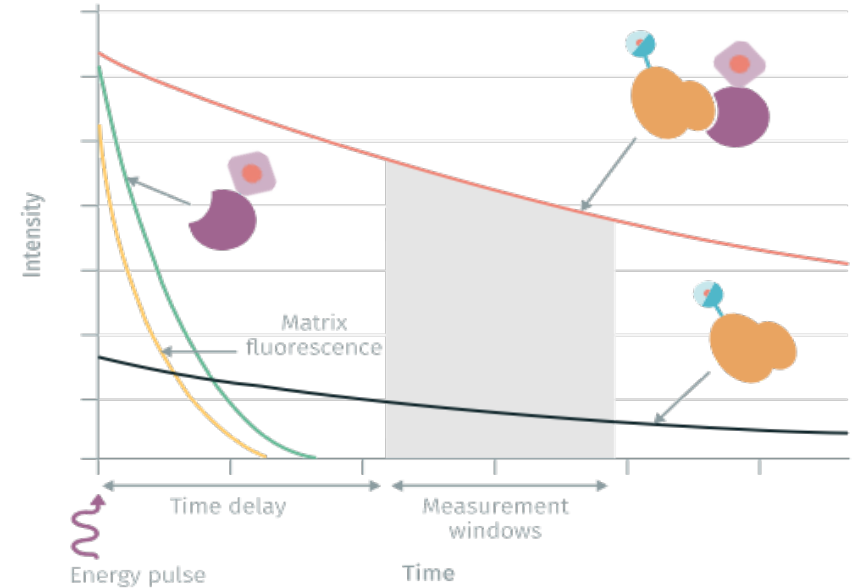


2) Energy transmission to Acceptor



3) Acceptor emission

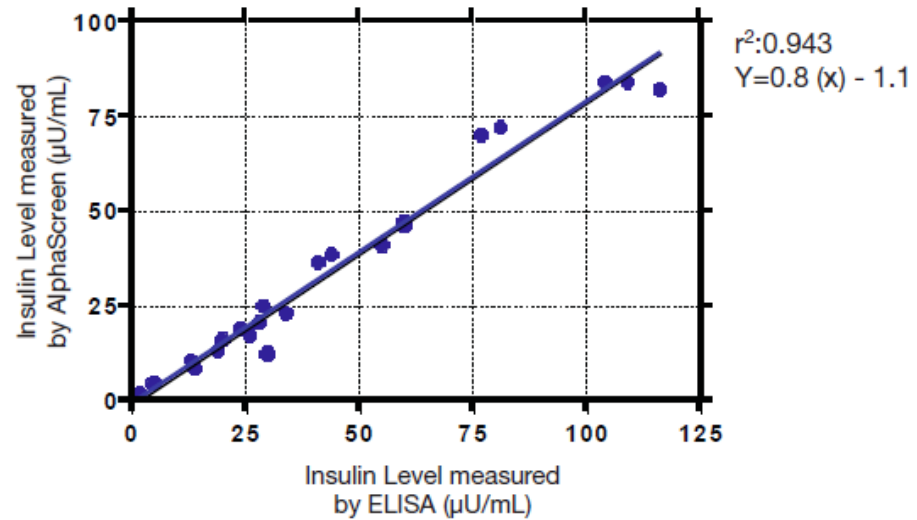
Temporal selectivity



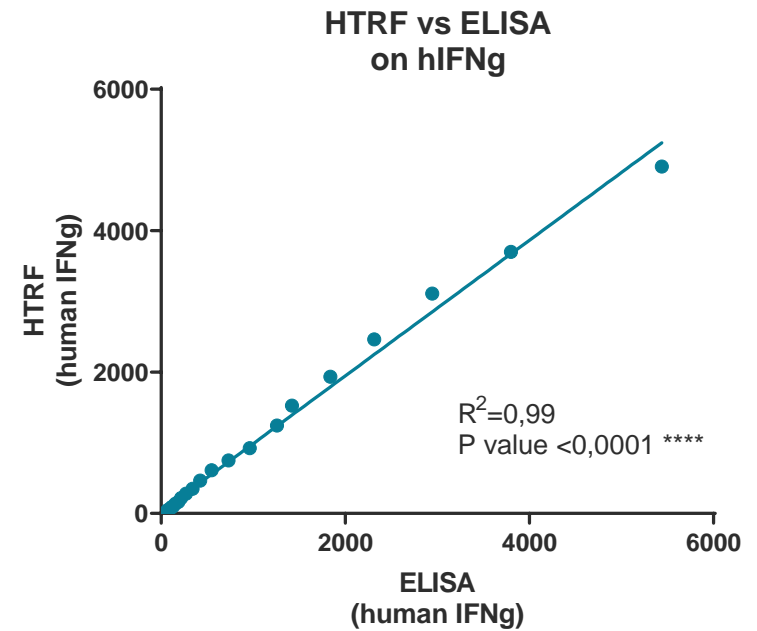
The energy pulse from the excitation source is followed by a time delay, allowing interfering short-lived fluorescence to decay.

Correlation with ELISA

Serum/plasma samples

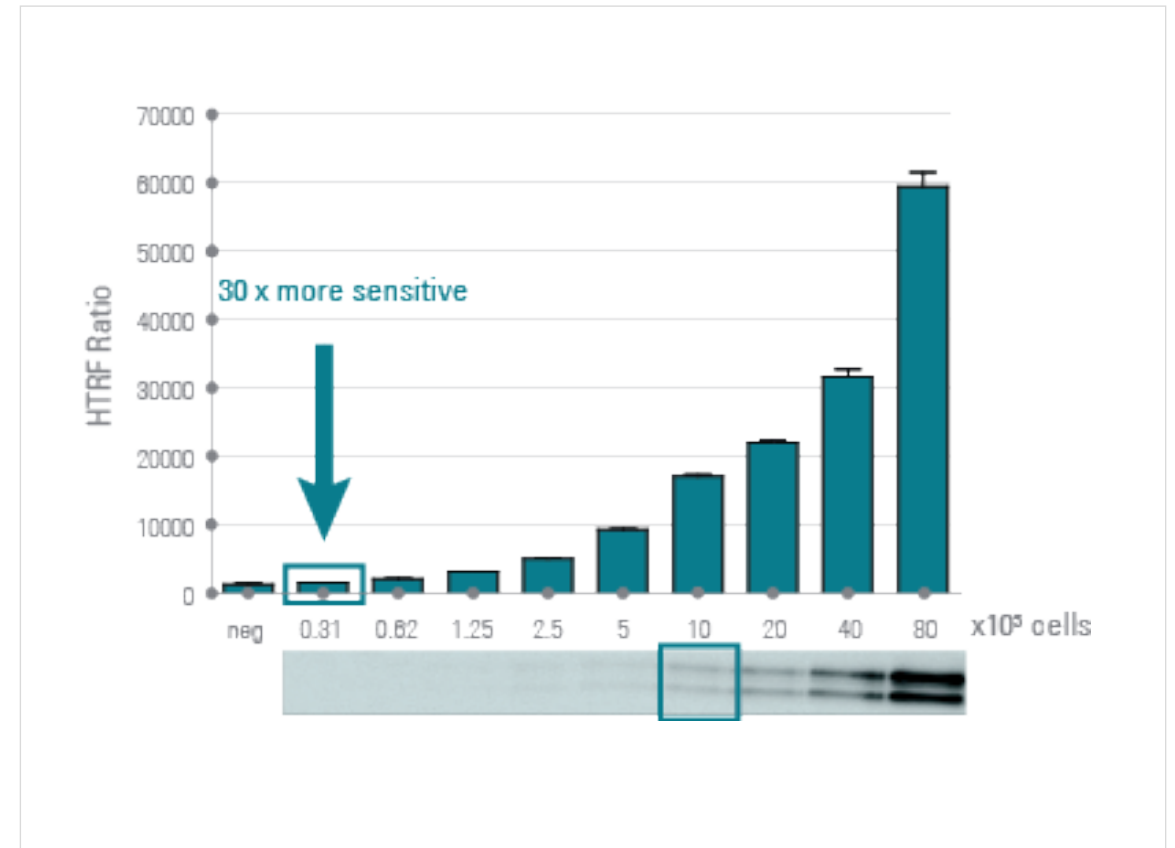
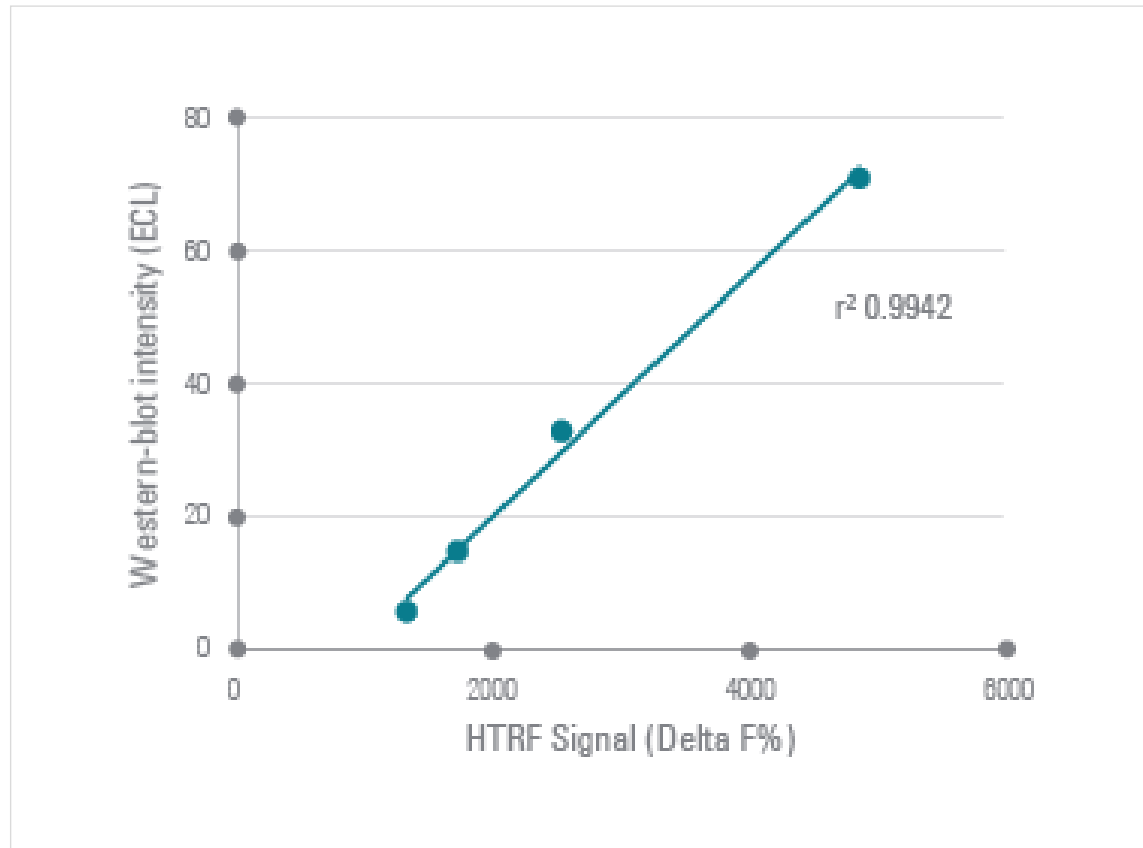


Supernatant samples




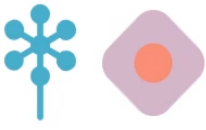

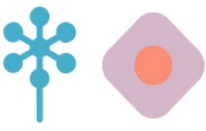


Correlation with Western Blot

p-ERK (stimulated HEK293 cells)

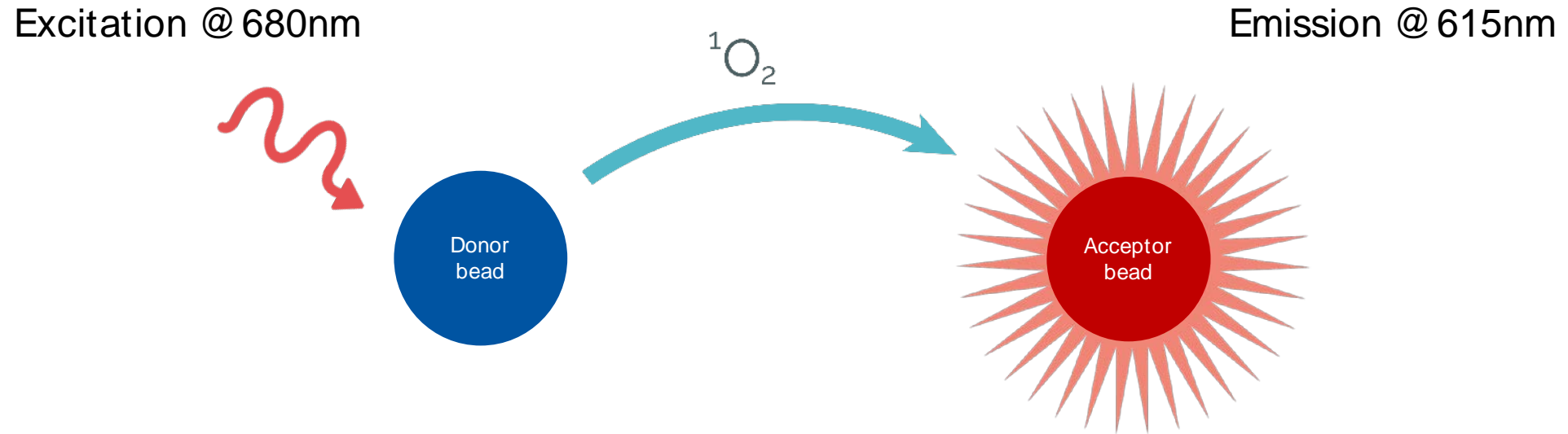


What's the difference between LANCE & HTRF?

- HTRF and LANCE are based on the exact same TR FRET principles
- The difference resides in the chemistry partners engaged (donors and acceptors), and the emission at which they are detected

	Donors	Acceptors
htrf Homogeneous Time-Resolved Fluorescence EDTA friendly	 Eu³⁺ cryptate Em @ 620 nm	 XL665 d2 Em @ 665 nm
	 Tb³⁺ cryptate Em @ 620 nm	 XL665 d2 Em @ 665 nm
LANCE <u>L</u> anthanide <u>C</u> helate <u>E</u> xcite Not EDTA friendly	 Eu³⁺ chelate Em @ 615 nm	 ULight Em @ 665 nm
		Green dye Em @ 520 nm

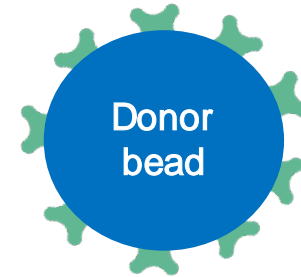
Amplified luminescence proximity homogenous assay



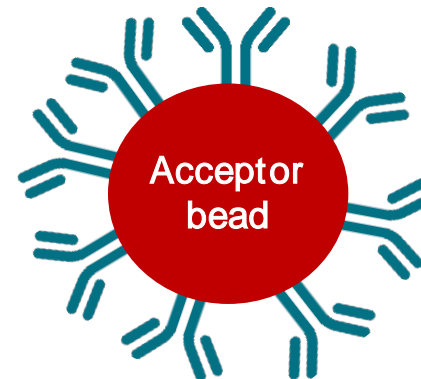
Emission occurs only if beads are brought in proximity

Alpha bead characteristics

- Made of polystyrene
- \varnothing ~250 nm: Very stable colloidal suspension
- Bead Density = 1.055 : Very slow sedimentation in water!
- Dextran polymer coating (hydrogel)
 - Minimizes non-specific interaction (aggregation)
 - Reactive aldehyde groups (raw beads) for conjugation
- Donor beads are light sensitive

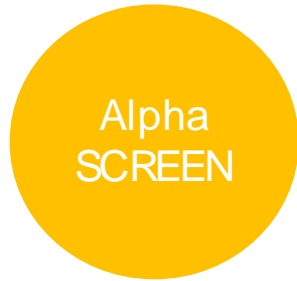


Bead at 20 μ g/mL :
2000-3000 Streptavidin/bead
= 20-30 nM SA



200-300 Antibody/bead
= 2-3 nM Ab

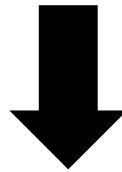
Different acceptor beads: AlphaScreen and AlphaLISA



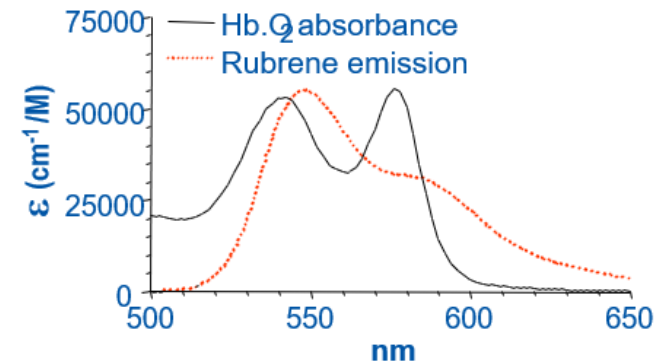
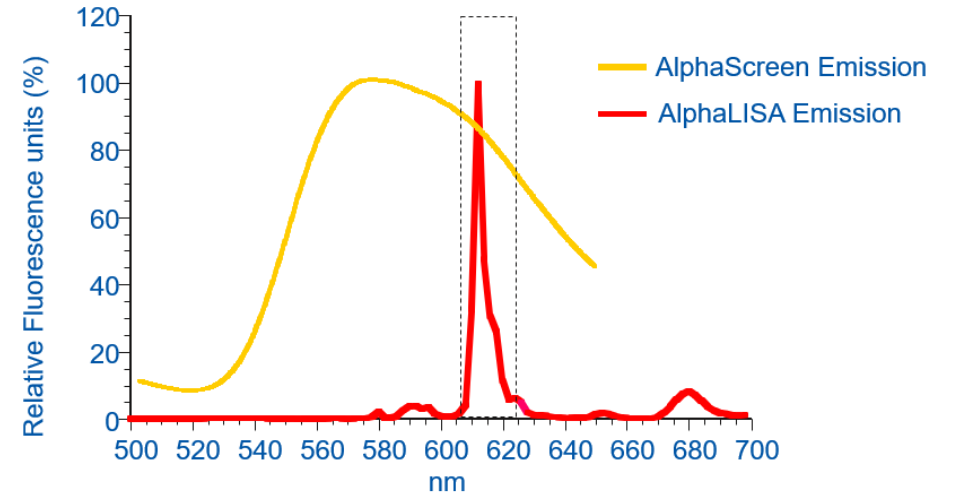
Rubrene emission
Detection 520-620nm

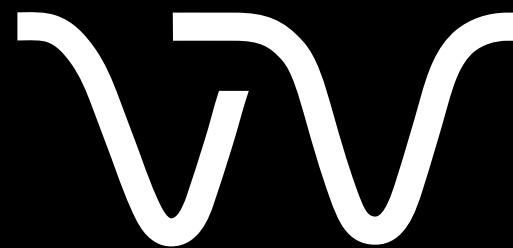


Europium emission
Detection 607-623nm



- Stronger signal with AlphaLISA acceptor beads
- Minimized effect of matrix interference
- Optimized for serum/ plasma samples





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