

Exclusive AlphaScreen and AlphaLISA Assay Technology



fast relief from the
headache of assay complexity

Focus on **Discovery**

Run your assay quickly, efficiently and reliably

Alpha technology allows you to assay the most complex samples and molecules – such as samples containing serum and full-length proteins – faster and without laborious wash steps.

AlphaScreen® and AlphaLISA® are powerful reagent platforms that utilize PerkinElmer's proprietary bead-based Alpha technology. Both are ideal to measure the largest and most complex molecules:

- AlphaScreen is the most versatile and physiologically relevant assay for large biological molecules. It is perfect for biochemical and cellular screening applications.
- AlphaLISA is the no-wash ELISA assay alternative that allows you to run samples more efficiently without compromising sensitivity. It's less time-intensive than traditional ELISA and minimizes interference from difficult samples such as serum or plasma.

Together, AlphaScreen and AlphaLISA allow you to measure a wide range of biological molecules and interactions in a custom or high-throughput format without the need for washing and diluting. Either platform is ideal for automation and saves time, labor, reagents and other resources.

What is Alpha technology?

Amplified luminescent proximity homogeneous assay (Alpha) refers to the key characteristics of the science behind Alpha technology:

- Amplified —————> Signal intensity
- Luminescent —————> Reaction measurement
- Proximity —————> Distance between Alpha Donor and Acceptor beads
- Homogeneous —————> No wash necessary



The Many Benefits of Alpha Technology

Homogeneous; offers a “mix and measure” assay, eliminating separation or wash steps

Easy to use; available in a variety of detection kits for pre-validated assays with off-the-shelf reagents

Low background and amplified signal; allow detection down to the attomole level in many biological assays

Proximity-based; allows detection of very simple to large complex biological interactions

Validated on PerkinElmer instruments

Less assay variation than ELISA; saves time, labor and reagents

Automation-ready; suitable for HTS and ultra-HTS

Easy to miniaturize

Wide dynamic range; minimizes dilution steps

Allows detection of low-concentration analytes (sub-pM)

Flexible; broad range of affinities allows optimal use of high- or low-affinity antibodies

Detects wide variety of biomolecules from small hormones to bulky complexes

Minimal assay volume; $\leq 5 \mu\text{L}$ of sample needed

Wide analytical range; >4 orders of magnitude

In addition to all of the above, AlphaLISA is less affected by interference from hemoglobin than AlphaScreen, making it ideal for testing serum and plasma samples.

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The Principles of Alpha Technology

How the technology works

AlphaScreen and AlphaLISA assays rely on simple assay principles involving matching Alpha Donor and Acceptor beads. These beads are coated with a layer of hydrogel to provide functional groups for bioconjugation.

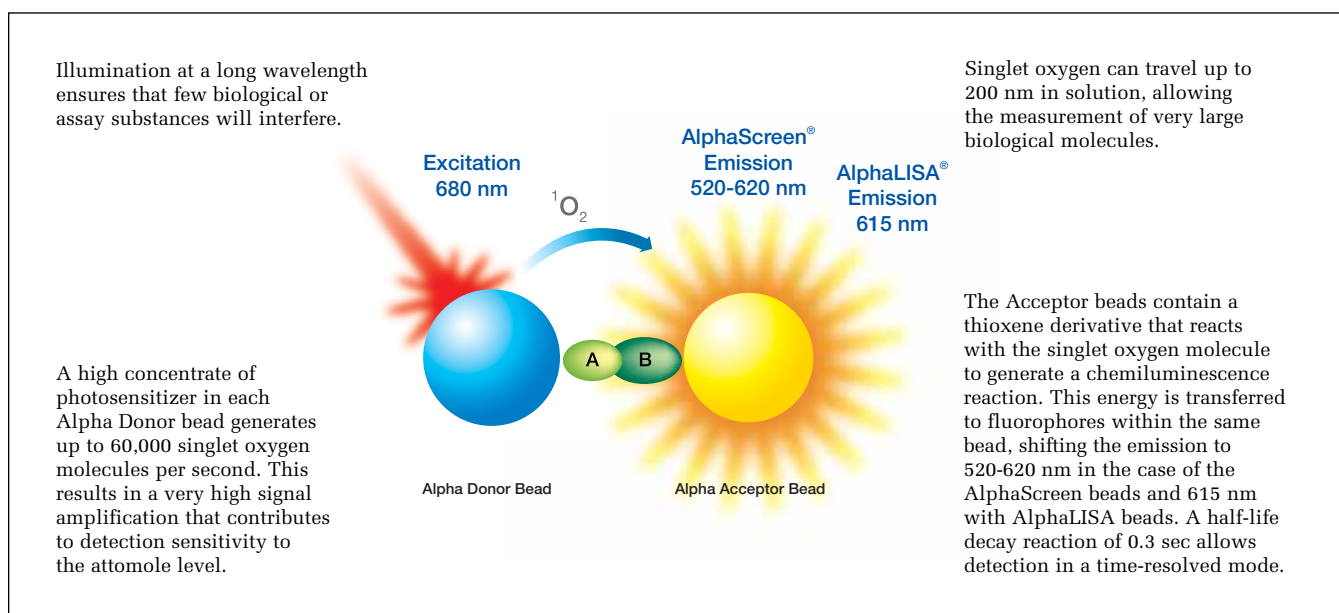
- If a biological reaction brings the Alpha Donor and Acceptor beads into close proximity, upon laser excitation, a cascade of chemical reactions produces a greatly amplified signal.
- Upon laser excitation, a photosensitizer inside the Donor bead converts ambient oxygen to a more excited singlet state. The singlet state oxygen molecules diffuse to produce a chemiluminescent reaction in the Acceptor bead, leading to light emission.
- In the absence of a specific biological interaction, the singlet state oxygen molecules produced by the Donor bead go undetected without the close proximity of the Acceptor bead.

About Alpha beads

Alpha beads are latex-based and coated with a layer of hydrogel that minimizes non-specific binding and self-aggregation. They are approximately 250 nm in diameter. They are much smaller than those of other bead-based assays such as Scintillation Proximity Assay (SPA) beads (2-10 μm) and FMAT (6-20 μm). This means Alpha beads are too small to sediment in biological buffers and bead suspensions can be easily dispensed using automated liquid-handling devices without clogging small tips. Yet they are large enough to be centrifuged and/or filtered following bioconjugation, resulting in a high yield and ease of use.

Each bead contains a different proprietary mixture of chemicals, which are key elements of Alpha technology. Alpha Donor beads contain a photosensitizer, phthalocyanine, which converts ambient oxygen to an excited form of O_2 , singlet oxygen, upon illumination at 680 nm. Within its 4 μsec half-life, singlet oxygen can diffuse approximately 200 nm in solution. This enables excitation of the Alpha Acceptor beads.

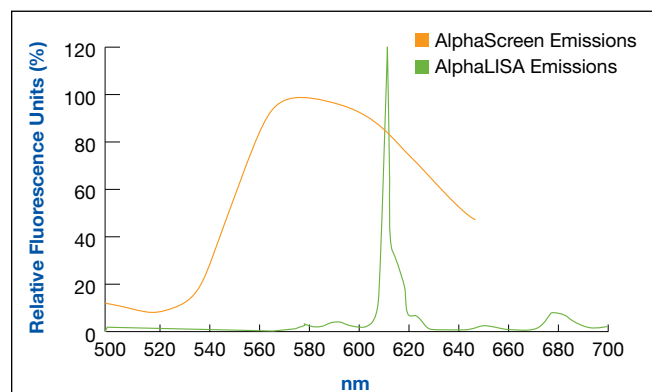
Alpha Technology: Exclusive Bead-based Platforms



About Alpha emissions

When chemiluminescence is generated in the Acceptor bead, energy is transferred to fluorophores, which shift the final emission. The AlphaLISA bead emission is very narrow and brighter in comparison to the AlphaScreen bead.

- AlphaScreen's final emission is from rubrene (520-620 nm)
- AlphaLISA's final emission is from europium (615 nm)



AlphaLISA emissions are narrower and brighter than AlphaScreen emissions. This allows the development of assays in complex samples such as serum and plasma.

Automating Alpha

Due to the small bead size, dispensing is easy. Combine that with no-wash steps and Alpha is ideal for automation. PerkinElmer has already developed a JANUS[®] workstation expressly to automate AlphaLISA.

JANUS Automation Workstation



Measuring emissions: Alpha plates and plate readers

AlphaScreen and AlphaLISA assays can be measured on any PerkinElmer Alpha-enabled plate reader equipped with a dedicated laser for excitation, ambient temperature control and HTS apertures designed to measure the signal straight above the well. Each Alpha technology assay was validated on PerkinElmer's EnVision[®] benchtop reader family of instruments with PerkinElmer OptiPlate[™], AlphaPlate[™], ProxiPlate[™], 1/2 Area Plate or CulturPlate[™] microplates. EnVision with the AlphaScreen option combines unique label-specific mirror modules, high-energy flash lamps and high-speed detectors for the utmost sensitivity, scalability and reliability. Its special laser source excitation provides maximum energy, making EnVision the fastest AlphaScreen reader on the market.

For researchers keen to make the most of their resources, the high-performance EnSpire™ Alpha gives access to AlphaScreen benefits such as lowered compound interference and assay costs and the convenience of no wash ELISA. The EnSpire AlphaPLUS with added absorbance capability allows existing ELISAs to run while converting to Alpha technology.

EnVision and EnSpire AlphaPLUS Multilabel Plate Readers



Alpha technology assays can be measured on Alpha-enabled readers such as the EnVision and EnSpire Alpha.

AlphaPlate-1536



The light gray 1536-well AlphaPlate reduces crosstalk 17x versus conventional white microplates.

Microplates: Complete range, application-focused

PerkinElmer also offers the following microplate technologies validated with Alpha technology:

- **AlphaPlate**—This light-gray plate will reduce crosstalk, up to 17 times lower in the 1536-well format. Available in 384- and 1536-well formats. **Designed specifically for use with Alpha assays.**
- **OptiPlate**—White polystyrene microplates provide excellent light reflection and the highest efficiency with low background for luminescence and fluorescence applications. Available in 24-well to 1536-well formats. Compatible with AlphaScreen and AlphaLISA assays.
- **ProxiPlate**—A shallow well design brings the assay reagents into closer proximity to the reader's detectors and increases signal. Compatible with AlphaScreen and AlphaLISA assays. ProxiPlates are offered in 96- and 384-well formats.
- **1/2 Area Plates**—Designed for the same well depth in a half-well area, which permits a 50% reduction in volume and surface area to significantly conserve samples, reagents and cells without conversion to 384-well or higher density plate formats. Compatible with AlphaScreen and AlphaLISA assays. Available in 96-well format.
- **CulturPlate**—Optimized for work with cell-based applications, providing a sterile, tissue-culture-treated environment with an opaque well bottom. Available in 24-well to 1536-well formats with lids. Compatible with AlphaScreen assays.

When to Use Alpha Technology

Optimal for very large biological molecules and complex interactions

Alpha assays are unique in the degree of proximity allowed between the two binding partners that make up the assay. This has allowed the development of assays detecting very large complexes up to the size of phages. Other homogeneous technologies such as time-resolved fluorescence (TR-FRET) can be limited to smaller molecules. The simple stoichiometry and amplified luminescent signal result in robust and very sensitive assays.

The versatility of Alpha technology offers easy adaptation for a range of assay formats, including competition, association, dissociation, detection and direct and indirect assays. Moreover, Alpha technology offers the possibility to assay many biological interactions, including enzymes, receptor-ligand interactions, low-affinity interactions, second messenger levels, DNA, RNA, proteins, peptides, sugars and small molecules.

Both AlphaScreen and AlphaLISA are ideal for:

- Biochemical and cellular kinases
- Complex biological interactions such as protein-protein interactions
- Low-affinity interactions
- Neutral or highly charged substrates
- No-wash ELISA conversions for analytes such as insulin, VEGF and EPO

In addition, AlphaLISA offers the further benefit of having less interference from signal quenchers such as hemoglobin. This makes it ideal for working with complex samples such as serum and plasma.

Alternatively, PerkinElmer offers LANCE® TR-FRET assays, which are ideal for assaying small molecules such as peptides and cyclic AMP (cAMP), as well as DELFIA® TRF technology, which is perfect for working with a complicated sample matrix as it includes a wash step.

PerkinElmer Immunoassay Technology Comparison

	AlphaScreen/ AlphaLISA	LANCE	DELFI
Detection	Luminescence Proximity	TR-FRET	TRF
Wash Step	No	No	Yes
Throughput	High	Ultra-high	Medium
Automation	★ ★ ★ ★	★ ★ ★ ★	★
Sensitivity	★ ★ ★ ★	★ ★ ★	★ ★ ★ ★
Dynamic Range	2.5-5 logs	2-3 logs	2.5-5 logs
Microplate Formats	96, 384, 1536	96, 384, 1536	96, 384
Multiplexing	No	No	Up to 4-plex
Analyte Sizes	Small molecules to whole cells	Small molecules to peptides	Small molecules to proteins (cells are prone to breaking and washing away during wash procedure)
Sample Complexity	AlphaScreen ★ ★ AlphaLISA ★ ★ ★	★ ★	★ ★ ★ ★
Use of Low-affinity Antibodies	Yes	Limited; impact on data quality	No
Use of Polyclonal Antibodies	Yes	Limited; only special affinity purified Abs	Yes
Reader	EnVision® Alpha, EnSpire™ Alpha, AlphaPLUS	EnVision, VICTOR™, ViewLux™, others	EnVision, VICTOR, ViewLux, others

No-wash AlphaLISA Immunoassay Kits

AlphaLISA saves you time and resources – say

AlphaLISA is the alternative to conventional ELISA. Due to the narrow and bright emission spectra of the unique Alpha technology, AlphaLISA is the most sensitive no-wash, high-throughput assay for small molecules, large proteins and complex samples such as serum and plasma samples.

Easy automation for a broad range of analytes

AlphaLISA is preferable to ELISA for a wide range of applications. Easy to automate and miniaturize, AlphaLISA assays are perfect for analytes requiring a high-throughput format or ultra-sensitivity and a wide dynamic range. The reliable no-wash technology saves your lab time and money.

AlphaLISA immunoassay kits are intended for research purposes only.

AlphaLISA Immunoassay Kits are available in several key therapeutic areas:

Biologics

CHOP, IgG, NSO-P

Angiogenesis

EPO, TNF α , VEGF

Cancer

EGF-R, EPO, PSA, TNF α

Cardiovascular

EPO

Inflammation

COMP, G-CSF, GM-CSF, IFN- γ , IL1 β , IL2, IL3, IL6, IL8, IL10, IL17, TNF α

Metabolic

Adiponectin, GH, GLP-1, Insulin, Leptin, Prolactin

Neurodegeneration

Amyloid β 1-40, Amyloid β 1-42

Virology

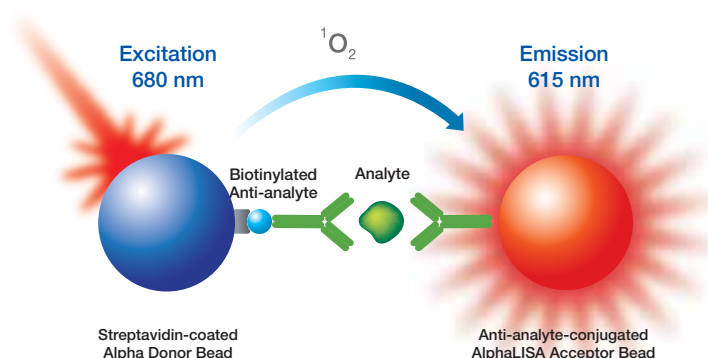
HIV p24

AlphaLISA immunoassay kits

Each AlphaLISA immunoassay kit has five components:

- AlphaLISA Acceptor beads coated with an anti-analyte antibody
- Streptavidin-coated Alpha Donor beads
- Biotinylated anti-analyte antibody
- Lyophilized analyte
- AlphaLISA immunoassay buffer

The kits can be used in a 96-, 384- or 1536-well format.



1. The Alpha Donor bead (blue) is coated with streptavidin which captures the biotinylated antibody.
2. The Acceptor bead (red) is coated with analyte-specific antibody.
3. The beads are brought into proximity through binding to the analyte.
4. When excited by laser at 680 nm, the Alpha Donor bead releases singlet oxygen which travels to the nearby Acceptor bead where it induces emission of light.

good-bye to all those wash steps

Species Selectivity Table								
	Human	Mouse	Rat	Bovine	Porcine	Dog	Chimpanzee	Orangutan
Adiponectin	√	X	X	SS	SS	SS	SS	SS
Amyloid β 1-40	√	√	√	SS	SS	SS	SS	SS
Amyloid β 1-42	√	√	√	SS	SS	SS	SS	SS
COMP	√		X				C	
EGFR	√	X					C	
EPO	√	X	X				C	
G-CSF	√	X					C	
GH	√	X	X				C	
GLP-1	√	√	√	√	√	√	√	√
GM-CSF	√	X	X			X	C	
IFN-γ	√	X	X			X	C	C
IgG	√	X	X					
IL1β	√	X	X				C	
IL2	√	X	X				√	
IL3	√	X	X				C	C
IL6	√	X	X				C	
IL8	√				X	X	√	
IL10	√	X	X				C	C
IL17A	√	X	X				C	
Insulin	√	√	√	√	√	SS	SS	SS
Leptin	√	X	X			X	C	C
Prolactin	√	X	X				C	
PSA	√						C	C
TNFα	√	X	X	X			C	C
VEGF	√	X	X	C	C			

√ = Tested and worked X = Tested did not work C = Close sequence to human (not tested) SS = Same sequence as human (not tested)

Comparison of AlphaLISA with ELISA		
	Conventional ELISA	AlphaLISA
Selectivity	High	High
Sensitivity	Sensitive (pM range)	Highly sensitive (sub-pM)
Assay Nature	Heterogeneous: multiple washings	Homogeneous: no washing
Labor	Very labor-intensive	Limited labor requirement
High Throughput	Difficult to employ	Easy to miniaturize
Antibody Requirement	Requires high-affinity antibodies	Can be used with high- and low-affinity antibodies
Assay Volume	Large, 25-50 μL	Small, >5 μL
Analytical Range	Limited (2 orders of magnitude)	Large (4 orders of magnitude)
Instrumentation	Standard microplate reader	Alpha-enabled EnVision plate reader with laser

Fully optimized Kits

in two Convenient formats

AlphaLISA kits are fully optimized with enough reagents for either 500 or 5,000 assay points. Larger quantities can be ordered as bulk.

AlphaLISA Adiponectin immunoassay kit

Adiponectin is a hormone secreted by differentiated adipocytes that regulates energy homeostasis and glucose and lipid metabolism. It is expressed as a ~35 kDa protein. It has been demonstrated that Adiponectin plays a major role in controlling whole-body metabolism, particularly by enhancing insulin sensitivity in muscle and liver, and by augmenting the oxydation of fatty acids in muscle.

This kit is designed for the quantitative determination of total human Adiponectin in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 45.5 pg/mL
- Dynamic range 45.5-1,000,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In Fetal Bovine Serum:

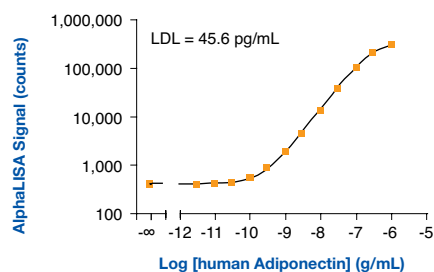
- Lower detection limit (LDL) 32.4 pg/mL
- Dynamic range: 32.4-1,000,000 pg/mL

*For research use only.

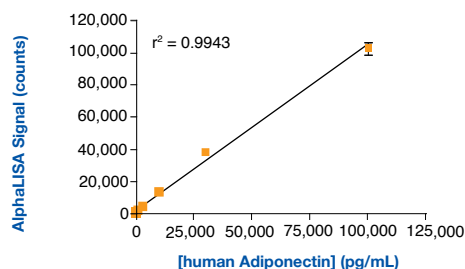
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA Adiponectin kit was tested against the following analytes:

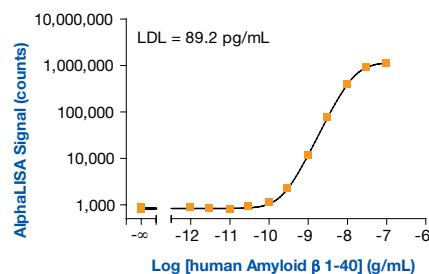
Analyte	Cross-reactivity
Human Globular Adiponectin (0.3 µg/mL)	60%
Mouse Adiponectin (1 µg/mL)	0%
Rat Adiponectin (1 µg/mL)	0%

AlphaLISA Amyloid β 1-40 and Amyloid β 1-42 immunoassay kits*

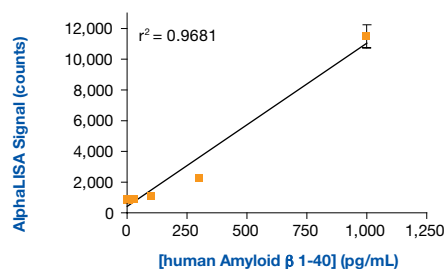
Amyloid peptides result from the cleavage of the amyloid precursor protein (APP), a type-I TM protein with a splice variant of 695 aa expressed in neuronal tissue. The Amyloid β 1-40 (A β 40) and β 1-42 (A β 42) are generated by the cleavage of APP between aa 671-672 by β secretase followed by cleavage in the transmembrane domain by γ -secretase between aa 713-714 for A β 40 and aa 715-716 for A β 42 (with the occasional synthesis of -39 and -43mers). In physiological conditions, the ratio between the two major forms A β 40/A β 42 is around 10:1. It has been proposed that an increased ratio to 5:1 leads to aggregation of the peptides at the level of cell surface membranes and plaque formation associated with Alzheimer's disease.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA Amyloid β 1-40 kit was tested against the following analytes:

Analyte	Cross-reactivity
Mouse Amyloid β 1-40	94%
Rat Amyloid β 1-40	94%
Human Amyloid β 1-42	0%

Note: Amyloid β 1-40 from bovine, porcine, dog, rabbit, chimpanzee and orangutan were not tested but show the same amino acid sequence as the human Amyloid β 1-40.

AlphaLISA Amyloid β 1-40 and Amyloid β 1-42 immunoassay kits* (continued)

These kits are designed for the quantitative determination of human Amyloid β 1-40 or Amyloid β 1-42 in serum, buffered solution or cell culture medium. They can also detect Amyloid β 1-40 or Amyloid β 1-42 from other species.

Average Results

In AlphaLISA immunoassay buffer for Amyloid β 1-40:

- Lower detection limit: 0.088 ng/mL (88 pg/mL)
- Dynamic range: 0.088-100 ng/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum for Amyloid β 1-40:

- Lower detection limit: 101 pg/mL
- Dynamic range: 101-100,000 pg/mL

In AlphaLISA immunoassay buffer for Amyloid β 1-42:

- Lower detection limit: 0.3 ng/mL (300 pg/mL)
- Dynamic range: 0.3-300 ng/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum for Amyloid β 1-42:

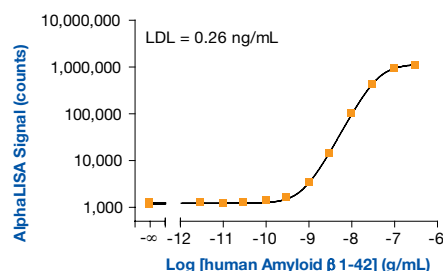
- Lower detection limit: 350 pg/mL
- Dynamic range: 350-300,000 pg/mL

*For research use only.

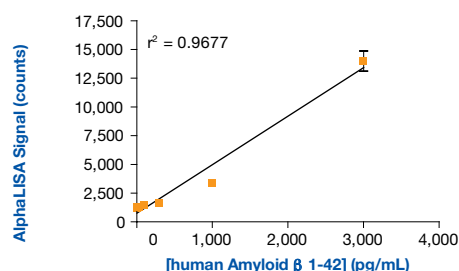
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA Amyloid β 1-42 kit was tested against the following analytes:

Analyte	Cross-reactivity
Mouse Amyloid β 1-42	110%
Rat Amyloid β 1-42	110%
Human Amyloid β 1-40	0.1%

Note: Amyloid β 1-42 from bovine, porcine, dog, rabbit, chimpanzee and orangutan were not tested but show the same amino acid sequence as the human Amyloid β 1-42.

AlphaLISA CHO Host Cell Protein immunoassay kit

CHO (Chinese Hamster Ovary) cells are commonly utilized as an expression system for the production of human recombinant proteins at industrial scale. However, since very frequently these proteins are intended to be used as therapeutics for humans, they must be subsequently purified to remove undesired contaminants that could elicit toxic or immunological reactions. Therefore, there is a current need to quantitate and trace these unwanted host cell proteins in protein preparations with excellent sensitivity and robustness, while maintaining high throughput capabilities.

This kit is designed for the quantitative determination of CHO host cell proteins in buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 181 pg/mL
- Dynamic range: 181-300,000 pg/mL

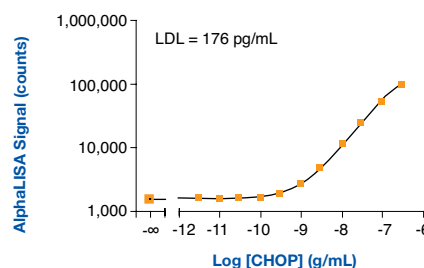
Sensitivity can be increased by increasing the volume of analyte in the assay.

*For research use only.

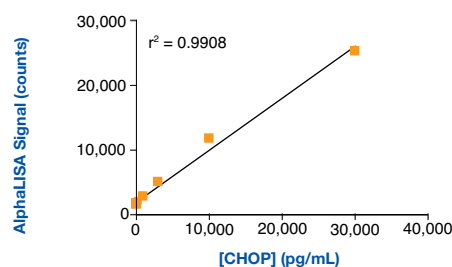
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA CHOP kit was tested against the following analyte at 1 µg/mL:

Analyte	Cross-reactivity
NSO-P	6.1%

AlphaLISA COMP immunoassay kit*

Cartilage Oligomeric Matrix Protein (COMP) is a 524 kDa protein member of the thrombospondin gene family that is expressed at high levels in the territorial matrix of chondrocytes. Several mutations on this gene are known to cause such forms of skeletal dysplasias as pseudoachondroplasia (PSACH) and multiple epiphyseal dysplasia (MED).

This kit is designed for the quantitative determination of human COMP in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps). COMP is also known as Thrombospondin 5.

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 1.0 ng/mL
- Dynamic range: 1.0-3,000 ng/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In Fetal Bovine Serum:

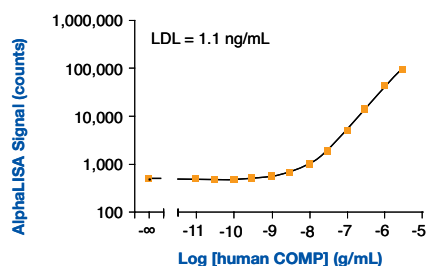
- Lower detection limit (LDL): 1.5 ng/mL
- Dynamic range: 1.5-3,000 ng/mL

*For research use only.

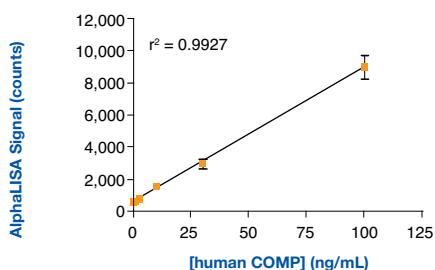
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA COMP kit was tested against the following analytes at 3 µg/mL:

Analyte	Cross-reactivity
Rat COMP	0%
Human Thrombospondin-1	0.5%
Human Thrombospondin-2	0%
Human Thrombospondin-4	0.3%

AlphaLISA EGFR immunoassay kit

The Epidermal Growth Factor Receptor (EGFR), encoded by the HER1/ErbB1 gene in humans, is a 170 kDa membrane-bound glycoprotein (1186 aa) found on the surface of epithelial cells and also present, at lower concentrations, in many other cell types. EGFR forms part of a family of four receptor-tyrosine kinases, consisting of EGFR/ErbB1, HER2/ErbB2, HER3/ErbB3 and HER4/ErbB4. EGFR is activated when its ligand, being the Epidermal Growth Factor (EGF) and the Transforming Growth Factor (TGF), the two most important ones, binds to the extracellular domain triggering dimerization and autophosphorylation of the intracellular tyrosine kinase domain. These events initiate signal transduction cascades eventually leading to cell proliferation. Constant activation of this proto-oncogene could result in changes in cell adhesion and uncontrolled cell division, and mutations that lead to EGFR overexpression or hyperactivity have been associated with lung, breast, head and neck, colon, prostate, cervix and esophagus cancers.

This kit is designed for the quantitative determination of human EGFR in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps). EGFR is also known as ErbB1 and Her1.

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 127 pg/mL
- Dynamic range: 127-1,000,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In Fetal Bovine Serum:

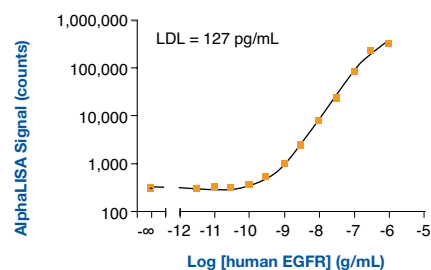
- Lower detection limit (LDL): 75.8 pg/mL
- Dynamic range: 75.8-1,000,000 pg/mL

*For research use only.

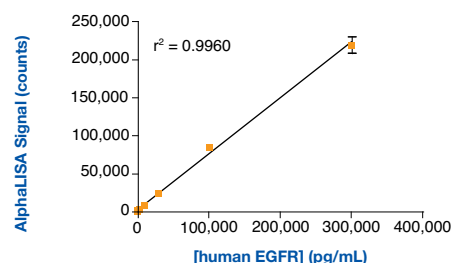
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA EGFR kit was tested against the following analytes at 1 µg/mL:

Analyte	Cross-reactivity
Mouse HER1	0%
Human HER2	0%
Human HER3	0%
Human HER4	0%

AlphaLISA EPO immunoassay kit

Human Erythropoietin hormone is a 34 kDa glycoprotein produced by kidney cells which are sensitive to oxygen levels in the blood and release EPO upon decreased oxygen levels in the blood. EPO in the bone marrow then stimulates differentiation and development of red blood cells and initiates the production of hemoglobin, thereby increasing the oxygen-carrying capacity of the blood.

This kit is designed for the quantitative determination of human EPO in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit: 1.0 mIU/mL
- Dynamic range: 1-30,000 mIU/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

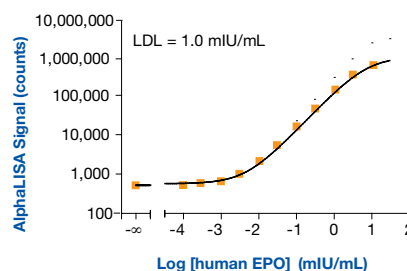
- Lower detection limit (LDL): 5.8 mIU/mL
- Dynamic range: 5.8-30,000 mIU/mL

*For research use only.

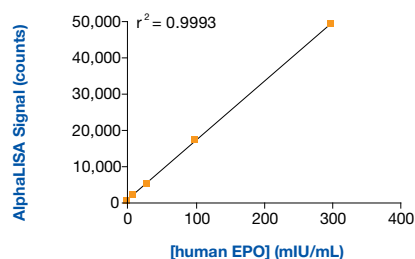
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA EPO kit was tested against the following analytes:

Analyte	Cross-reactivity
Mouse EPO	0%
Rat EPO	0%

AlphaLISA G-CSF immunoassay kit

Granulocyte Colony-stimulating Factor, G-CSF (also named Colony Stimulating Factor-3, CSF3), is a 20 kDa cytokine that specifically stimulates the proliferation and differentiation of the progenitor cells of granulocytes. It has been shown to reverse the neutropenia associated with cytotoxic chemotherapy in bone marrow and haemopoietic stem cell transplantation. It's also a powerful stimulus of resistance to infections, including enhanced phagocytosis, killing of microorganisms and the production of pharmacologically active products by mature granulocytes and macrophages.

This kit is designed for the quantitative determination of human G-CSF in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps). G-CSF is also known as CSF3.

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 14.1 pg/mL
- Dynamic range: 14.1-300,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

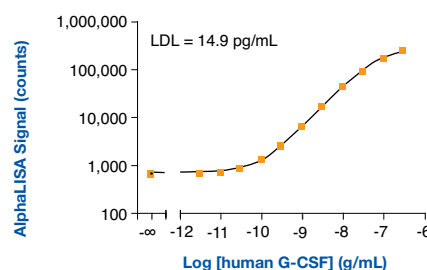
- Lower detection limit (LDL): 68.5 pg/mL
- Dynamic range: 68.5-300,000 pg/mL

*For research use only.

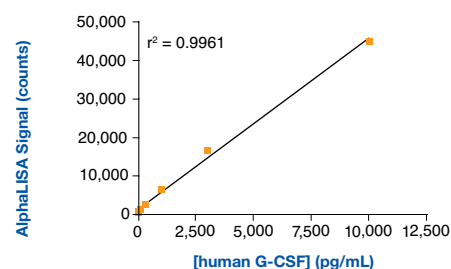
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA G-CSF kit was tested against the following analyte at 0.3 µg/mL:

Analyte	Cross-reactivity
Mouse G-CSF	2.7%

AlphaLISA GH immunoassay kit

Human Growth Hormone (GH, GHN or GH1) is the major regulator of postnatal growth, having somatogenic, metabolic and differentiative effects on its target cells and tissues. It is a 22 kDa protein (191 amino acids) belonging to a family of cytokine peptides, and is produced and secreted by acidophilic or somatotrophic cells of the anterior pituitary gland. GH binds to its cognate transmembrane receptor (GHR), and signals through the activation of JAKs, STATs, AKT and ERK. It exerts many of its effects by stimulation of IGF-1 (Insulin-like Growth Factor I) production in liver and peripheral tissues. Human GH can also be detected in urine, a finding that could be helpful in diagnosing certain GH deficiencies.

This kit is designed for the quantitative determination of human GH in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 5.3 pg/mL
- Dynamic range: 5.3-100,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

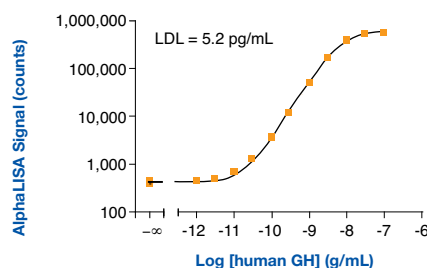
- Lower detection limit (LDL): 13.4 pg/mL
- Dynamic range: 13.4-100,000 pg/mL

*For research use only.

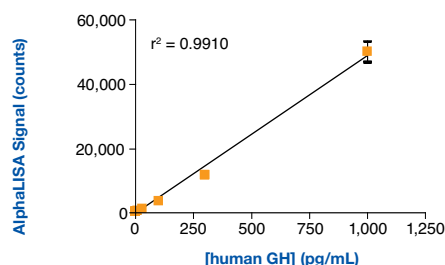
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA GH kit was tested against the following analytes at 0.3 µg/mL:

Analyte	Cross-reactivity
Mouse GH	0%
Rat GH	0%

AlphaLISA GLP-1 immunoassay kit

The Glucagon-like Peptide-1 (GLP-1) is a 30-31 oligopeptide, generated from proglucagon, secreted by the enteroendocrine L cells of the small and large intestine, in a nutrient-dependent manner (some GLP-1 is also produced by the pancreatic β -cells and in the central nervous system). Circulating GLP-1 levels rapidly increase shortly after ingestion, playing a significant role in the inhibition of gastric emptying and food intake. It is also important for blood glucose homeostasis through the stimulation of insulin biosynthesis and secretion, islet proliferation and the inhibition of glucagon secretion. Moreover, it regulates hypothalamic-pituitary function and GLP-1-activated circuits mediate the central nervous system response to aversive stimulation. In the circulation, the active form of GLP-1 (GLP-1 (7-36 amide)) is promptly inactivated by the dipeptidyl peptidase IV (DP IV).

This kit is designed for the quantitative determination of human GLP-1 (7-36 amide) in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps). It can also detect GLP-1 (7-36 amide) from other species.

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 27.2 pg/mL
- Dynamic range: 27.2-30,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

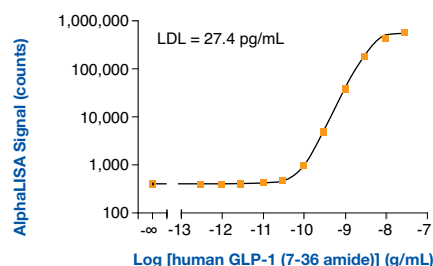
- Lower detection limit (LDL): 65.5 pg/mL
- Dynamic range: 65.5-30,000 pg/mL

*For research use only.

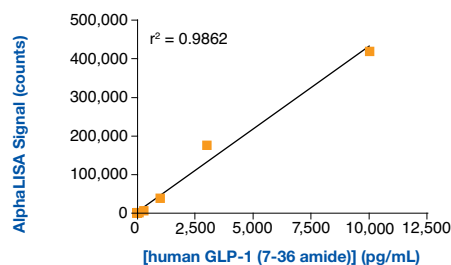
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA GLP-1 (7-36 amide) kit was tested against the following analytes at 0.03 μ g/mL:

Analyte	Cross-reactivity
Chicken/Turkey GLP-1 (7-36 amide)	1.4%
Human GLP-1 (7-37)	0%
Human GLP-1 (1-36 amide)	0%
Human GLP-1 (1-37)	0%
Human GLP-1 (9-36 amide)	0%
Human GLP-2 (1-34)	0%

Note: GLP-1 (7-36 amide) from mouse, rat, guinea pig, dog, bovine and porcine were not tested but show the same amino acid sequence as the human GLP-1 (7-36 amide).

AlphaLISA GM-CSF immunoassay kit*

Colony-stimulating Factors (CSFs) are proteins necessary for the survival, proliferation and differentiation of hematopoietic progenitor cells. The human Granulocyte/Macrophage colony-stimulating factor (GM-CSF) is a ~23 kDa glycosylated protein (144 aa), encoded by the CSF2 gene. It has been originally purified from culture media conditioned by lung tissue from endotoxin-injected mice, having the capacity to stimulate the formation of both granulocyte and macrophage colonies.

This kit is designed for the quantitative determination of human GM-CSF in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps). GM-CSF is also known as CSF2.

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 1.6 pg/mL
- Dynamic range: 1.6-10,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

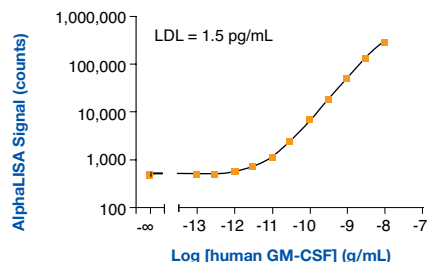
- Lower detection limit (LDL): 12.2 pg/mL
- Dynamic range: 12.2-10,000 pg/mL

*For research use only.

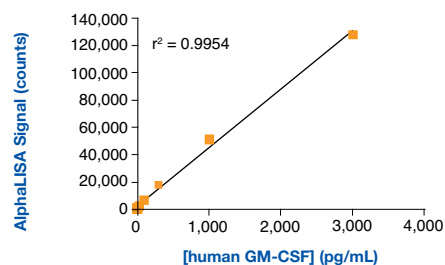
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA GM-CSF kit was tested against the following analytes at 0.03 µg/mL:

Analyte	Cross-reactivity
Mouse GM-CSF	0%
Rat GM-CSF	0%
Canine GM-CSF	0%

AlphaLISA HIV-p24 immunoassay kit*

HIV-p24 is the 230 aa phosphorylated protein of the Human Immunodeficiency Virus type 1 capsid forming the conical core of the virus that encapsulates the genomic RNA-nucleocapsid complex. p24 is a cleavage product of the Gag polyprotein (between aa 132-133 and aa 363-364) by viral proteases.

This kit is designed for the quantitative determination of HIV-p24 in buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

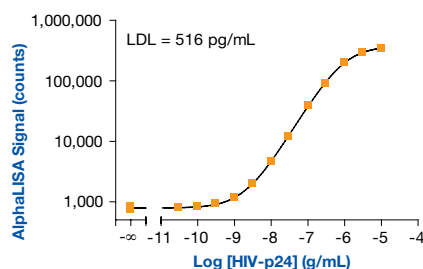
In AlphaLISA immunoassay buffer:

- Lower detection limit: 525 pg/mL
- Dynamic range: 0.525-3,000 ng/mL

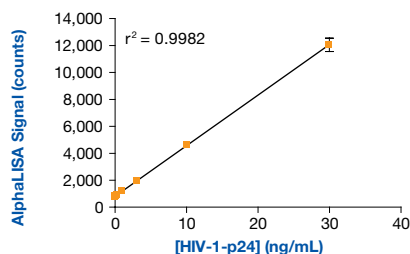
Sensitivity can be increased by increasing the volume of analyte in the assay.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA HIV-p24 kit was not tested against other analytes.

*For research use only.

The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Don't see what you need? We can help.

In addition to our fully validated kits, we offer a tool box that includes individual beads for developing your own AlphaLISA assays (please see page 46).

Our list of fully optimized kits is rapidly expanding. If your analyte of choice is not listed, please check with your PerkinElmer representative, as it might be in development. If not, please ask about OnPoint Reagent Services; our assay development scientists can assist you in developing a custom, fully optimized assay that meets your specific requirements.

AlphaLISA IFN- γ immunoassay kit

Interferons (IFNs) activity has been discovered due to their antiviral effects. In humans, there are three families of IFNs: IFN type I, (IFN- α , β , ω , ϵ , κ) IFN type II (one single representative, IFN- γ) and IFN type III (IFN- λ 1-3). Antigens and mitogens stimulate in Natural Killer (NK) and activated helper T lymphocytes (Th1) the production of IFN- γ . Human IFN- γ is a 140-amino-acid polypeptide that shows multiple effects; it induces the production of cytokines, upregulates the expression of class I and II MHC antigens, and leukocyte adhesion molecules. It also activates macrophages, enhances the secretion of immunoglobulins by B cells and potentiates Th1 cell expansion. Response to IFN- γ is mediated by the heterodimeric IFN- γ Receptor, triggering a signaling cascade involving JAK1, JAK2 and STAT1. Importantly, IFNs have been proved to be effective in the treatment of several viral infections and cancers.

This kit is designed for the quantitative determination of human IFN- γ in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA HiBlock buffer:

- Lower detection limit (LDL): 10.6 pg/mL
- Dynamic range: 10.6-100,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

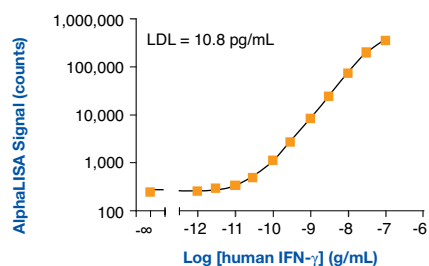
- Lower detection limit (LDL): 7.9 pg/mL
- Dynamic range: 7.9-100,000 pg/mL

*For research use only.

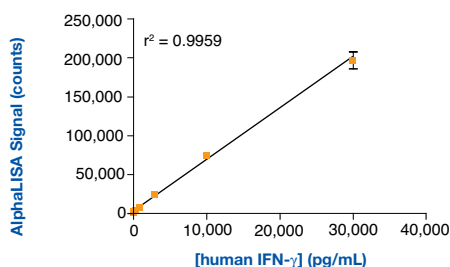
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA IFN- γ kit was tested against the following analyte at 0.3 μ g/mL

Analyte	Cross-reactivity
Mouse IFN- γ	0%
Rat IFN- γ	0%
Canine IFN- γ	0%
Rhesus Macaque IFN- γ	0%

The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

AlphaLISA IgG immunoassay kit

The glycoprotein immunoglobulin G (IgG), a major effector molecule of the humoral immune response in humans, accounts for about 75% of the total immunoglobulins in plasma of healthy individuals whereas IgM, IgA, IgD and IgE, each of which has characteristic properties and functions, constitute the remaining 25%. The basic IgG molecule has a four-chain structure, comprising two identical heavy (H) chains and two identical light (L) chains, linked together by inter-chain disulfide bonds. Four IgG subclasses have been identified showing their most conspicuous differences in the amino acid composition and structure of the “hinge region.” This kit recognizes total IgG’s Fc_γ fragment.

This kit is designed for the quantitative determination of human IgG Fc_γ fragment in buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit: 0.24 ng/mL
- Dynamic range: 0.24-1,000 ng/mL

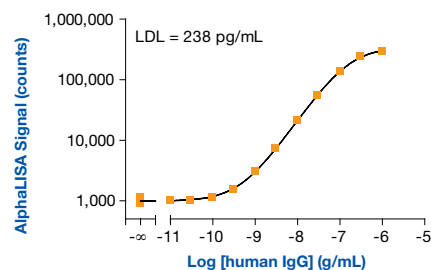
Sensitivity can be increased by increasing the volume of analyte in the assay.

*For research use only.

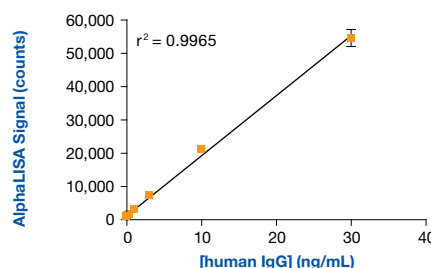
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA Human IgG kit was tested against the following analytes:

Analyte	Cross-reactivity
Mouse IgG	0%
Rat IgG	0%
Bovine IgG	0%
Goat IgG	0%
Rabbit IgG	0.9%

AlphaLISA IL1 β immunoassay kit

IL1 α and IL1 β are central players of the immune response, displaying roles in inflammation both at local and systemic levels. Despite they seem to display very similar functions, these proteins are encoded by two independent genes sharing only ~30% identity. IL1 β is synthesized as a 31 kDa precursor that is cleaved by Caspase-1 (ICE) into the active 17 kDa form, and eventually released into the extracellular space. Its production has been reported in many cell types including brain and, importantly, monocytic and peripheral blood mononuclear cells. After binding to its receptor, IL-1RI, IL1 β triggers a cascade of kinase signaling pathways that lead to the activation of transcription factors like NF- κ B and AP-1, eventually activating the expression of genes such as MIP-2 and C-reactive protein.

This kit is designed for the quantitative determination of human IL1 β in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 0.65 pg/mL
- Dynamic range: 0.65-30,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

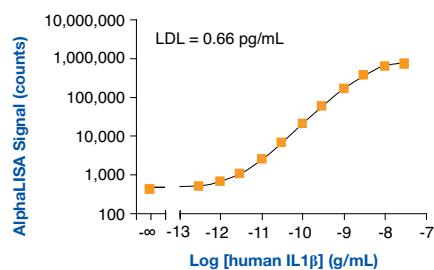
- Lower detection limit (LDL): 4.0 pg/mL
- Dynamic range: 4.0-30,000 pg/mL

*For research use only.

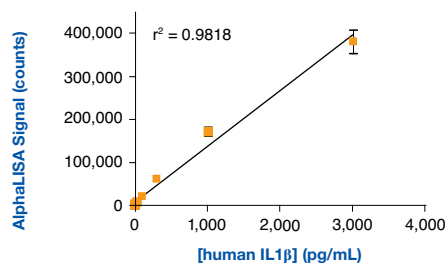
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA IL1 β kit was tested against the following analytes at 0.03 μ g/mL:

Analyte	Cross-reactivity
Mouse IL1 β	33%
Rat IL1 β	6%
Human IL1 β	0%

AlphaLISA IL2 immunoassay kit*

Interleukin 2 (IL2), formerly known as T-cell Growth Factor (TCGF), is a 15 kDa immunoregulatory lymphokine known to be produced by lectin- or antigen-activated T cells and capable of inducing the thymic expansion of recently activated antigen-specific T lymphocytes. However, since T-cell immunity could be elicited to various agents in the absence of IL2 in vivo, it is currently thought that the main non-redundant activity of this cytokine is the induction of the suppressor function of CD4+CD25+ regulatory T cells (Treg) in peripheral lymph nodes to ensure suppression of autoreactive T cells that escape negative selection. Moreover, recent findings suggest that IL2-mediated regulation of Treg cells is important in the prevention of type 1 diabetes and autoimmune disease.

This kit is designed for the quantitative determination of human IL2 in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 1.8 pg/mL
- Dynamic range: 1.8-100,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

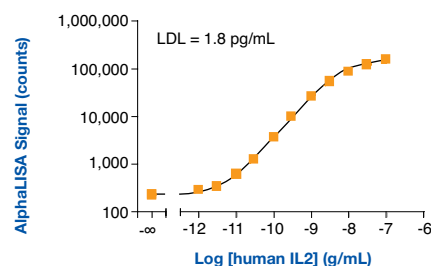
- Lower detection limit (LDL): 22.2 pg/mL
- Dynamic range: 22.2-100,000 pg/mL

*For research use only.

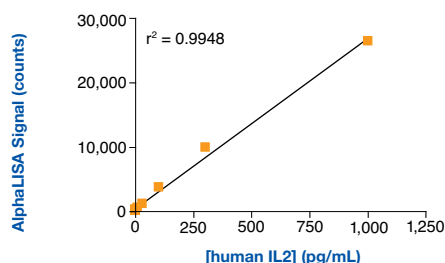
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA IL2 kit was tested against the following analytes at 0.3 µg/mL:

Analyte	Cross-reactivity
Mouse IL2	0%
Rat IL2	0%

AlphaLISA IL3 immunoassay kit

Interleukin 3 (IL3) is a hematopoietic colony-stimulating factor that induces the proliferation and differentiation of several hematopoietic/lymphoid cell types and also has neurotrophic activity. It is a ~28 kDa glycoprotein (133-140 amino acids long) produced by antigen-activated T cells, eosinophils and mast cells in tissues under allergic inflammation. IL3 has been given several designations such as mast-cell growth factor, burst-stimulating activity and multi-colony-stimulating factor because of its potent growth-promoting activities. IL3 signals via the IL3R which shares a common signal transducing chain with IL5 and GM-CSF. However, their effects are not identical, suggesting they may activate substantially different pathways. It has been shown to enhance hematopoiesis in different animal models, and to accelerate platelet and neutrophil recovery in humans after myelotoxic chemotherapy or bone marrow transplantation.

This kit is designed for the quantitative determination of human IL3 in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA HiBlock immunoassay buffer:

- Lower detection limit (LDL): 11.3 pg/mL
- Dynamic range: 11.3-300,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

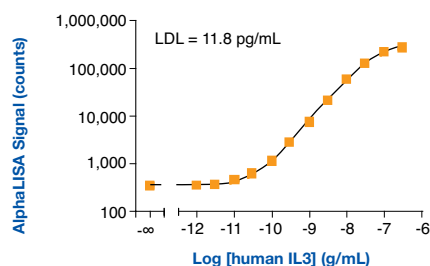
- Lower detection limit (LDL): 13.4 pg/mL
- Dynamic range: 13.4-300,000 pg/mL

*For research use only.

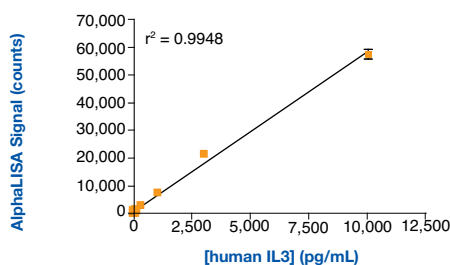
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA IL3 kit was tested against the following analytes at 0.3 µg/mL:

Analyte	Cross-reactivity
Mouse IL3	0%
Rat IL3	0%

AlphaLISA IL6 immunoassay kit*

Interleukin 6 (IL6) is a ~22 kDa pleiotropic cytokine that acts not only on the immune system, but also affects many physiological events in various organs. IL6 exerts pro- or anti-inflammatory effects, depending on the target cell analyzed and the in vivo environmental circumstances. IL6 is a differentiation and proliferation factor for B and T cells, and acts as a migration factor on monocytic cells. It is the major activator of acute-phase protein expression in the liver, a hematopoietic factor and acts as a survival factor on neuronal cells. IL6 signals through binding to the gp130/IL-6R receptor complex, leading to the activation of JAK/STAT, MAPK and PI3K cascades.

This kit is designed for the quantitative determination of human IL6 in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 1.3 pg/mL
- Dynamic range: 1.3-30,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

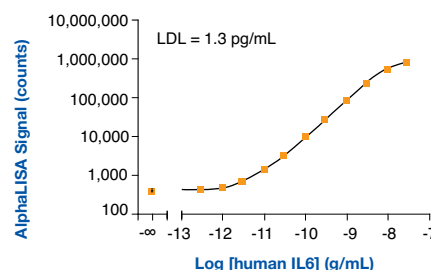
- Lower detection limit (LDL): 8.6 pg/mL
- Dynamic range: 8.6-30,000 pg/mL

*For research use only.

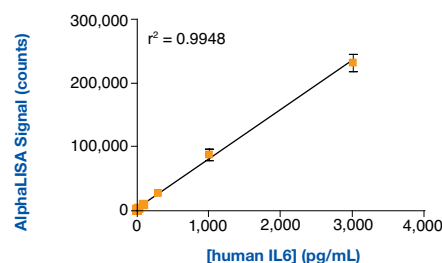
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA IL6 kit was tested against the following analytes at 0.1 µg/mL:

Analyte	Cross-reactivity
Mouse IL6	0%
Rat IL6	0%

AlphaLISA IL8 immunoassay kit*

Interleukin 8 (IL8), a member of the ELR+ CXC chemokine family, is an 8.4 kDa polypeptide that forms homodimers in vivo. IL8 is secreted by several types of cells: fibroblasts, monocytes, macrophages and endothelial cells, among many others, in response to inflammatory stimuli. It is a chemoattractant and activator for neutrophils, directing them from peripheral blood to the site of inflammation. It is also a potent angiogenic factor promoting endothelial and epithelial migration and proliferation in several cancers, and is associated with metastasis. It signals through two specific G protein-coupled receptors, CXCR1 and CXCR2, sharing ~77% identity.

This kit is designed for the quantitative determination of human IL8 in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps). IL8 is also known as CXCL8.

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 1.1 pg/mL
- Dynamic range: 1.1-30,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

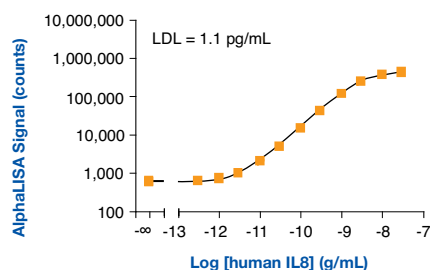
- Lower detection limit (LDL): 0.91 pg/mL
- Dynamic range: 0.91-30,000 pg/mL

*For research use only.

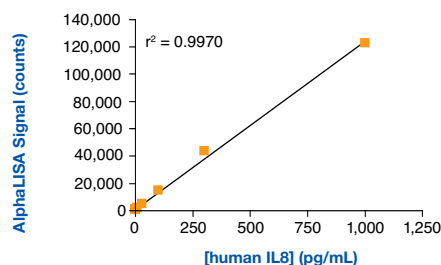
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA IL8 kit was tested against the following analytes at 0.03 μ g/mL:

Analyte	Cross-reactivity
Porcine IL8	0.1%
Canine IL8	0%

AlphaLISA IL10 immunoassay kit

Human Interleukin 10 (IL10) is a homodimer composed of two subunits of 18 kDa each. It is produced by various T cells populations, monocytes, macrophages and different cell types in the liver when stimulated by endogenous or exogenous factors such as stress, exotoxins, tumor necrosis factor- γ and catecholamines. IL10 inhibits interferon- γ synthesis in Th1 cell clones, monocytes and macrophages, antigen presentation to T cells and IL12 production by monocytes. It also impairs the proliferation and cytokine synthesis of CD4+ T cells, without having a direct inhibitory effect on CD8+ T cells. On the other hand, IL10 has a stimulatory effect on B cells, prevents apoptosis and enhances proliferation and differentiation of plasma cells, and inhibits the release of various chemokines by neutrophils. In general, IL10 main biological functions seem to limit and terminate the inflammatory responses, block pro-inflammatory cytokine secretion, and regulate the differentiation and proliferation of several immune cells. IL10 activity is mediated by the heteromeric IL10 receptor (IL-10R), and signals through the tyrosine kinases JAK1 and TYK2 and STATs.

This kit is designed for the quantitative determination of human IL10 in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA HiBlock buffer:

- Lower detection limit (LDL): 39.2 pg/mL
- Dynamic range: 39.2-300,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

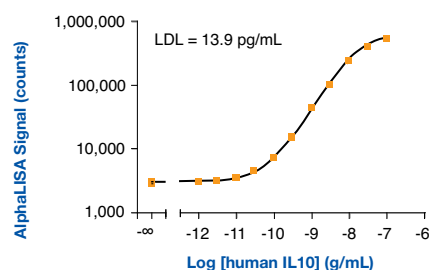
- Lower detection limit (LDL): 13.9 pg/mL
- Dynamic range: 13.9-300,000 pg/mL

*For research use only.

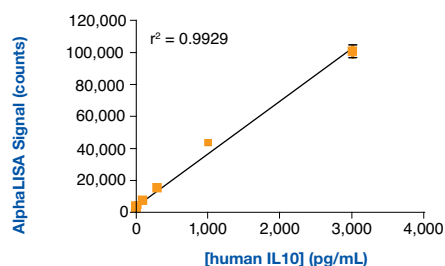
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA IL10 kit was tested against the following analytes at 0.3 μ g/mL:

Analyte	Cross-reactivity
Mouse IL10	0%
Rat IL10	0%

AlphaLISA IL17 immunoassay kit*

Human Interleukin 17 (IL17) is a homodimer formed of two ~15 kDa subunits produced by a subset of T helper cells named Th17. It is a pro-inflammatory cytokine that enhances T cell priming and stimulates macrophages, fibroblasts, and endothelial and epithelial cells to produce multiple mediators of inflammation like IL1, IL6, TNF α , NOS-2, metalloproteases and chemokines. IL17 has been involved in the pro-inflammatory patterns associated with joint inflammation and rheumatoid arthritis (RA) in mouse and human models. It is also critical for neutrophil activation and migration, and induces IL8, a key chemokine for neutrophils. IL17 signals through IL-17R, which in mice has at least two members, IL-17RA and IL-17RC. Recent studies suggest that the IL17 pathway may be a novel therapeutic target for the treatment of chronic inflammatory diseases like asthma and RA.

This kit is designed for the quantitative determination of human IL17 in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 14.1 pg/mL
- Dynamic range: 14.1-300,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

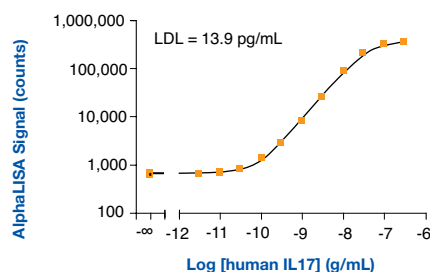
- Lower detection limit (LDL): 20.3 pg/mL
- Dynamic range: 20.3-300,000 pg/mL

*For research use only.

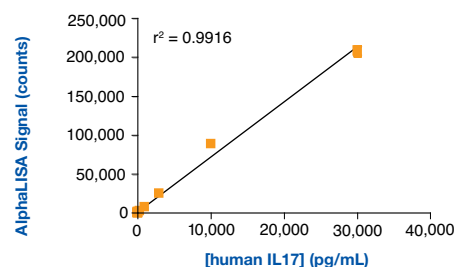
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA IL17 kit was tested against the following analytes at 0.3 μ g/mL:

Analyte	Cross-reactivity
Mouse IL17	0%
Rat IL17	0%
Human IL-17B	0%
Human IL-17C	0%
Human IL-17D	0%
Human IL-17E	0%
Human IL-17F	0%

AlphaLISA Insulin immunoassay kit

Insulin is a key player in the control of both carbohydrate and lipid metabolism and has been implicated in various diseases including diabetes, heart disease and obesity.

This kit is designed for the quantitative determination of human insulin in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps). It can also detect insulin from other species.

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit: 0.8 μ IU/mL (26.6 pg/mL)
- Dynamic range: 0.8-3,000 μ IU/mL (0.027-100 ng/mL)

Sensitivity can be increased by increasing the volume of analyte in the assay.

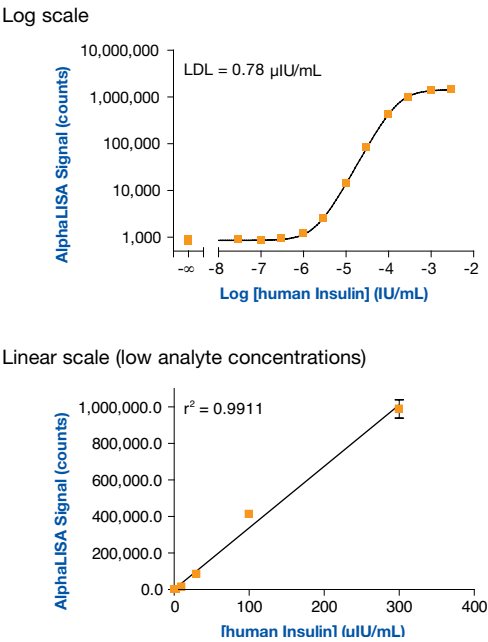
In analyte-depleted serum:

- Lower detection limit (LDL): 1.3 μ IU/mL (43.2 pg/mL)
- Dynamic range: 1.3-3,000 μ IU/mL (0.043-100 ng/mL)

*For research use only.

The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results



Specificity

The AlphaLISA Insulin kit was tested against the following analytes:

Analyte	Cross-reactivity
Mouse Insulin	100%
Rat Insulin	100%
Bovine Insulin	87%
Porcine Insulin	97%

Note: Insulin from dog, rabbit, chimpanzee and orangutan were not tested but show the same amino acid sequence as human insulin.

AlphaLISA Leptin immunoassay kit*

Leptin is a 16 kDa hormone secreted by differentiated adipocytes. It regulates energy homeostasis as a result of its action on the brain via hypothalamic neuronal pathways expressing the leptin receptor (LR). Hereditary deficiency of leptin, or functional LRs, causes severe obesity in humans and mice. Leptin-mediated signaling has been implicated in the regulation of food intake, energy expenditure, lipid and carbohydrate metabolism, and reproductive, neuroendocrine, thyroid, and immune function.

This kit is designed for the quantitative determination of human leptin in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 49.8 pg/mL
- Dynamic range: 49.8-100,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In Fetal Bovine Serum:

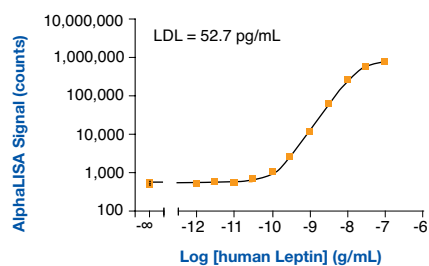
- Lower detection limit (LDL): 34.1 pg/mL
- Dynamic range: 34.1-100,000 pg/mL

*For research use only.

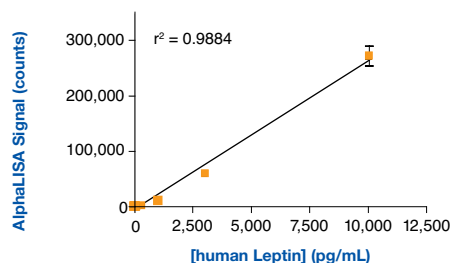
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA Leptin kit was tested against the following analytes at 0.1 µg/mL:

Analyte	Cross-reactivity
Mouse Leptin	2.0%
Rat Leptin	0.9%
Dog Leptin	0%

AlphaLISA NSO-P immunoassay kit

NSO murine hybridoma cells are commonly utilized as an expression system for the production of human recombinant proteins and monoclonal antibodies at industrial scale. As therapeutic agents for humans, they must be subsequently purified to remove undesired contaminants that could elicit toxic or immunological reactions. Therefore, there is a current need to quantitate and trace these unwanted host cell proteins in protein preparations with excellent sensitivity and robustness, while maintaining high throughput capabilities.

This kit is designed for the quantitative determination of NSO host cell proteins in buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA HiBlock buffer:

- Lower detection limit (LDL): 1.6 ng/mL
- Dynamic range: 1.6-1,000 ng/mL

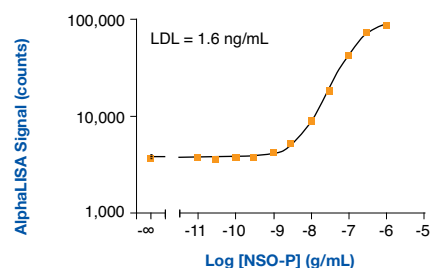
Sensitivity can be increased by increasing the volume of analyte in the assay.

*For research use only.

The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



AlphaLISA Prolactin immunoassay kit

Prolactin (PRL) is an endocrine factor primarily synthesized in the lactotrophs of the anterior pituitary but its production has also been proved in placenta, mammary epithelium and cancers, spleen, sweat gland, bone marrow, thymus, hypothalamus, skin fibroblasts and lymphocytes. PRL has several functions and auto-crine and paracrine mechanisms have been shown. It stimulates growth, development and differentiation of breast epithelial cells, and promotes and maintains lactation during pregnancy and suckling. It also inhibits lipoprotein lipase activity in adipose tissue, shows angiogenic effects and plays a role in the proliferation and differentiation of lymphocytes. The main form of human PRL is a 22 kDa globular protein (199 amino acids), but post-transcriptional and post-translational modifications such as alternative splicing, glycosylation and proteolytic cleavage have been reported, leading to several forms from 14 to 23 kDa. PRL exerts its function through binding to the PRL Receptor (PRLR) present in numerous tissues.

This kit is designed for the quantitative determination of human prolactin in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 125 pg/mL
- Dynamic range: 125-300,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum

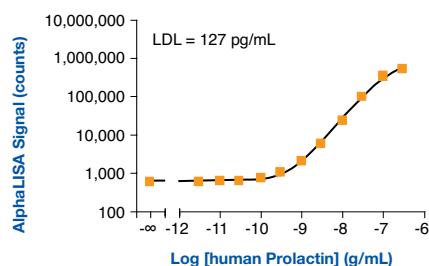
- Lower detection limit (LDL): 367 pg/mL
- Dynamic range: 367-1,300,000 pg/mL

*For research use only.

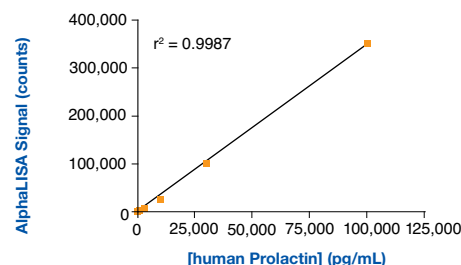
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA Prolactin kit was tested against the following analytes at 1 µg/mL:

Analyte	Cross-reactivity
Mouse Prolactin	0%
Rat Prolactin	0%

AlphaLISA PSA immunoassay kit*

Human Prostate-Specific Antigen (hPSA, KLK3) is a 33 kDa glycoprotein of the kallikrein family present in seminal fluids. It is a protease that seems to function in the liquefaction of semen after ejaculation, facilitating sperm migration through cervical mucus. Small amounts are normally found in the serum of healthy men, but a number of pathological conditions could increase levels due to prostatic tissue damage.

This kit is designed for the quantitative determination of human PSA in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps). PSA is also known as Kallikrein-related peptidase 3 (KLK3).

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 1.2 ng/mL
- Dynamic range: 1.2-1,000 ng/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum

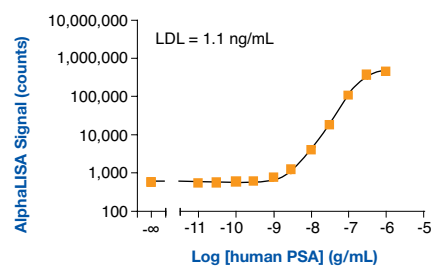
- Lower detection limit (LDL): 1.6 ng/mL
- Dynamic range: 1.6-1,000 ng/mL

*For research use only.

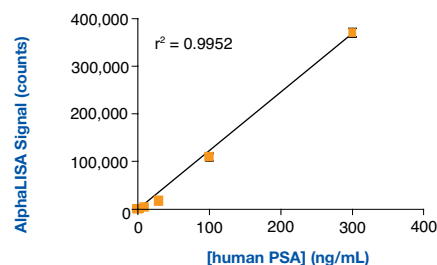
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA PSA kit was tested against the following analytes at 1 μ g/mL:

Analyte	Cross-reactivity
Kallikrein 1	0%
Kallikrein 4	0%

AlphaLISA TNF α immunoassay kit

Tumor Necrosis Factor Alpha is a multifunctional proinflammatory cytokine synthesized mainly by nucleated blood cells as a 233 aa type II transmembrane protein which is cleaved by ADAM17 between aa 76-77 to form a soluble homotrimeric complex. TNF α plays a role in lipid metabolism, coagulation and endothelial function and has been associated with cancer, infection and inflammation (including inflammatory bowel disease), ischemia/reperfusion injury and heart failure, and insulin resistance.

This kit is designed for the quantitative determination of human TNF α in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps).

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit: 2.2 pg/mL
- Dynamic range: 2.2-30,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

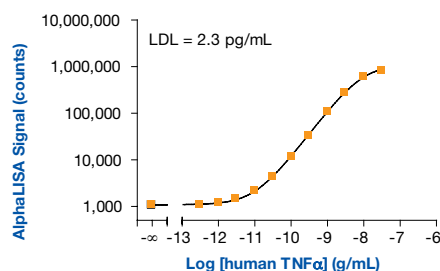
- Lower detection limit (LDL): 3.6 pg/mL
- Dynamic range: 3.6-30,000 pg/mL

*For research use only.

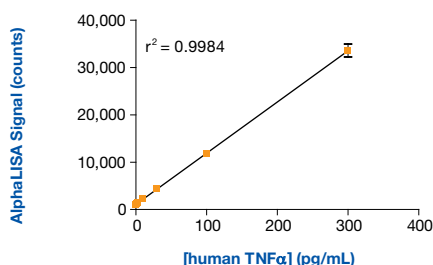
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA TNF α kit was tested against the following analytes:

Analyte	Cross-reactivity
Human TNF β	0%
Mouse TNF α	0%
Rat TNF α	0%
Bovine TNF α	0%

AlphaLISA VEGF immunoassay kit

Human Vascular Endothelial Growth Factor (VEGF-A or VEGF) is a homodimeric 34-42 kDa heparin-binding glycoprotein specific for endothelial cells. Currently, at least eight variants of human VEGF generated by alternative splicing of the same gene have been identified. The various isoforms have different heparin- and neuropilin (-1 or -2)-binding properties as well as solubility characteristics reflecting the different functional properties of the VEGF forms. VEGF is believed to play important roles in inflammation and during normal and pathological angiogenesis, a process that is associated with wound healing, embryonic development, and growth and metastasis of solid tumors. Elevated levels of VEGF have been observed in synovial fluids of rheumatoid arthritis patients and cancer patients' sera.

This kit is designed for the quantitative determination of human VEGF-A in serum, buffered solution or cell culture medium using a homogeneous AlphaLISA assay (no wash steps). It can detect VEGF165 (isoform d), VEGF162, VEGF145 (isoform e) and VEGF121 (isoform f).

Average Results

In AlphaLISA immunoassay buffer:

- Lower detection limit (LDL): 2.2 pg/mL
- Dynamic range: 2.2-100,000 pg/mL

Sensitivity can be increased by increasing the volume of analyte in the assay.

In analyte-depleted serum:

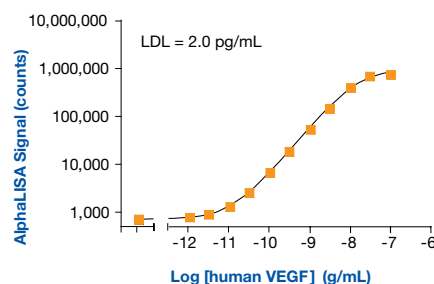
- Lower detection limit (LDL): 10.7 pg/mL
- Dynamic range: 10.7-100,000 pg/mL

*For research use only.

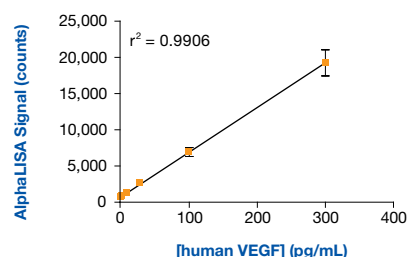
The data was generated using a white OptiPlate-384 microplate and an EnVision-Alpha Reader 2102.

Typical Results

Log scale



Linear scale (low analyte concentrations)



Specificity

The AlphaLISA VEGF kit was tested against the following analytes:

Analyte	Cross-reactivity
Human VEGF162	79%
Human VEGF145 (isoform e)	93%
Human VEGF121 (isoform f)	70%
Human VEGF-B	0%
Human VEGF-C	0%
Human VEGF-D	0%
Mouse VEGF	5%
Rat VEGF	2%

Kinase- and Cellular signaling-related Assays

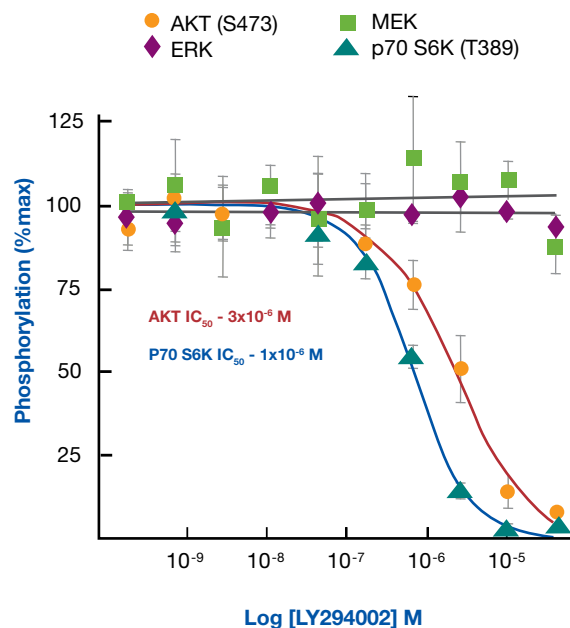
No-wash kits for phosphorylated peptides and large proteins

AlphaScreen technology is ideal for developing non-radioactive, homogeneous assays for the direct measurement of phosphorylated peptides and full-length protein substrates, with no wash step required. AlphaScreen's ability to measure large protein substrates makes it perfect for developing cellular kinase assays.

Cellular kinase assay kits

AlphaScreen *SureFire*[®] is the only no-wash cellular kinase assay currently available.

Assay of PI 3-kinase inhibitor and specificity using *SureFire*[®] cellular kinase assays



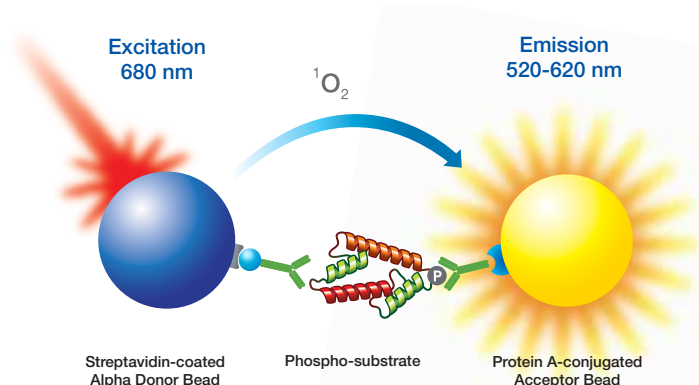
NIH-3T3 cells were treated with or without the PI 3-kinase inhibitor LY294002 at various concentrations and cells were then stimulated with PDGF. After lysis of the cells, samples of each lysate were assayed in parallel for phosphorylation of AKT (S473), p70 S6K (T389), ERK (T202/Y204) and MEK1 (S217/S221) using appropriate *SureFire*[®] AlphaScreen Cellular assay kits. It can be seen that the *SureFire*[®] assay kits provided quantitative confirmation of the specific inhibition of the PI 3-kinase pathway by LY294002 (AKT and p70S6K), with no inhibition of the ERK pathway targets (ERK and MEK1).

Kits are currently available for many key signaling pathways, including PI 3-kinase, MAP kinases, NFκB and others, providing a one-stop signaling solution for your cellular screening requirements. Assay kits will continue to be further expanded, providing a single assay format for lab-based or automated HTS campaigns.

This family of optimized kits allows for detection of activated kinases by immunosandwich capture of endogenous phosphorylated substrate in cells, following treatment of cells with inhibitors and/or activators of signaling pathways.

- Homogeneous cellular assays for phosphorylated kinases: no-wash, non-radiometric, miniaturizable cell-based functional HTS assays for activated kinases.
- Suitable for over-expressed and endogenous receptors: extremely sensitive assay that can be used with cells over-expressing cloned targets or with cells expressing physiologically relevant endogenous levels of kinase or receptor target.
- Screen for small- or large-molecule therapeutics: suitable for monitoring target modulation by monoclonal antibodies and small-molecule inhibitors.
- Use in many different cell lines, including primary cells: flexible assay format and application use.
- Easy to automate with excellent Z' values: utilizes HTS-proven AlphaScreen technology, which is easily automated and scalable to 384- and 1536-well microplate formats, while yielding outstanding S/B ratios and Z' values.

AlphaScreen SureFire® Technology



In a cellular kinase assay, the first antibody is biotinylated and is captured by the streptavidin-coated Alpha Donor bead, which in turn captures the endogenous substrate. The second antibody is captured by the Protein A-conjugated Acceptor bead, but only recognizes the phosphorylated form of the substrate of interest. The two beads are only brought into close proximity in the presence of the phosphorylated substrate. This assay setup allows “fishing” of the endogenous substrate in cells, and is extremely sensitive.

We have fully optimized kits for the following phosphorylated proteins:

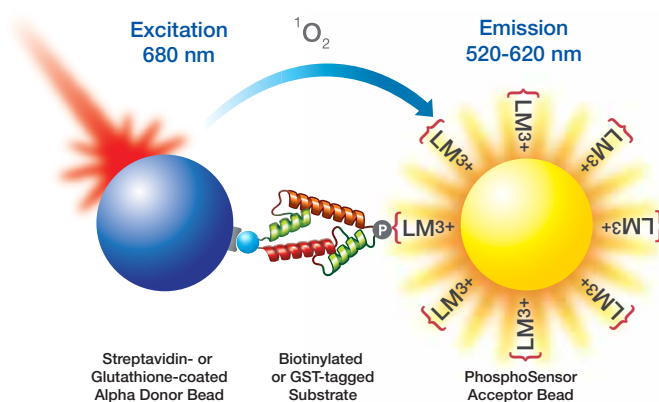
Phospho-4EBP 1 (Thr37/Thr46)
Phospho-4EBP 1 (Thr70)
Phospho-AKT (Ser473)
Phospho-AKT (Thr308)
Phospho-ALK (Tyr1586), New!
Phospho-ALK (Tyr1604), New!
Phospho-BAD (Ser112)
Phospho-BAD (Ser136)
Phospho-Caspase 9 (Ser196)
Phospho-Chk-1 (Ser345), Coming Soon!
Phospho-c-Jun (Ser63), Coming Soon!
Phospho-c-Jun (Ser73), Coming Soon!
Phospho-EGF Receptor (Tyr1068), New!
Phospho-Elk-1 (Ser383), Coming Soon!
Phospho-ErbB2 (Tyr1221/1222), Coming Soon!
Phospho-ERK 1/2 (Thr202/Tyr204)
Total ERK
Phospho-GSK3 α (Ser176/Ser180)
Phospho-GSK3 β (Ser177/Ser181)
Phospho-IGF-1 Receptor (Tyr1135/1136), New!
Phospho-I κ B α (Ser32/Ser36)
Phospho-IKK α (Ser176/Ser180)
Phospho-IKK β (Ser177/Ser181)
Phospho-Insulin Receptor (Tyr1150/1151), New!
Phospho-JNK (Thr183/Tyr185)
Phospho-MEK 1 (Ser217/Ser221)
Phospho-mTOR (Ser2448)
Phospho-mTOR (Ser2481)
Phospho-NF κ B p65 (Ser536)
Phospho-p38 MAPK (Thr180/Tyr182)
Phospho-p70 S6K (Thr229)
Phospho-p70 S6K (Thr389)
Phospho-p70 S6K (Thr421/Ser424)
Phospho-PDK 1 (Ser241)
Phospho-S6 RP (Ser235/Ser236)
Phospho-S6 RP (Ser240/Ser244)
Phospho-SMAD 2 (Ser465/Ser467)
Phospho-STAT 3 (Tyr705)
Phospho-STAT 5 (Tyr694/Tyr699)

Biochemical kinase assay kits

PerkinElmer's biochemical kinase assay kits allow targeting of purified serine/threonine kinases.

- Tyrosine Kinase Optimized Assays allow direct detection of phosphorylated tyrosine kinase substrates using anti-phosphotyrosine antibodies (P-Tyr-100, PT66 or PY20). In these assays, the anti-phosphotyrosine antibodies are conjugated directly to the Acceptor beads.
- Generic IgG Assays for Serine and Threonine Kinases are an excellent choice for serine/threonine kinase assays when a suitable antibody to the phosphorylated substrate is available. The specific anti-phospho substrate antibody is captured by Protein A or anti-species IgG-coated Acceptor beads.
- PhosphoSensor – Antibody-free Generic Assay enables detection of protein kinase-mediated phosphorylation of tyrosine, serine and threonine without the need for sequence-specific antibodies. This assay format can be performed utilizing a biotinylated substrate or a GST-fusion substrate utilizing GSH (glutathione) Alpha Donor beads.

AlphaScreen PhosphoSensor Technology



This assay is based on the use of streptavidin- or glutathione-coated Alpha Donor beads and PhosphoSensor Acceptor beads. The PhosphoSensor Acceptor beads are coated with a Lewis Metal Chelate that allows them to detect phosphate groups irrespective of the nature of the phosphorylated residues. This is an excellent assay choice when serine or threonine antibodies are cost-prohibitive or not available.

Call OnPoint for our newest kits

Our list of optimized cellular kinase kits is rapidly expanding. If your analyte of choice is not listed, please check with your PerkinElmer representative or our OnPoint Assay Development Service Team.

Fusion Tag Detection Tools

Simple assays for complex interactions

The ability to measure very large molecules makes Alpha technology extremely powerful for measuring very large, complex biological interactions.

We provide a panel of kits and tools for detecting commonly used epitope tags and chemical labels.

Kits for complex biological interactions such as:

- GPCRs: Dimerization, Ligand Binding
- Kinase: Substrate Interactions
- Nuclear Receptor: CoActivator/CoRepressor Interactions
- Protein: DNA
- Protein: Protein
- Protein: RNA
- Protein: Peptides
- Lipids: Proteins
- Antibody Screening

Custom Alpha-bead coating available

Through our custom labeling services, we have the ability to label almost any molecule that you require directly to the Alpha beads to help you build a custom biological interaction assay (see OnPoint Reagent Services, page 47).

Fusion tag kits

A series of kits that allows you to detect almost any kind of biological interaction as long as one of the binding partners is biotinylated and the second has one of the common fusion tags or chemical labels listed below.

Tool box beads

A range of individual beads to allow you to build your own customized assay using one of the three Alpha Donor beads listed below and any one of the individual AlphaLISA Acceptor beads.

Kits		Tool Box Beads	
Fusion Tag Detection Kits		Alpha Donor Beads	AlphaLISA Acceptor Beads
• c-myc Detection Kits		• Streptavidin	• Protein A
• DIG Detection Kits		• Glutathione	• Protein G
• FITC Detection Kits		• Nickel Chelate	• Anti-human IgG (Fc-specific)
• FLAG Detection Kits			• Anti-rabbit IgG (Fc-specific)
• HA Detection Kits			• Anti-mouse IgG (Fc-specific)
• Histidine (Nickel Chelate) Detection Kits			• Anti-rat IgG (Fc-specific)
• Protein A			• Anti-goat IgG (Fc-specific)
• Histidine (Nickel Chelate)			• Nickel Chelate
• General IgG (Protein A) Detection Kits			• Glutathione
• Mouse IgG Detection Kits			• Anti-GST
• Rabbit IgG Detection Kits			• Anti-c-myc
			• Anti-FLAG
			• Anti-DIG
Kits include a streptavidin Alpha Donor bead and an Acceptor bead coated with the relevant capture molecule.			

Cellular GPCR Assays and cGMP

cAMP and Phospho-ERK assays

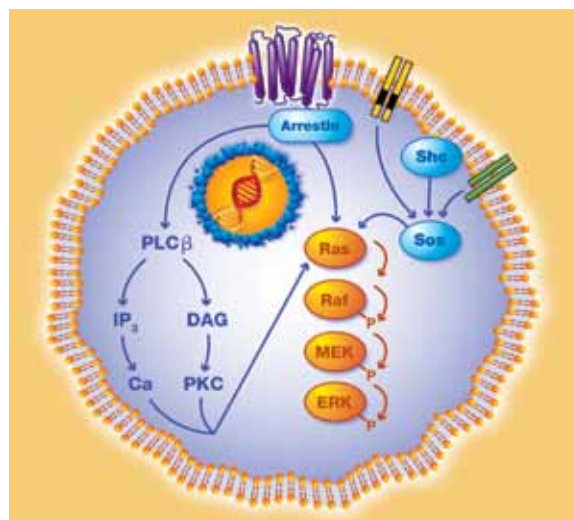
There are two specific kits in the AlphaScreen portfolio for measuring GPCR activity. In addition, we have a kit for measuring cGMP.

AlphaScreen SureFire® ERK assay

The ability to measure ERK phosphorylation provides a powerful tool to measure many GPCR types, including most G_q -, many G_i - and some G_s -coupled GPCRs.

AlphaScreen SureFire® ERK is a generic tool for measuring GPCRs, particularly those in tough-to-screen G_i - and G_q -coupled receptors. SureFire® ERK gives a positive readout for all GPCR types, including G_i -coupled receptors.

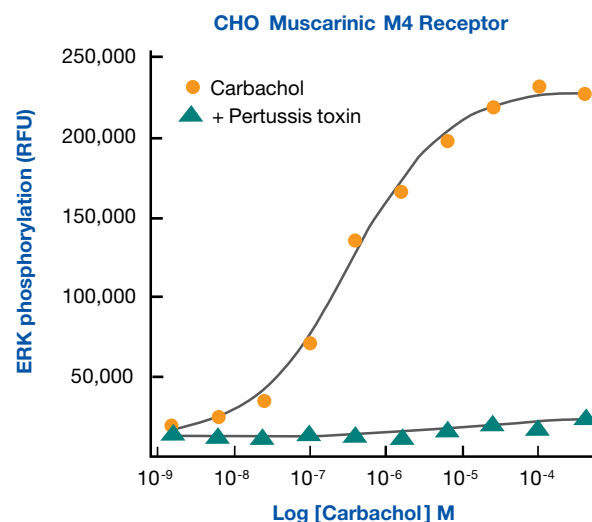
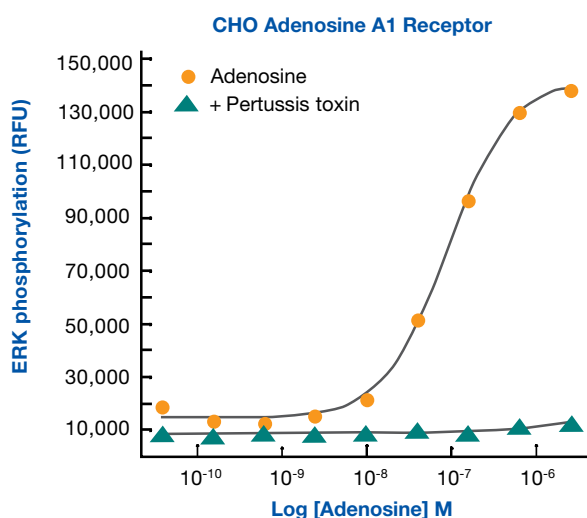
- Excellent secondary GPCR technology for challenging targets
- Applicable to endogenous receptors and primary cells
- Alternative for tough-to-screen targets not optimally coupled through the calcium or cAMP pathway



Pathway Diagram

ERK is activated by multiple receptor classes, including G_q , G_{12} and some G_s -coupled receptors, making it an ideal endpoint measurement for GPCR activation.

Measurement of G_i -coupled GPCRs using phospho-ERK



Stably transfected G_i -coupled receptors in CHO cells

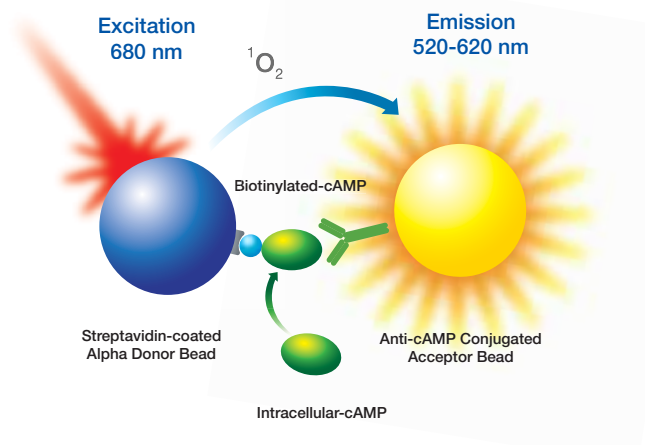
CHO cells possessing stably transfected Adenosine A1 receptors or Muscarinic M4 G-protein-coupled receptors (GPCRs) were treated with or without pertussis toxin overnight to block coupling to the G_i G-protein. Cells were then stimulated with agonist appropriate for the transfected GPCR (Adenosine or Carbachol, respectively) at the concentrations shown for 10 minutes. Cells were then lysed and assayed for phosphorylation of the MAP kinase ERK (T202/Y204) using the SureFire® AlphaScreen Cellular ERK assay kit. Activation of each receptor caused a potent stimulation of ERK phosphorylation which was mediated by the G_i G-protein, as indicated by the response being totally inhibited by treatment of cells with pertussis toxin. Therefore, the phospho-ERK SureFire® kit provides a useful tool in the study of these and many other G_i -coupled GPCRs.

cAMP detection with AlphaScreen

AlphaScreen cAMP is a highly sensitive tool for measuring G_i - and G_s -coupled GPCRs:

- Detection of cAMP is based on the competition between cellular cAMP and a biotinylated cAMP probe that is recognized by the streptavidin Alpha Donor and anti-cAMP conjugated Acceptor beads.
- Increased intracellular concentrations of cAMP following G_s -coupled GPCR activation by an agonist displaces the biotinylated cAMP and leads to a proportional signal decrease.
- The effect of antagonists and reverse agonists can similarly be detected. G_i -coupled receptor activation can be detected after pre-stimulating cells with forskolin.

AlphaScreen cAMP Principle



AlphaScreen cGMP

PerkinElmer offers a cGMP kit for cellular cGMP investigation and screening. AlphaScreen cGMP is ideal for measuring cGMP either in cell lysates or in cell-free biochemical assays.

- Offers maximum sensitivity, allowing measurement of the activity of such therapeutic targets as phosphodiesterases, guanylate cyclases or nitric oxide synthetases.
- Utilizes a uniquely effective technology. Based on the competition between the AlphaScreen Biotinylated cGMP Supplement and free cGMP, which compete for a limited number of binding sites on cGMP-specific polyclonal antibodies captured on AlphaScreen Protein A-coated Acceptor beads.

Through PerkinElmer, you have access to the world's most comprehensive product offerings for GPCR research and drug discovery. In addition to AlphaScreen technology, our lineup includes a comprehensive range of reagents such as NEN[®] radioligands, DELFIA ligands and cloned receptor membranes, additional assay systems such as LANCE, DELFIA, FlashPlate[®] technologies, plus versatile, scalable detection instrumentation. Please visit www.perkinelmer.com/GPCRcomplete for information on our total solution for GPCRs.

Developing AlphaLISA and AlphaScreen Assays

We offer a range of tool box reagents and assay development services to support the development of your own customized Alpha assays. Our team of expert chemists and biologists has extensive experience in both cellular and biochemical assay development across all key drug discovery targets.

Tool box reagents

- Separates
- Unconjugated (provided with no coating)
- Bead conjugation kit
- Universal Buffer

To facilitate the development of your customized Alpha assay, separate beads are available unconjugated or coated with popular binding partners. Scientific support and consultation is available to help you on your way.

Single Beads Available

Alpha Donor Beads

Streptavidin
Glutathione
Nickel Chelate
Unconjugated

AlphaScreen Acceptor Beads

Protein A
Unconjugated

AlphaLISA Acceptor Beads

Protein A
Protein G
Anti-human IgG (Fc-specific)
Anti-rabbit IgG (Fc-specific)
Anti-mouse IgG (Fc-specific)
Anti-rat IgG (Fc-specific)
Anti-goat IgG (Fc-specific)
Nickel Chelate
Glutathione
Anti-GST
Anti-c-myc
Anti-FLAG
Anti-DIG
Unconjugated

For more information

If you are interested in the optimization of AlphaScreen and AlphaLISA Assays, please refer to "A Practical Guide to Working with AlphaScreen" and "The AlphaLISA Assay Development Guide." Available at www.perkinelmer.com.

OnPoint Reagent Services

Custom Alpha labeling

When you need a custom molecule conjugated to Alpha beads, PerkinElmer scientists can provide expert assistance.

Alpha Labeling Capabilities

Capability	Description
Labeling of target protein/ligand with biotin, fluorescein or digoxigenin	Target protein or ligand (binding partner) is labeled with biotin, fluorescein or digoxigenin. A minimum of 0.2 mg of purified protein (concentration >1 mg/mL) in PBS is required. The level of label per target protein is determined using a protocol developed at PerkinElmer.
Bead labeling	Target protein is cross-linked to AlphaScreen or AlphaLISA Acceptor beads. A minimum of 0.5 mg of purified protein (concentration >1 mg/mL) in PBS is required.

Assay development

As with many other technology platforms available from PerkinElmer, Alpha technology assays are available with a full assay development service that is both flexible and scalable to meet your needs. From supporting your assay development to technical consultation, our service mission is to deliver a fully optimized protocol based on your specific requirements. Services are delivered scientist-to-scientist to ensure the most accurate technology transfer to your organization.

Types of assays that can be developed:

- Detection and quantification of multiple targets in various samples:
 - Biomarkers (serum or plasma)
 - Phosphorylated intracellular proteins (cell lysates)
 - Intracellular proteins (cell lysates)
 - Secreted proteins (cell culture supernatants)
 - Purified proteins
 - Immunotherapeutics
- Purity assessment of therapeutic antibody preparations (Host Cell Proteins and residual Protein A assays)

A broad offering of technology platforms and instruments supports the development of a platform that is right for your application.

With our comprehensive application support, our team of expert scientists can work with you step by step during development until your technology transfer is complete. Once your assay is fully developed, we provide a full protocol, proof of concept and on-site technology training.

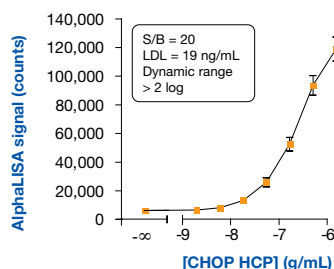
Examples of assays that have been custom developed for PerkinElmer clients

AlphaLISA CHOP HCP Assay

This immunoassay aims at detecting and measuring host cell protein (HCP) contamination in therapeutic antibody drugs expressed in CHO cells. Even after multiple purification steps, significant levels of HCP impurities can be present in the final product, potentially leading to patient adverse immune reactions. The AlphaLISA CHOP HCP assay has been demonstrated to be a valuable analytical method in process development and routine quality control.

The format selected is a sandwich assay where the HCPs are captured by the same polyclonal anti-CHOP HCP antibody (raised against a mix of different proteins), present on both beads. The biotinylated antibody is captured by the streptavidin-coated Alpha Donor beads, whereas the Acceptor beads are directly conjugated with the antibody.

AlphaLISA CHOP HCP Assay

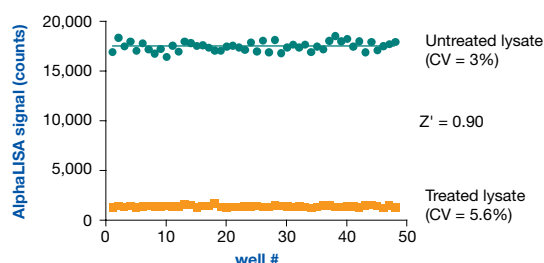


CHOP HCP calibration curve using a commercial HCP mixture. The high sensitivity of the assay allows detection of very low levels of total HCPs, while the wide dynamic range permits the direct analysis of samples containing varying HCP amounts (no dilutions required).

Detection of a Phosphorylated Intracellular Target Using AlphaLISA

The assay was designed to detect a specific intracellular target phosphorylated on a tyrosine residue. An indirect AlphaLISA configuration was developed, comprised of a biotinylated goat anti-rabbit antibody captured by streptavidin-coated Alpha Donor beads, a rabbit anti-phosphoprotein antibody and an anti-protein antibody conjugated to AlphaLISA Acceptor beads.

Detection of a Phosphorylated Intracellular Target Using AlphaLISA

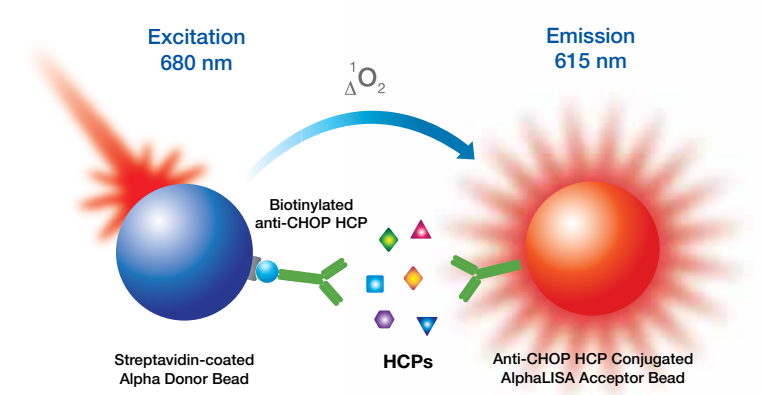


Z' determination using cancer cell lysates. To assess the robustness and reproducibility of this specific assay, a Z' determination study was performed on two populations of data generated with untreated and treated cell lysates, containing the phosphorylated and unphosphorylated forms of the target, respectively. The Z' value of 0.9 obtained demonstrates that the AlphaLISA assay developed for this phosphorylated intracellular protein is suitable for HTS applications.

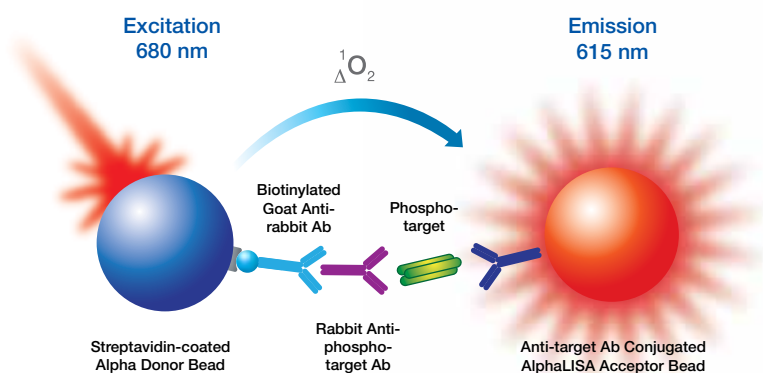
AlphaLISA Rat Growth Hormone Assay

This biomarker immunoassay was designed to quantify rat Growth Hormone (GH) present in serum and plasma samples. The assay configuration involves the sandwich capture of GH by an anti-GH antibody conjugated to AlphaLISA Acceptor beads and a biotinylated anti-GH antibody (directed against another epitope of GH) bound to streptavidin-coated Alpha Donor beads.

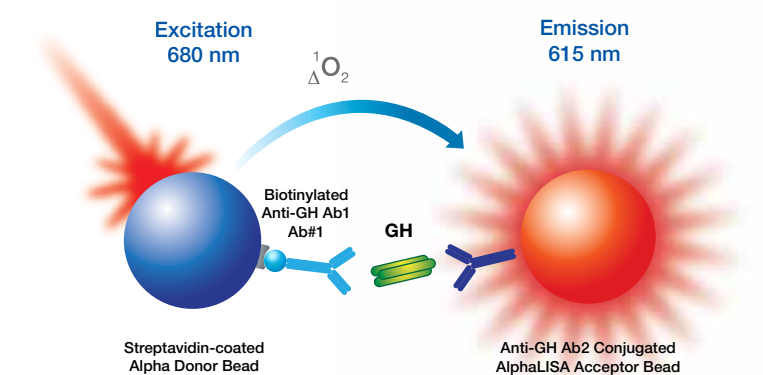
CHOP HCP Assay



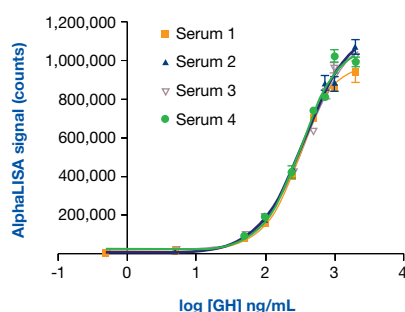
Detection of a Phosphorylated Intracellular Target



AlphaLISA Rat Growth Hormone Assay

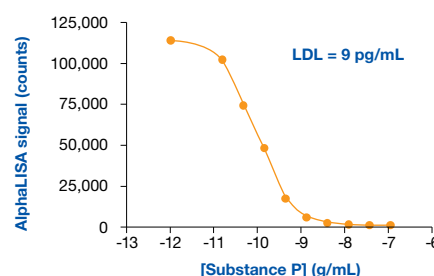


AlphaLISA Rat Growth Hormone Assay



Growth Hormone calibration curves generated in 4 different GH-depleted sera. The assay is capable of detection at a wide dynamic range (3.5 log units – 1 to 3,000 ng/mL), and demonstrates a good sensitivity for each of the sera matrices tested. The protocol developed is very user-friendly with only three addition steps.

AlphaLISA Substance P Immunoassay



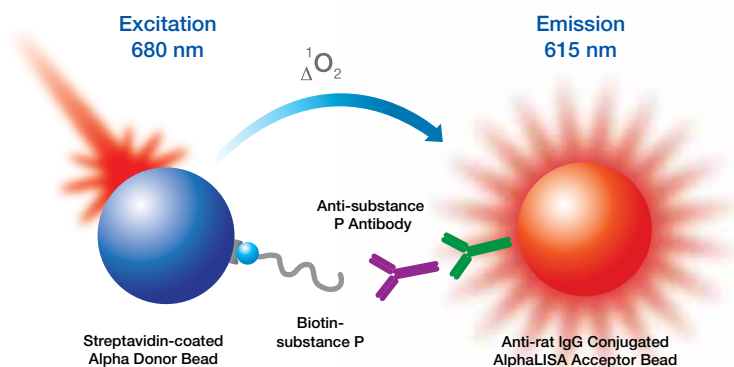
Substance P calibration curve. The dose-dependent signal decrease observed suggests that the AlphaLISA competition immunoassay is well suited for the quantitative determination of Substance P polypeptide in serum and plasma samples, as well as cell lysates and cell culture supernatants.

AlphaLISA Substance P Immunoassay

This assay aims at detecting Substance P (SP, Neurokinin-1), a small, 11-amino acid polypeptide present in neuronal tissue. The format selected is an indirect capture of the anti-SP antibody by AlphaLISA anti-rat IgG-coated beads. The biotinylated Substance P peptide is captured by streptavidin-coated Alpha Donor beads. Substance P present in samples will compete with biotinylated SP for the binding to the specific antibody, leading to a dose-dependent decrease of the signal.

Additional examples of homogeneous assays PerkinElmer scientists have developed include:

- Alk-1
- c-FMS
- CGRP
- COMP
- DAPK
- Dimethyl H3 peptide
- NS/0
- Phosphorylated c-met
- Residual Protein A
- Tissue Factor



1. OnPoint Scientific Consultation

PerkinElmer assay development scientists conduct a technical assessment, during which assay specifics and performance criteria are discussed.

2. Assay Development Proposal

The OnPoint team creates a customized service proposal for your business, including a detailed description of the assay development plan, deliverables and timelines.

3. Assay Development

The OnPoint Assay Development Team will provide preliminary feedback on progress and report key milestones.

4. Complete Technology Transfer

A technology transfer typically includes the following:

- Proof of concept report
- Detailed assay protocol
- Assay training

Tools for assay optimization and troubleshooting

Developing assays for large, complex molecules can be challenging, but with AlphaScreen kits, it is extremely simple. AlphaScreen optimization tools include:

- AlphaScreen Omnibeads Kit: All the chemical components necessary for a strong AlphaScreen signal without the presence of AlphaScreen Acceptor and Alpha Donor beads.
- AlphaScreen TruHits Kit: A tool for AlphaScreen users to identify false positives in AlphaScreen HTS assays early in the screening process and in a cost-effective way.

For more information, please contact your local PerkinElmer sales representative or call 1-800-762-4000. Ask for our comprehensive AlphaLISA assay development guide.

Ordering Information

No-wash AlphaLISA Research Immunoassay Kits			
Product Information	Product Description	Size	Part Number
<p>AlphaLISA immunoassay kits are for research purposes only and are not intended for diagnostic applications.</p> <p>Each Kit Contains: AlphaLISA Acceptor beads coated with anti-analyte antibody 1, streptavidin-coated Alpha Donor beads, biotinylated anti-analyte antibody 2, lyophilized analyte and AlphaLISA buffer (10X). Buffer and lyophilized analyte can be ordered separately.</p>	Human Adiponectin Kit, New!	500 assay points 5,000 assay points	AL209C AL209F
	Human Adiponectin, Lyophilized	1 µg	AL209S
	Human Amyloid β 1-40 Immunoassay Kit	500 assay points 5,000 assay points	AL202C AL202F
	Human Amyloid β 1-40, Lyophilized	0.3 µg	AL202S
	Human Amyloid β 1-42 Immunoassay Kit	500 assay points 5,000 assay points	AL203C AL203F
	Human Amyloid β 1-42, Lyophilized	1 µg	AL203S
	CHO-P Kit, New!	500 assay points 5,000 assay points	AL210C AL210F
	CHO-P, Lyophilized	0.5 µg	AL210S
	Human COMP Kit, New!	500 assay points 5,000 assay points	AL211C AL211F
	Human COMP, Lyophilized	1.5 µg	AL211S
	Human EGFR Kit, New!	500 assay points 5,000 assay points	AL212C AL212F
	Human EGFR, Lyophilized	1 µg	AL212S
	Human EPO Immunoassay Kit	500 assay points 5,000 assay points	AL206C AL206F
	Human EPO, Lyophilized	30 IU	AL206S
	Human G-CSF Kit, New!	500 assay points 5,000 assay points	AL213C AL213F
	Human G-CSF, Lyophilized	1 µg	AL213S
	Human GH Kit, New!	500 assay points 5,000 assay points	AL214C AL214F
	Human GH, Lyophilized	0.3 µg	AL214S
	Human GLP-1 (7-36 Amide) Kit, New!	500 assay points 5,000 assay points	AL215C AL215F
	Human GLP-1 (7-36 Amide), Lyophilized	0.1 µg	AL215S

No-wash AlphaLISA Research Immunoassay Kits

Product Information	Product Description	Size	Part Number
<p>AlphaLISA immunoassay kits are for research purposes only and are not intended for diagnostic applications.</p> <p>Each Kit Contains: AlphaLISA Acceptor beads coated with anti-analyte antibody 1, streptavidin-coated Alpha Donor beads, biotinylated anti-analyte antibody 2, lyophilized analyte and AlphaLISA buffer (10X). Buffer and lyophilized analyte can be ordered separately.</p>	Human GM-CSF Kit, New!	500 assay points 5,000 assay points	AL216C AL216F
	Human GM-CSF, Lyophilized	0.03 µg	AL216S
	HIV-p24 Immunoassay Kit	500 assay points 5,000 assay points	AL207C AL207F
	HIV-p24, Lyophilized	10 µg	AL207S
	Human IFN-γ Kit, New!	500 assay points 5,000 assay points	AL217C AL217F
	Human IFN-γ, Lyophilized	0.3 µg	AL217S
	Human IgG Immunoassay Kit	500 assay points 5,000 assay points	AL205C AL205F
	Human IgG, Lyophilized	3 µg	AL205S
	Human IL1β Kit, New!	500 assay points 5,000 assay points	AL220C AL220F
	Human IL1β, Lyophilized	0.1 µg	AL220S
	Human IL2 Kit, New!	500 assay points 5,000 assay points	AL221C AL221F
	Human IL2, Lyophilized	0.3 µg	AL221S
	Human IL3 Kit, New!	500 assay points 5,000 assay points	AL222C AL222F
	Human IL3, Lyophilized	0.3 µg	AL222S
	Human IL6 Kit, New!	500 assay points 5,000 assay points	AL223C AL223F
	Human IL6, Lyophilized	0.1 µg	AL223S
	Human IL8 Kit, New!	500 assay points 5,000 assay points	AL224C AL224F
	Human IL8, Lyophilized	0.1 µg	AL224S
	Human IL10 Kit, New!	500 assay points 5,000 assay points	AL218C AL218F
	Human IL10, Lyophilized	0.3 µg	AL218S

No-wash AlphaLISA Research Immunoassay Kits

Product Information	Product Description	Size	Part Number
<p>AlphaLISA immunoassay kits are for research purposes only and are not intended for diagnostic applications.</p> <p>Each Kit Contains: AlphaLISA Acceptor beads coated with anti-analyte antibody 1, streptavidin-coated Alpha Donor beads, biotinylated anti-analyte antibody 2, lyophilized analyte and AlphaLISA buffer (10X). Buffer and lyophilized analyte can be ordered separately.</p>	Human IL17 Kit, New!	500 assay points 5,000 assay points	AL219C AL219F
	Human IL17, Lyophilized	1 µg	AL219S
	Human Insulin Immunoassay Kit	500 assay points 5,000 assay points	AL204C AL204F
	Human Insulin, Lyophilized	0.01 IU	AL204S
	Human Leptin Kit, New!	500 assay points 5,000 assay points	AL225C AL225F
	Human Leptin, Lyophilized	0.3 µg	AL225S
	NSO-P Kit, New!	500 assay points 5,000 assay points	AL226C AL226F
	NSO-P, Lyophilized	1 µg	AL226S
	Human Prolactin Kit, New!	500 assay points 5,000 assay points	AL227C AL227F
	Human Prolactin, Lyophilized	1 µg	AL227S
	Human PSA Kit, New!	500 assay points 5,000 assay points	AL228C AL228F
	Human PSA, Lyophilized	3 µg	AL228S
	Human TNF α Immunoassay Kit	500 assay points 5,000 assay points	AL208C AL208F
	Human TNF α , Lyophilized	0.1 µg	AL208S
	Human VEGF Immunoassay Kit	500 assay points 5,000 assay points	AL201C AL201F
	Human VEGF, Lyophilized	0.3 µg	AL201S

Kinase- and Cell Signaling-related Assays

Cellular Kinase AlphaScreen *SureFire*® Kits

Product Information	Product Description	Size	Part Number
<p>Each Kit Contains: Reaction buffer containing specific protein and phospho-protein antibodies; lysis buffer (5X); activation buffer, control lysates (positive and negative). Some kits also contain a dilution buffer if it is a 2-step protocol.</p> <p>AlphaScreen Protein A Kit must be ordered separately: 6760617C/M/R</p>	Phospho-4EBP 1 (Thr37/Thr46)	500 assay points 10,000 assay points 50,000 assay points	TGR4ES500 TGR4ES10K TGR4ES50K
	Phospho-4EBP 1 (Thr70)	500 assay points 10,000 assay points 50,000 assay points	TGR4E2S500 TGR4E2S10K TGR4E2S50K
	Phospho-AKT (Ser473)	500 assay points 10,000 assay points 50,000 assay points	TGRAS500 TGRAS10K TGRAS50K
	Phospho-AKT (Thr308)	500 assay points 10,000 assay points 50,000 assay points	TGRA2S500 TGRA2S10K TGRA2S50K
	Phospho-ALK (Tyr1586), New!	500 assay points 10,000 assay points 50,000 assay points	TGRALS500 TGRALS10K TGRALS50K
	Phospho-ALK (Tyr1604), New!	500 assay points 10,000 assay points 50,000 assay points	TGRAL2S500 TGRAL2S10K TGRAL2S50K
	Phospho-BAD (Ser112)	500 assay points 10,000 assay points 50,000 assay points	TGRBS500 TGRBS10K TGRBS50K
	Phospho-BAD (Ser136)	500 assay points 10,000 assay points 50,000 assay points	TGRB2S500 TGRB2S10K TGRB2S50K
	Phospho-Caspase 9 (Ser196)	500 assay points 10,000 assay points 50,000 assay points	TGRC9S500 TGRC9S10K TGRC9S50K
	Phospho-Chk-1 (Ser345), New!	500 assay points 10,000 assay points 50,000 assay points	TGRCHK1S500 TGRCHK1S10K TGRCHK1S50K
	Phospho-c-Jun (Ser63), New!	500 assay points 10,000 assay points 50,000 assay points	TGRCJS500 TGRCJS10K TGRCJS50K
	Phospho-c-Jun (Ser73), New!	500 assay points 10,000 assay points 50,000 assay points	TGRCJ2S500 TGRCJ2S10K TGRCJ2S50K
	Phospho-EGF receptor (Tyr1068), New!	500 assay points 10,000 assay points 50,000 assay points	TGRERS500 TGRERS10K TGRERS50K

Kinase- and Cell Signaling-related Assays

Cellular Kinase AlphaScreen *SureFire*® Kits

Product Information	Product Description	Size	Part Number
<p>Each Kit Contains: Reaction buffer containing specific protein and phospho-protein antibodies; lysis buffer (5X); activation buffer, control lysates (positive and negative). Some kits also contain a dilution buffer if it is a 2-step protocol.</p> <p>AlphaScreen Protein A Kit must be ordered separately: 6760617C/M/R</p>	Phospho-Elk-1 (Ser383), Coming Soon!	500 assay points 10,000 assay points 50,000 assay points	TGRELKS500 TGRELKS10K TGRELKS50K
	Phospho-ErbB2 (Tyr1221/1222), Coming Soon!	500 assay points 10,000 assay points 50,000 assay points	TGREB2S500 TGREB2S10K TGREB2S50K
	Phospho-ERK 1/2 (Thr202/Tyr204)	500 assay points 10,000 assay points 50,000 assay points	TGRES500 TGRES10K TGRES50K
	Total ERK	500 assay points 10,000 assay points 50,000 assay points	TGRTES500 TGRTES10K TGRTES50K
	Phospho-GSK3 α (Ser21)	500 assay points 10,000 assay points 50,000 assay points	TGRGAS500 TGRGAS10K TGRGAS50K
	Phospho-GSK3 β (Ser9)	500 assay points 10,000 assay points 50,000 assay points	TGRGBS500 TGRGBS10K TGRGBS50K
	Phospho-IGF-1 Receptor (Tyr1135/1136), New!	500 assay points 10,000 assay points 50,000 assay points	TGRIGFS500 TGRIGFS10K TGRIGFS50K
	Phospho-I κ B α (Ser32/Ser36)	500 assay points 10,000 assay points 50,000 assay points	TGRIKS500 TGRIKS10K TGRIKS50K
	Phospho-IKK α (Ser176/Ser180)	500 assay points 10,000 assay points 50,000 assay points	TGRKAS500 TGRKAS10K TGRKAS50K
	Phospho-IKK β (Ser177/Ser181)	500 assay points 10,000 assay points 50,000 assay points	TGRKBS500 TGRKBS10K TGRKBS50K
	Phospho-Insulin Receptor (Tyr1150/1151), New!	500 assay points 10,000 assay points 50,000 assay points	TGRIIRS500 TGRIIRS10K TGRIIRS50K
	Phospho-JNK 1/3 (Thr183/Tyr185)	500 assay points 10,000 assay points 50,000 assay points	TGRJS500 TGRJS10K TGRJS50K
	Phospho-MEK 1 (Ser217/Ser221)	500 assay points 10,000 assay points 50,000 assay points	TGRMS500 TGRMS10K TGRMS50K
	Phospho-mTOR (Ser2448), New!	500 assay points 10,000 assay points 50,000 assay points	TGRMTS500 TGRMTS10K TGRMTS50K

Kinase- and Cell Signaling-related Assays

Cellular Kinase AlphaScreen *SureFire*® Kits

Product Information	Product Description	Size	Part Number
<p>Each Kit Contains: Reaction buffer containing specific protein and phospho-protein antibodies; lysis buffer (5X); activation buffer, control lysates (positive and negative). Some kits also contain a dilution buffer if it is a 2-step protocol.</p> <p>AlphaScreen Protein A Kit must be ordered separately: 6760617C/M/R</p>	Phospho-mTOR (Ser2481)	500 assay points 10,000 assay points 50,000 assay points	TGRMT2S500 TGRMT2S10K TGRMT2S50K
	Phospho-p65 (Ser536)	500 assay points 10,000 assay points 50,000 assay points	TGRNFS500 TGRNFS10K TGRNFS50K
	Phospho-p38 MAPK (Thr180/Tyr182)	500 assay points 10,000 assay points 50,000 assay points	TGR38S500 TGR38S10K TGR38S50K
	Phospho-p70 S6K (Thr229)	500 assay points 10,000 assay points 50,000 assay points	TGR703S500 TGR703S10K TGR703S50K
	Phospho-p70 S6K (Thr389)	500 assay points 10,000 assay points 50,000 assay points	TGR70S500 TGR70S10K TGR70S50K
	Phospho-p70 S6K (Thr421/Ser424)	500 assay points 10,000 assay points 50,000 assay points	TGR702S500 TGR702S10K TGR702S50K
	Phospho-PDK 1 (Ser241)	500 assay points 10,000 assay points 50,000 assay points	TGRPS500 TGRPS10K TGRPS50K
	Phospho-S6 RP (Ser235/Ser236)	500 assay points 10,000 assay points 50,000 assay points	TGRS6PS500 TGRS6PS10K TGRS6PS50K
	Phospho-S6 RP (Ser240/Ser244)	500 assay points 10,000 assay points 50,000 assay points	TGRS6P2S500 TGRS6P2S10K TGRS6P2S50K
	Phospho-SMAD 2 (Ser465/Ser467)	500 assay points 10,000 assay points 50,000 assay points	TGRSM2S500 TGRSM2S10K TGRSM2S50K
	Phospho-STAT 3 (Tyr705)	500 assay points 10,000 assay points 50,000 assay points	TGRS3S500 TGRS3S10K TGRS3S50K
	Phospho-STAT 4 (Tyr693)	Coming Soon!	
	Phospho-STAT 5 (Tyr694/Tyr699)	500 assay points 10,000 assay points 50,000 assay points	TGRS5S500 TGRS5S10K TGRS5S50K

Kinase- and Cell Signaling-related Assays			
AlphaScreen Tyrosine Kinase Kits			
Product Information	Product Description	Size	Part Number
Each Kit Contains: Anti-phosphotyrosine AlphaScreen Acceptor beads, streptavidin-coated Alpha Donor beads, biotinylated LCK-P, buffer (10X)	AlphaScreen Phosphotyrosine (PY20)	500 assay points 10,000 assay points 50,000 assay points	6760601C 6760601M 6760601R
	AlphaScreen Phosphotyrosine (P-Tyr-100)	500 assay points 10,000 assay points 50,000 assay points	6760620C 6760620M 6760620R
	AlphaScreen Phosphotyrosine (PT66)	500 assay points 10,000 assay points 50,000 assay points	6760602C 6760602M 6760602R
AlphaScreen Generic IgG Kits			
Each Kit Contains: Anti-IgG (Protein A) AlphaScreen Acceptor beads, streptavidin-coated Alpha Donor beads, biotinylated-rabbit IgG, buffer (10X)	AlphaScreen IgG (Protein A) Detection Kit	500 assay points 10,000 assay points 50,000 assay points	6760617C 6760617M 6760617R
	AlphaScreen Mouse IgG Detection Kit	500 assay points 10,000 assay points 50,000 assay points	6760606C 6760606M 6760606R
	AlphaScreen Rabbit IgG Detection Kit	500 assay points 10,000 assay points 50,000 assay points	6760607C 6760607M 6760607R
AlphaScreen PhosphoSensor Antibody-free Kinase Kits			
Each Kit Contains: PhosphoSensor AlphaScreen Acceptor beads (Lewis metal chelate), streptavidin-coated Alpha Donor beads, biotinylated-LCK-P, buffer (10X)	AlphaScreen Antibody-free PhosphoSensor Kit	1,000 assay points 10,000 assay points 50,000 assay points	6760307D 6760307M 6760307R

Fusion Tag Detection Tools			
AlphaScreen Fusion Tag Kits			
Product Information	Product Description	Size	Part Number
Each Kit Contains: Anti-tag AlphaScreen Acceptor beads, streptavidin-coated Alpha Donor beads, biotinylated-tag, buffer (10X)	AlphaScreen GSTe) (Glutathione-S-Transferase Detection Kit	500 assay points 10,000 assay points 50,000 assay points	6760603C 6760603M 6760603R
	AlphaScreen DIG (Digoxin/Digoxigenin) Detection Kit	500 assay points 10,000 assay points 50,000 assay points	6760604C 6760604M 6760604R
	AlphaScreen FITC (Fluorescein) Detection Kit	500 assay points 10,000 assay points 50,000 assay points	6760605C 6760605M 6760605R
	AlphaScreen c-myc Detection Kit	500 assay points 10,000 assay points 50,000 assay points	6760611C 6760611M 6760611R
	AlphaScreen HA (Hemagglutinin) Detection Kit	500 assay points 10,000 assay points 50,000 assay points	6760612C 6760612M 6760612R
	AlphaScreen FLAG (M2) Detection Kit	500 assay points 10,000 assay points 50,000 assay points	6760613C 6760613M 6760613R
	AlphaScreen Histidine (Nickel Chelate) Detection Kit	500 assay points 10,000 assay points 50,000 assay points	6760619C 6760619M 6760619R
	Biotinylated-GST	1.5 mL	6760305M
	Biotinylated-HIS ₆	500 µl	6760303M
AlphaLISA Assay Buffers			
PBS/BSA Buffer	AlphaLISA Universal Assay Buffer, 5X	10 mL 100 mL	AL001C AL001F
Buffer for immunoassays (included with AlphaLISA Kits)	AlphaLISA Immunoassay Buffer, 10X	10 mL 100 mL	AL000C AL000F
Buffer for immunoassays (included with AlphaLISA Kits) for high background assays	AlphaLISA HiBlock Buffer, 10X, New!	10 mL 100 mL	AL004C AL004F

Fusion Tag Detection Tools			
AlphaScreen Generic IgG Kits			
Product Information	Product Description	Size	Part Number
Each Kit Contains: Anti IgG (Protein A) AlphaScreen Acceptor beads, Streptavidin-coated Alpha Donor beads, biotinylated-rabbit IgG, buffer (10X)	AlphaScreen IgG (Protein A) Detection Kit	500 assay points	6760617C
		10,000 assay points	6760617M
		50,000 assay points	6760617R
Each Kit Contains: Anti-mouse IgG (mIgG) AlphaScreen Acceptor beads, streptavidin-coated Alpha Donor beads, biotinylated-mouse-IgG, buffer (10X)	AlphaScreen Mouse IgG Detection Kit	500 assay points	6760606C
		10,000 assay points	6760606M
		50,000 assay points	6760606R
Each Kit Contains: Anti-rabbit IgG (rIgG) AlphaScreen Acceptor beads, streptavidin-coated Alpha Donor beads, biotinylated-rabbit-IgG, buffer (10X)	AlphaScreen Rabbit IgG Detection Kit	500 assay points	6760607C
		10,000 assay points	6760607M
		50,000 assay points	6760607R
Single Alpha Donor Beads (order AlphaScreen or AlphaLISA Acceptor beads separately)			
Streptavidin Alpha Donor beads for capture of any biotinylated molecule	Streptavidin Alpha Donor Beads	1 mg	6760002S
		5 mg	6760002
		50 mg	6760002B
Glutathione Alpha Donor beads for capture of any GST-tagged molecule	Glutathione Alpha Donor Beads	1 mg	6765300
		5 mg	6765301
		25 mg	6765302
Nickel Chelate Alpha Donor beads for capture of any HIS ₆ -tagged molecule.	Nickel Chelate Alpha Donor Beads	1 mg	AS101D
		5 mg	AS101M
		25 mg	AS101R
Single AlphaScreen Acceptor Beads (order Alpha Donor beads separately)			
Protein A AlphaScreen Acceptor beads	AlphaScreen IgG (Protein A) Acceptor Beads	5 mg	6760137M
		25 mg	6760137R

Fusion Tag Detection Tools

Single AlphaLISA Acceptor Beads (order Alpha Donor beads separately)

Product Information	Product Description	Size	Part Number
AlphaLISA Acceptor Beads	Protein A AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL101C AL101M AL101R
	Protein G AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL102C AL102M AL102R
	Anti-human IgG (Fc specific) AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL103C AL103M AL103R
	Anti-rabbit IgG (Fc specific) AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL104C AL104M AL104R
	Anti-mouse IgG (Fc specific) AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL105C AL105M AL105R
	Anti-rat IgG (Fc specific) AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL106C AL106M AL106R
	Anti-goat IgG (Fc specific) AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL107C AL107M AL107R
	Nickel Chelate AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL108C AL108M AL108R
	Glutathione AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL109C AL109M AL109R
	Anti-GST AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL110C AL110M AL110R
	Anti-c-myc AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL111C AL111M AL111R
	Anti-FLAG AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL112C AL112M AL112R
	Anti-DIG AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL113C AL113M AL113R

Cellular GPCR Assays & cGMP Detection Assays			
Phospho-ERK Measurement			
Product Information	Product Description	Size	Part Number
Each Kit Contains: Reaction buffer containing specific protein and phospho-protein antibodies; lysis buffer (5X); activation buffer, control lysates (positive and negative). Some kits also contain a dilution buffer if it is a 2-step protocol. AlphaScreen Protein A Kit must be ordered separately: 6760617C/M/R	Phospho-ERK 1/2	500 assay points	TGRES500
		10,000 assay points	TGRES10K
		50,000 assay points	TGRES50K
	Total ERK	500 assay points	TGRTE500
		10,000 assay points	TGRTE10K
		50,000 assay points	TGRTE50K
cAMP Measurement			
Each Kit Contains: Anti-cAMP AlphaScreen Acceptor beads, streptavidin-coated Alpha Donor beads, biotinylated-cAMP, cAMP standard, buffer (10X), 3% Tween-20 solution	AlphaScreen cAMP Assay Kit	1,000 assay points	6760625D
		10,000 assay points	6760625M
		50,000 assay points	6760625R
One tube of biotinylated cAMP for use with AlphaScreen cAMP Kit	Biotinylated cAMP Supplement	10,000 assay points 50,000 assay points	6760301M 6760301R
Cellular GPCR Assays & cGMP Detection Assays			
cGMP Measurement			
Biotinylated cGMP supplement with antibody. AlphaScreen Protein A Kit must be ordered separately: 6760617C/M/R	Biotinylated cGMP Supplement with anti-cGMP Antibody	10,000 assay points	6760308M
		50,000 assay points	6760308R
Biotinylated cGMP supplement. Anti-cGMP antibody and AlphaScreen Protein A Kit must be ordered separately: 6760617C/M/R	Biotinylated cGMP Supplement	10,000 assay points 50,000 assay points	6760306M 6760306R

Developing AlphaLISA and AlphaScreen Assays			
Tool Box Reagents			
Product Information	Product Description	Size	Part Number
Each Kit Contains: Streptavidin Alpha Donor beads, unconjugated AlphaScreen Acceptor beads	AlphaScreen Conjugation Kit	2 x 2 mg	6760000K
AlphaLISA Assay Buffers			
PBS/BSA Buffer	AlphaLISA Universal Assay Buffer, 5X	10 mL 100 mL	AL001C AL001F
Buffer for immunoassays (included with AlphaLISA Kits)	AlphaLISA Immunoassay Buffer, 10X	10 mL 100 mL	AL000C AL000F
Buffer for immunoassays (included with AlphaLISA Kits) for high background assays	AlphaLISA HiBlock Buffer, 10X, New!	10 mL 100 mL	AL004C AL004F
Single Alpha Donor Beads (order Alpha Donor beads separately)			
Unconjugated (no coating) Alpha Donor beads. Conjugate your own biomolecule to the AlphaScreen Acceptor beads to custom- ize your own Alpha assay	Unconjugated Alpha Donor Beads	1 mg 5 mg 50 mg	6762013 6762011 6762012
Streptavidin Alpha Donor beads for capture of any biotinylated molecule	Streptavidin Alpha Donor Beads	1 mg 5 mg 50 mg	6760002S 6760002 6760002B
Glutathione Alpha Donor beads for capture of any GST-tagged molecule	Glutathione Alpha Donor Beads	1 mg 5 mg 25 mg	6765300 6765301 6765302
Nickel Chelate Alpha Donor beads for capture of any HIS ₆ -tagged molecule.	Nickel Chelate Alpha Donor Beads	1 mg 5 mg 25 mg	AS101D AS101M AS101R
Single AlphaScreen Acceptor Beads (order Alpha Donor beads separately)			
Unconjugated (no coating) AlphaScreen Acceptor beads. Conjugate your own biomolecule to the AlphaScreen Acceptor beads to customize your own AlphaScreen assay	Unconjugated AlphaScreen Acceptor Beads	1 mg 5 mg 50 mg	6762003 6762001 6762002
Single protein A coated AlphaScreen Acceptor beads	AlphaScreen Protein A Acceptor Beads	5 mg 25 mg	6760137M 6760137R

Developing AlphaLISA and AlphaScreen Assays

Single AlphaLISA Acceptor Beads (order Alpha Donor beads separately)

Product Information	Product Description	Size	Part Number
Unconjugated (no coating) AlphaLISA Acceptor beads. Conjugate your own biomolecule to the AlphaLISA Acceptor beads to customize your own AlphaLISA assay	AlphaLISA Unconjugated Acceptor Beads	1 mg 5 mg 50 mg	6772001 6772002 6772003
	Protein A AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL101C AL101M AL101R
	Protein G AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL102C AL102M AL102R
	Anti-human IgG (Fc specific) AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL103C AL103M AL103R
	Anti-rabbit IgG (Fc specific) AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL104C AL104M AL104R
	Anti-mouse IgG (Fc specific) AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL105C AL105M AL105R
	Anti-rat IgG (Fc specific) AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL106C AL106M AL106R
	Anti-goat IgG (Fc specific) AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL107C AL107M AL107R
	Nickel Chelate AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL108C AL108M AL108R
	Glutathione AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL109C AL109M AL109R
	Anti-GST AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL110C AL110M AL110R
	Anti-c-myc AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL111C AL111M AL111R
	Anti-FLAG AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL112C AL112M AL112R
	Anti-DIG AlphaLISA Acceptor Beads	250 µg 5 mg 25 mg	AL113C AL113M AL113R
	AlphaLISA Acceptor Beads		

OnPoint Reagent Services for AlphaLISA and AlphaScreen Assays

Custom Alpha-labeling

Product Information	Product Description	Size	Part Number
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We can conjugate your specific biomolecule to Alpha Donor or Acceptor beads to help you design your own customized Alpha assay. Please contact your local PerkinElmer application specialist or visit www.perkinelmer.com for more information.

Custom Reagent Services

For a consultation, please contact your local PerkinElmer application specialist or visit www.perkinelmer.com.

Optimization Tools

Omnibeads are designed as a tool to troubleshoot signal variability. The beads contain all of the chemical components needed to generate a strong AlphaScreen signal without the presence of AlphaScreen Donor or Acceptor beads	AlphaScreen Omnibeads	1,000 assay points	6760626D
		10,000 assay points	6760626M
		50,000 assay points	6760626R
Each Kit Contains: Biotinylated Acceptor beads, streptavidin Alpha Donor beads for identifying false positives	AlphaScreen TruHits Kit	1,000 assay points	6760627D
		10,000 assay points	6760627M

Microplates

PerkinElmer microplates, validated for use with AlphaScreen and AlphaLISA assays	AlphaPlate 384-well, light gray, opaque	50	6005350
	AlphaPlate 384-well, light gray, opaque	200	6005359
	AlphaPlate 384-well, light gray, opaque, shallow	50	6008350
	AlphaPlate 384-well, light gray, opaque, shallow	200	6008359
	AlphaPlate 1536-well, light gray, opaque	50	6004350
	AlphaPlate 1536-well, light gray, opaque	200	6004359
	1/2 Area Plate 96-well, white, opaque	50	6005560
	1/2 Area Plate 96-well, white, opaque	200	6005569
	ProxiPlate 96-well, white, opaque, shallow	50	6006290
	ProxiPlate 96-well, white, opaque, shallow	200	6006299
	ProxiPlate Plus 384-well, white, opaque, shallow	50	6006280
	ProxiPlate Plus 384-well, white, opaque, shallow	200	6006289
	OptiPlate 96-well, white, opaque	50	6005290
	OptiPlate 96-well, white, opaque	200	6005299
	OptiPlate 384-well, white, opaque	50	6007290
	OptiPlate 384-well, white, opaque	200	6007299
	OptiPlate 1536-well, white, opaque	50	6004290
	OptiPlate 1536-well, white, opaque	200	6004299
	CulturPlate 96-well, white, opaque, TC, sterile, w/lid	50	6005680
	CulturPlate 96-well, white, opaque, TC, sterile, w/lid	160	6005688
	CulturPlate 384-well, white, opaque, TC, sterile, w/lid	50	6007680
	CulturPlate 384-well, white, opaque, TC, sterile, w/lid	160	6007688
	CulturPlate 1536-well, white, opaque, TC, sterile, w/lid	50	6004680
	CulturPlate 1536-well, white, opaque, TC, sterile, w/lid	160	6004688

Alpha Technology: Scientific References

General

Wu X, Sills MA, and Zhang JH
Further comparison of primary hit identification by different assay technologies and effects of assay measurement variability.
J Biomol Screen. 2005 10(6):581-589

Bossé R, Illy C, Elands J, and Chelsky D
Miniaturizing screening: How low can we go today?
Drug Discov Today HTS supplement 2000; 42-47

Ullman EF, Kirakossian H, Switchenko AC, Ishkanian J, Ericson M, Wartchow C, Pirio M, Pease J, Irvin B, Singh S, Singh R, Patel R, Daffon A, Davalian D, Skold C, Kuran N, and Wagner D
Luminescent oxygen channeling assay (LOCI): sensitive, broadly applicable homogeneous immunoassay method.
Clin Chem. 1996; 42(9):1518-1526

Antibody Applications

Lazar GA, Dang W, Karki S, Vafa O, Peng JS, Hyun L, Chan C, Chung HS, Eivazi A, Yoder SC, Vielmetter J, Carmichael DF, Hayes RJ, and Dahiyat BI
Engineered antibody Fc variants with enhanced effector function.
PNAS 2006; 103(11):4005-4010

Biomarkers

Szekeres P, Leong K, Day T, Kingston A, and Karran E
Development of homogeneous 384-well high-throughput screening assays for A β 1-40 and A β 1-42 using AlphaScreen technology.
J Biomol Screen. 2008; 13(2):101-111

Sehr P, Pawlita M, and Lewis J
Evaluation of different glutathione S-transferase-tagged protein captures for screening E6/E6AP interaction inhibitors using AlphaScreen.
J Biomol Screen. 2007; 12(4):560-567

Beasley JR, Swanson R, Yang J, and Dunn D
Conversion of ELISA to no-wash technologies.
Poster: SBS 2007 Conference, Montreal

Poulsen F and Jensen KB
A luminescent oxygen channeling immunoassay for the determination of insulin in human plasma.
J Biomol Screen. 2007; 12(2):240-247

Majercak J, Ray WJ, Espeseth A, Simon A, Shi XP, Wolffe C, Getty K, Marine S, Stec E, Ferrer M, Strulovici B, Bartz S, Gates A, Xu M, Huang Q, Ma L, Shughrue P, Burchard J, Colussi D, Pietrak B, Kahana J, Behr D, Rosahl T, Shearman M, Hazuda D, Sachs AB, Koblan KS, Seabrook GR, and Stone DJ
LRRTM3 promotes processing of amyloid-precursor protein by BACE1 and is a positional candidate gene for late-onset Alzheimer's disease.
PNAS 2006; 103(47):17967-17972

Wilson J, Rossi CP, Carboni S, Fremaux C, Perrin D, Soto C, Kosco Vilbois M, and Scheer A
A homogeneous 384-well high-throughput binding assay for a TNF receptor using AlphaScreen technology.
J Biomol Screen. 2003; 8(5):522-532

DNA Quantification

Patel R, Pollner R, de Keczer S, Pease J, Pirio M, DeChene N, Dafforn A, and Rose S
Quantification of DNA using the luminescent oxygen channeling assay.
Clin Chem. 2000; 46(9):1471-1477

GPCRs

Leroy D, Missotten M, Waltzinger C, Martin T and Scheer A
G protein-coupled receptor-mediated ERK1/2 phosphorylation: towards a generic sensor of GPCR activation.
J Receptors Signal Transduct Res. 2007; 27(1):83-97

Elster L, Elling C, and Heding A
Bioluminescence resonance energy transfer as a screening assay: focus on partial and inverse agonism.
J Biomol Screen. 2007; 12(1):41-49

Osmond RI, Sheehan A, Borowicz R, Barnett E, Harvey G, Turner C, Brown A, Crouch MF, and Dyer AR
GPCR screening via ERK 1/2: a novel platform for screening G protein-coupled receptors.
J Biomol Screen. 2005; 10(7):730-737

Caruso ME, Jenna S, Beaulne S, Lee EH, Bergeron A, Chauve C, Roby P, Rual JF, Hill DE, Vidal M, Bossé R, and Chevet E
Biochemical clustering of monomeric GTPases of the Ras superfamily.
Mol Cell Proteomics. 2005; 4(7):936-944

Williams C
cAMP detection methods in HTS: selecting the best from the rest.
Nat Rev Drug Discov. 2004; 3(2):125-135

Gabriel D, Vernier M, Pfeifer MJ, Dasen B, Tenaillon L, and Bouhelal R
High-throughput screening technologies for direct cyclic AMP measurement.
Assay Drug Dev Technol. 2003; 1(2):291-303

Gray A, Olsson H, Batty IH, Priganica L, and Peter Downes C
Nonradioactive methods for the assay of phosphoinositide 3-kinases and phosphoinositide phosphatases and selective detection of signaling lipids in cell and tissue extracts.
Anal Biochem. 2003; 313(2):234-245

Kinases

Binder C, Lafayette A, Archibeque I, Sun Y, Plewa C, Sinclair A, and Emkey R
Optimization and utilization of the SureFire[®] phospho-STAT5 assay for a cell-based screening campaign.
Assay and Drug Dev Technol. 2008; 6(1):27-37

Burns S, Travers J, Collins I, Rowlands MG, Newbatt Y, Thompson N, Garrett MD, Workman P, and Aherne W
Identification of small-molecule inhibitors of protein kinase B (PKB/AKT) in an AlphaScreen high-throughput screen.
J Biomol Screen. 2006; 11(7):822-827

Stokka AJ, Gesellchen F, Carlson CR, Scott JD, Herberg FW, and Taskén K
Characterization of A-kinase anchoring disruptors using a solution-based assay.
Biochem J. 2006; 400(3):493-499

Delom F and Chevet E
Phosphoprotein analysis: from proteins to proteomes.
Proteome Sci. 2006; 4:15.

Guenat S, Rouleau N, Bielmann C, Bedard J, Maurer F, Allaman-Pillet N, Nicod P, Bielefeld-Sevigny M, Beckmann JS, Bonny C, Bossé R, and Roduit R
Homogeneous and nonradioactive high-throughput screening platform for the characterization of kinase inhibitors in cell lysates.
J Biomol Screen. 2006; 11(8):1015-1026

Warner G, Illy C, Pedro L, Roby P, and Bossé R
AlphaScreen kinase HTS platforms.
Curr Med Chem. 2004; 11(6):721-730

Von Leoprechting A, Kumpf R, Menzel S, Reulle D, Griebel R, Valler MJ, and Buttner FH
Miniaturization and validation of a high-throughput serine kinase assay using the AlphaScreen platform.
J Biomol Screen. 2004; 9(8):719-725

Li Y, Cummings RT, Cunningham BR, Chen Y, and Zhou G
Homogeneous assays for adenosine 5'-monophosphate-activated protein kinase.
Anal Biochem. 2003; 321(2):151-156

Nishzuka Y
Intracellular signaling by hydrolysis of phospholipid and activation of protein kinase C.
Science. 1992; 258(5082):607-614. Review

Nuclear Receptors

Wagstaff K and Jans D
Intramolecular masking of nuclear localization signals: analysis of importin binding using a novel AlphaScreen-based method.
Anal Biochem. 2006; 348(1):49-56

Rouleau N, Turcotte S, Mondou MH, Roby P, and Bossé R
Development of a versatile platform for nuclear receptor screening using AlphaScreen.
J Biomol Screen. 2003; 8(2):191-197

Wu X, Glickman JF, Bowen BR, and Sills MA
Comparison of assay technologies for a nuclear receptor assay screen reveals differences in the sets of identified functional antagonists.
J Biomol Screen. 2003; 8(4):381-392

Glickman JF, Wu X, Mercuri R, Illy C, Bowen BR, He Y, and Sills M
A comparison of ALPHAScreen, TR-FRET and TRF as assay methods for FXR nuclear receptors.
J Biomol Screen. 2002; 7(1):3-10

Xu HE, Stanley TB, Montana VG, Lambert MH, Shearer BG, Cobb JE, McKee DD, Galardi CM, Plunket KD, Nolte RT, Parks DJ, Moore JT, Klier SA, Willson TM, and Stimmel JB
Structural basis for antagonist-mediated recruitment of nuclear co-repressors by PPAR.
Nature. 2002; 415: 813-817

Proteases

Peppard J, Glickman F, He Y, Hu SI, Doughty J, and Goldberg R
Development of a high-throughput screening assay for inhibitors of aggrecan cleavage using luminescent oxygen channeling (AlphaScreen).
J Biomol Screen. 2003; 8(2):149-156

Hamilton AC, Inglese J, and Ferrer M
A PDZ domain-based assay for measuring HIV protease activity: assay design considerations.
Protein Sci. 2003; 12(3):458-467

Protein:Protein Interactions

Rouleau N, Wang J, Karras L, Andrews E, Bielefeld-Sevigny M, and Chen Y.
Highly sensitive assays for SUMOylation and small ubiquitin-like modifier-dependent protein-protein interactions.
Anal Biochem. 2008; 375(2):364-366

Kadkhodayan S, Elliott L, Mausisa G, Wallweber A, Deshayes K, Feng B, and Fairbrother W
Evaluation of assay technologies for the identification of protein-peptide interaction antagonists.
Assay Drug Dev Technol. 2007; 5(4):501-513

Sehr P, Pawlita M, and Lewis J
Evaluation of different glutathione S-transferase-tagged protein captures for screening E6/E6AP interaction inhibitors using AlphaScreen.
J Biomol Screen. 2007; 12(4):560-567

Moll D, Prinz A, Gesellchen F, Drewianka S, Zimmermann B, and Herberg FW
Biomolecular interaction analysis in functional proteomics.
J Neural Transm. 2006; 113:1015-1032

Single Nucleotide Polymorphism (SNP) Detection

Tsuchihashi Z and Dracopoli NC
Progress in high-throughput SNP genotyping methods.
Pharmacogenomics J. 2002; 2(2):103-110. Review

Beaudet L, Bedard J, Breton B, Mercuri RJ, and Budarf ML
Homogeneous assays for single-nucleotide polymorphism typing using AlphaScreen.
Genome Res. 2001; 11(4):600-608

Ubiquitin Ligases

Kus B, Gajadhar A, Stanger K, Cho R, Sun W, Rouleau N, Lee T, Chan D, Wolting C, Edwards A, Bossé R, and Rotin D
A high-throughput screen to identify substrates for the ubiquitin ligase Rsp5.
J Biol Chem. 2005; 280(33):29470-29478

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