

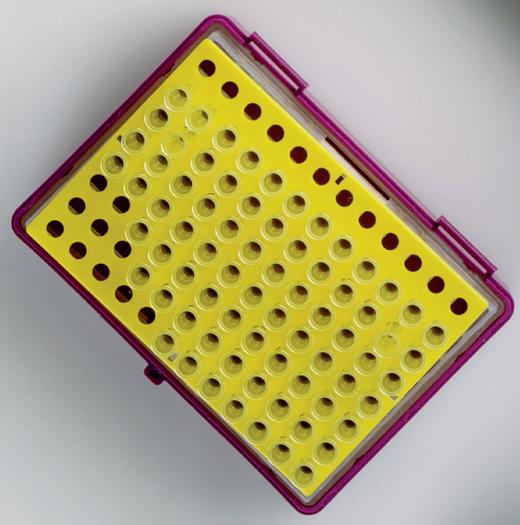
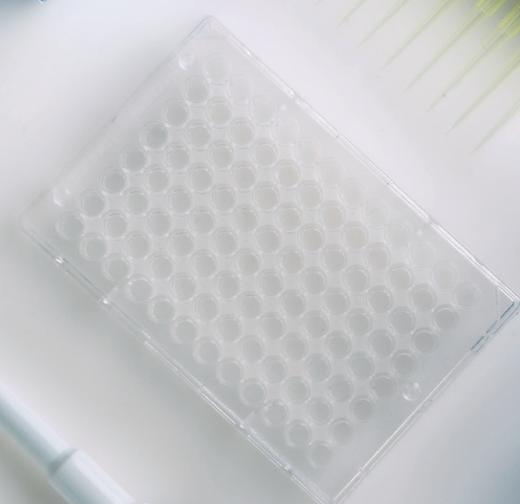
ANASPEC

# Protein iDentification

For Life Science Research

- > **Recombinant** proteins
- > **Labeling** kits and reagents
- > **Assay** kits





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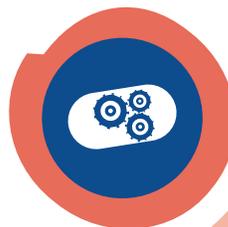
## COMPREHENSIVE OFFER

Our extensive experience in the synthesis of dyes and peptide-based substrates for assay development lends us a unique understanding of your detection needs and challenges.

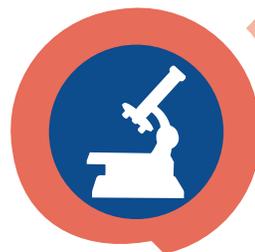
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## CUSTOM & CATALOG INNOVATION

We are actively committed to developing new products and improving our existing products and services to help solving your detection issues and saving you time.



**Recombinant protein**  
manufacturing  
service and *in vitro*  
production kits



**Fluorescent  
Dye Labeling  
Kits & Detection  
Reagents**



**iD Sensolyte<sup>®</sup> FRET  
based assays,**  
assay development  
and protein labeling  
services

## Protein iDentification

Recombinant proteins

Fluorescent dyes  
and reagents

Assay kits

- p5 **Recombinant proteins**
- p5 *Custom recombinant protein production*
- p6 *Catalog recombinant proteins*
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- p7 *Labeling components and kits*
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## Annexes

- p23 *How to order / Trademarks / Related products / License statements*

# Recombinant proteins

## DID YOU KNOW

The Eurogentec Biologics division performs the production of GMP proteins for pharmaceutical use and commercialization.  
<http://biologics.eurogentec.com>

## ALSO AVAILABLE

- > Protein Labeling with Fluorescent dyes, and quenchers
- > Protein-peptide conjugation (KLH, BSA, OVA)

## ⇒ CUSTOM RECOMBINANT PROTEIN PRODUCTION

EGT produces research grade recombinant proteins according to the customer's specifications. The protein production can be performed in various hosts such as *Escherichia coli*, HEK or CHO cells.

While larger projects can be performed, the typical protein amount produced is 2 to 10 mg and a classical application is the use of the recombinant protein as antigen for antibody generation.

The protein can be delivered with a purity level from 85% up to more than 90%. Additionally, we can label the protein with tags and dyes.

Each project begins with a discussion prior to gene optimization, cloning and expression. A pilot phase is always performed to determine the gene expression level. Only fulfilled steps

To start discussing your project, please contact us at [proteomics.services@egt-biotech.com](mailto:proteomics.services@egt-biotech.com)

are invoiced.



**PUREfres™**

Cell-free protein production systems aim at producing small amounts of proteins *in vitro* in only 2 to 4 hours. They correspond to a reconstituted *E.coli* transcription/translation machinery which only requires the DNA sequence encoding the target protein in a T7-based system.

It works optimally for producing bacterial proteins, and favors the use of DNA sequences optimized for *E.coli* codon usage.

Our PUREfres™ kit is designed to perform 10 reactions of 25µL each.

 GeneFrontier



### ORDERING INFORMATION

Description	Amount	Catalog#
PUREfres™	250 µL	PS-PF001-025

# CATALOG RECOMBINANT PROTEINS

Our catalog recombinant proteins cover the most common proteins mainly related to neurosciences and cancer research. Our portfolio includes Myelin Oligodendrocyte

Glycoprotein (MOG) (Multiple sclerosis), Tau (Alzheimer's disease), Synuclein and DJ-1 (Parkinson's disease) and MMP's (tissue remodeling). ■



## ORDERING INFORMATION

Product	Quantity	Size	Product	Quantity	Size
<b>Parkinson's</b>			<b>Multiple sclerosis</b>		
<b>DJ-1</b>			<b>Myelin Oligodendrocyte Glycoprotein</b>		
AS-72219-10	DJ-1 (PARK7), Recombinant human	10 µg	AS-55150-100	Recombinant mouse MOG (1-125)	100 µg
AS-72219-100	DJ-1 (PARK7), Recombinant human	100 µg	AS-55150-500	Recombinant mouse MOG (1-125)	500 µg
AS-72219-500	DJ-1 (PARK7), Recombinant human	500 µg	AS-55150-1000	Recombinant mouse MOG (1-125)	1000 µg
AS-72220-10	DJ-1 (PARK7), Recombinant human, GST Tagged	10 µg	AS-55152-100	Recombinant rat MOG (1-125)	100 µg
AS-72220-100	DJ-1 (PARK7), Recombinant human, GST Tagged	100 µg	AS-55152-500	Recombinant rat MOG (1-125)	500 µg
<b>Synuclein</b>			AS-55152-1000	Recombinant rat MOG (1-125)	1000 µg
AS-55555-100	*EndoClear™ Recombinant human alpha-Synuclein	100 µg	AS-55158-100	Recombinant human MOG (1-125)	100 µg
AS-55555-500	*EndoClear™ Recombinant human alpha-Synuclein	500 µg	AS-55158-500	Recombinant human MOG (1-125)	500 µg
AS-55555-1000	*EndoClear™ Recombinant human alpha-Synuclein	1 mg	AS-55158-1000	Recombinant human MOG (1-125)	1000 µg
AS-56081-100	*EndoClear™ Plus Recombinant human alpha-Synuclein	100 µg	<b>Cardiovascular</b>		
AS-56081-500	*EndoClear™ Plus Recombinant human alpha-Synuclein	500 µg	<b>Renin</b>		
AS-55581	Recombinant alpha-synuclein (1-140), biotin labelled	200 µg	AS-72041	Human Renin, Recombinant	5 µg
AS-55457	Recombinant alpha-synuclein (1-140), HiLyte™ Fluor488 labelled	200 µg	AS-72141	Rat Renin, Recombinant	20 µg
AS-56082-100	*EndoClear™ mouse recombinant a-Synuclein protein	100 µg	AS-72174	Mouse Prorenin, Recombinant	20 µg
AS-56082-1000	*EndoClear™ mouse recombinant a-Synuclein protein	1000 µg	<b>Epigenetics</b>		
AS-56082-500	*EndoClear™ mouse recombinant a-Synuclein protein	500 µg	<b>Sirtuin</b>		
AS-56083-100	*EndoClear™ rat recombinant a-Synuclein protein	100 µg	AS-72187	Human Sirtuin 2, Recombinant	10 µg
AS-56083-1000	*EndoClear™ rat recombinant a-Synuclein protein	1000 µg	AS-72212	Human Sirtuin 1, Recombinant	10 µg
AS-56083-500	*EndoClear™ rat recombinant a-Synuclein protein	500 µg	<b>Viral &amp; bacterial Proteases</b>		
AS-55458-100	Recombinant human beta-Synuclein (1-134)	100 µg	<b>Virus</b>		
AS-55458-500	Recombinant human beta-Synuclein (1-134)	500 µg	AS-61017-5	HCV NS3/4A protease genotype 1b, recombinant	5 µg
AS-55458-1000	Recombinant human beta-Synuclein (1-134)	1 mg	AS-61017-10	HCV NS3/4A protease genotype 1b, recombinant	10 µg
<b>Cancer &amp; Apoptosis</b>			AS-72028-5	HIV-1 Protease, recombinant	5 µg
<b>Matrix Metalloproteinases</b>			AS-72081-5	West Nile Virus NS3 Protease, recombinant	5 µg
AS-72004	Human MMP-1	100 µL	AS-72081-100	West Nile Virus NS3 Protease, recombinant	100 µg
AS-72005	Human MMP-2	100 µL	<b>Bacteria</b>		
AS-72006	Human MMP-3	100 µL	AS-72229	Sortase A protease, Recombinant	10 µg
AS-72007	Human MMP-7	100 µL	<b>Also available: Cell Extracts</b>		
AS-72008	Human MMP-8	100 µL	AS-29515	3T3 Whole Cell Lysate	200 µg
AS-72067	Human MMP-10	100 µL	AS-29517	Hela Whole Cell Lysate	200 µg
AS-72068	Human MMP-24	100 µL	AS-29519	MCF-7 Whole Cell Lysate	200 µg
AS-55575-1	Human MMP-1 (Recombinant, Catalytic Domain)	1 µg	AS-29520	HEK293 Whole Cell Lysate	200 µg
AS-55575-10	Human MMP-1 (Recombinant, Catalytic Domain)	10 µg	AS-55362	Raji Whole Cell Lysate	200 µg
AS-55576-1	Human MMP-9 (Recombinant, Catalytic Domain)	1 µg	<b>GOOD TO KNOW</b>		
AS-55576-10	Human MMP-9 (Recombinant, Catalytic Domain)	10 µg	* EndoClear™ and EndoClear™Plus are new grades of recombinants proteins containing <b>low endotoxin level</b> .		
AS-55576-50	Human MMP-9 (Recombinant, Catalytic Domain)	50 µg	Most commercial recombinant proteins produced in bacteria contain inherent/residual endotoxin concentrations that create a variety of problems for researchers using cell culture. Working with low level of endotoxin solution <b>minimizes potential negative effects</b> .		
AS-55884-1	Mouse MMP-9 (Recombinant, Catalytic Domain)	1 µg	We provide two levels of Low Endotoxin alpha Synuclein protein:		
AS-55884-10	Mouse MMP-9 (Recombinant, Catalytic Domain)	10 µg	· EndoClear™ Alpha Synuclein : 0.1 EU/ug protein		
AS-55884-50	Mouse MMP-9 (Recombinant, Catalytic Domain)	50 µg	· EndoClear™Plus Alpha Synuclein : 0.001 EU/ug protein		
AS-55525-1	Human MMP-12 (Recombinant, Catalytic Domain)	1 µg			
AS-55525-10	Human MMP-12 (Recombinant, Catalytic Domain)	10 µg			
AS-55525-50	Human MMP-12 (Recombinant, Catalytic Domain)	50 µg			
AS-72257	Human MMP-13 (Recombinant, Catalytic Domain)	1 µg			
<b>Alzheimer's</b>					
<b>Tau</b>					
AS-55556-100	Tau (Tau-441), human recombinant	100 µg			
AS-55556-50	Tau (Tau-441), human recombinant	50 µg			
AS-55557-100	Tau (Tau-441), human recombinant, GST tagged	100 µg			
AS-55557-50	Tau (Tau-441), human recombinant, GST tagged	50 µg			



# Dyes & labeling reagents

Fluorescent reagents are used extensively to trace the presence of biomolecules in cells and other biological systems. The great advancement of fluorescence reagents has promoted a host of more complex fluorescence technologies such as fluorescence resonance energy transfer (FRET), time-resolved fluorescence (TR F), fluorescence polarization (FP), fluorescence recovery after photobleaching (FRAP), fluorescence activated cell sorting (FACS) and fluorescence correlation spectroscopy (FCS). Excitation and emission wavelength, fluorescence quantum yield, fluorescence lifetime, size, photostability and biological functionality are important factors to be considered in selection of a desired fluorescent probe for your applications. ■

## ⇒ LABELING COMPONENTS AND KITS

We are pleased to support the scientific community by providing a broad range of premium stand-alone reactive dyes, fluorophore-quencher pairs and AnaTag™ labeling kits for varied labeling and detection applications. ■



## Dyes

Dyes are widely used to modify amino acids, peptides, proteins (in particular, antibodies), oligonucleotides, nucleic acids, carbohydrates etc, and to detect cellular organelles and molecules.

CyLyte Dyes are dyes from AnaSpec which are cost effective alternative to the popular Cy® dyes. HiLyte™ Fluor dyes are not affected by pH, making them an ideal choice when your application requires fluorescent detection at high or low pH (4-11).



### ORDERING INFORMATION

PRODUCT NAME	abs/em (nm)	CAT#					
		Acid	Hydrazide	Succinimidyl ester (NHS)	Amine	C2 Maleimide	Hydroxylamine
HiLyte™ Fluor 488	497/525	AS-81160	AS-81163	AS-81161-1	AS-81162 <sup>1</sup>	AS-81164	AS-64348 <sup>2</sup>
HiLyte™ Fluor 532	545/565	AS-89340	AS-89343	AS-89341	AS-89344	AS-89342	/
HiLyte™ Fluor 555	550/566	AS-81250	/	AS-81251	AS-81252	AS-81254	/
HiLyte™ Fluor 647	650/675	AS-81255	/	AS-81256	AS-81257	AS-81259	/
HiLyte™ Fluor 750	753/778	/	AS-81268	AS-81266	AS-81267	AS-81269	/
CyLyte Fluor 3	550/564	AS-89353	/	AS-89356	/	/	/
CyLyte Fluor 5	648/663	AS-89354	/	AS-89357	/	/	/
CyLyte Fluor 7	750/773	AS-89355	/	AS-89358	/	/	/

<sup>1</sup> TFA salt

<sup>2</sup> HCl salt \*single isomer\*

\* Please visit [www.anaspec.com](http://www.anaspec.com) to be aware of product size availability

## FRET

Our full spectrum of dyes (see p7 above) can be paired with our QXL® quenchers for use in FRET. FRET (fluorescence resonance energy transfer) occurs between two molecules (proteins, peptides, DNA...) tagged with a donor and an acceptor respectively when placed within 10-100

Å of each other.

It results in the quenching of the donor fluorescence by the acceptor after donor excitation. Spatial separation of the donor and acceptor results in the recovery of the donor fluorescence.

## BENEFITS

- > Full spectrum covering all detection channels
- > Several reactive (amine, thiol, carbonyl) forms available

## APPLICATIONS

- > 2-photon/confocal microscopy
- > Flow cytometry
- > *In-vivo* imaging
- > HTS detection of proteases
- > Protein-peptide interaction

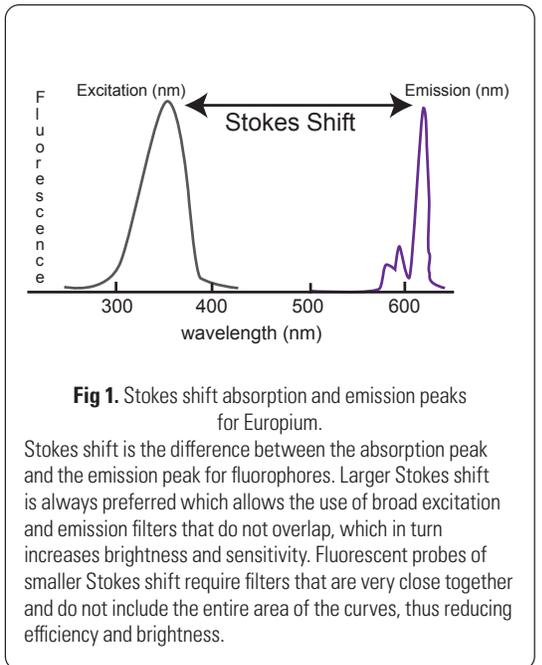
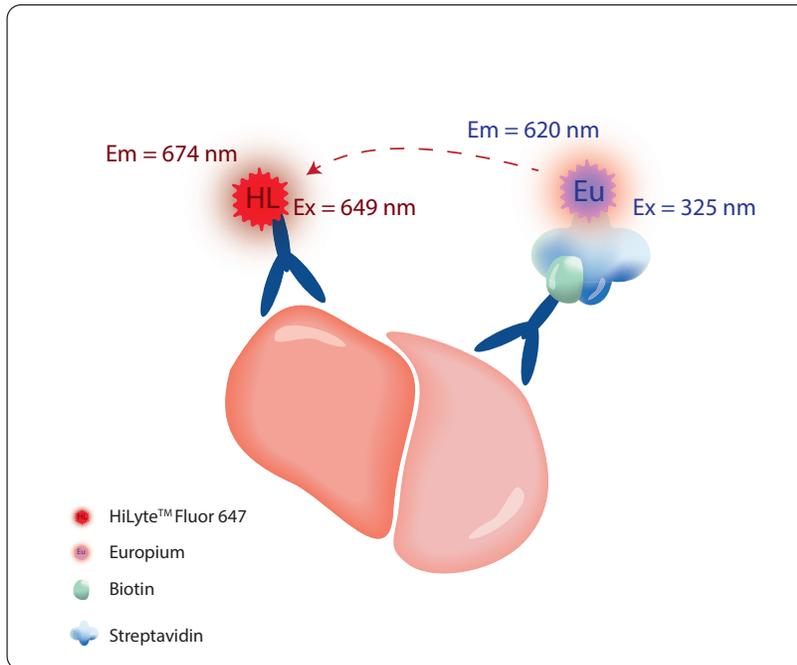
Dye*	Dye Ex/ Em (nm)	Quencher	Max Quencher Absorbance (nm)
Mca	325/393	Dnp	350
EDANS	335/493	DABCYL, DABCYL Plus™ QXL® 490	472 485 485
FAM	492/518	QXL®520**	508-530
FITC	494/519	QXL®520**	508-530
HiLyte™ Fluor 488	502/527	QXL®520**	508-530
CyLyte Fluor 3	554/568	QXL®570	577
HiLyte™ Fluor 532	545/565	QXL®570	577
HiLyte™ Fluor 555	552/569	QXL®570	577
TAMRA	547/574	QXL®570	577
ROX	568/591	QXL®610**	628
HiLyte™ Fluor 647	649/674	QXL®670	668
CyLyte Fluor 5	649/666	QXL®670	668
CyLyte Fluor 7	750/773	IR-QXL®**	772

\*All dyes listed in this table can be used as stand alone fluorescent tag \*\*Available only for custom service

## TR-FRET

TR-FRET is a combination of Time Resolved Fluorescence (TRF) and Forster's Resonance Energy Transfer (FRET) technologies. This method offers the advantages of reducing background noise and providing a higher sensitivity and reliability than the FRET method. In TR-FRET instead of a fluorescent dye, the donor molecule is a

Lanthanide metal such as Terbium (Tb) and Europium (Eu). Their fluorescence is long-lived and is characterized by a large Stokes shift providing a high signal-to-noise ratio due to minimal crosstalk between excitation and emission wavelengths. ■



**Fig 1.** Stokes shift absorption and emission peaks for Europium.

Stokes shift is the difference between the absorption peak and the emission peak for fluorophores. Larger Stokes shift is always preferred which allows the use of broad excitation and emission filters that do not overlap, which in turn increases brightness and sensitivity. Fluorescent probes of smaller Stokes shift require filters that are very close together and do not include the entire area of the curves, thus reducing efficiency and brightness.

## BENEFITS

- > Ideal for HTS
- > Large dynamic range
- > High sensitivity
- > Low interference

## ASSAY DESIGN & DEVELOPMENT

- > Preparation of substrates Labeled with
- > Europium and/or HiLyte™ Fluor 647
- > Validation of assay with inhibitor(s) or biological compounds
- > Detailed step by step assay protocol.

## APPLICATIONS

- > FRET/TR-FRET substrates for protease activity detection
- > Protease based drug target screening and discovery
- > Protein-peptide interaction
- > Protein-protein interaction

### TR-FRET pair

Donor	Ex/Em	Acceptor
Europium chelate	325/620 nm	HiLyte™ Fluor 647
Europium chelate	325/620 nm	CyLyte Fluor 5

### GOOD TO KNOW

Typically biological samples generate fluorescence (proteins, antibodies, cells or tissues) that can interfere with the assay observations and therefore decrease the assay sensitivity.

TR (time-resolved) based assay technologies eliminate the background noise by choosing a longer detection interval after excitation, therefore increasing the assay sensitivity.

# AnaTag™ protein labeling kits

AnaTag™ kits provide a convenient way to label your proteins, such as those used as reagents in immunofluorescence staining, fluorescence *in situ* hybridization, flow cytometry and other biological applications.

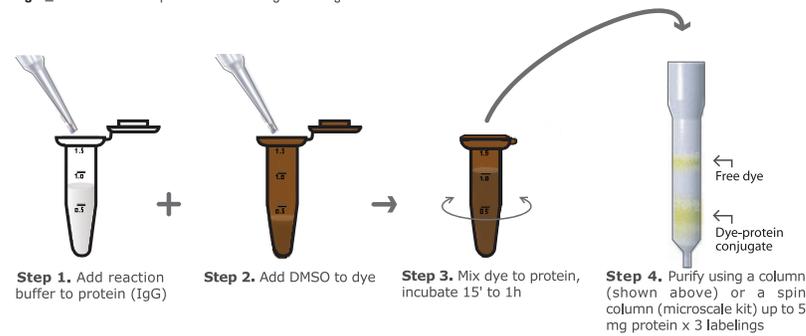
**Note:** APC, B-PE, and R-PE fluorescent protein kits, make use of a SMCC conjugation method.

The kits use succinimidine ester (NHS ester) conjugates, which react with the amine groups of the target protein to form stable carboxamide bonds. **Please note that AnaTag™ are not convenient to label peptides.**

## BENEFITS

- > FAST labeling
- > STABLE dye-protein conjugations
- > CONVENIENT format
- > ALL ESSENTIAL components for conjugation reactions and purification of dye-protein conjugates available.

**Fig.2**\_ Scheme for fluorophore/biotin AnaTag™ labeling kits.



## ORDERING INFORMATION

Label	Abs/Em (nm)	Catalog #	
		REACTION SIZE	REACTION SIZE
		3 x 5 mg	3 x 200 µg
<b>FLUOROPHORES</b>			
AMCA-X	353/442	AS-72055	AS-72056
5-FITC	494/519	AS-72059	AS-72060
HiLyte™ Fluor 488	502/527	AS-72047	AS-72048
5 TAMRA	547/574	AS-72063	AS-72064
HiLyte™ Fluor 555	552/569	AS-72045	AS-72046
HiLyte™ Fluor 647	649/674	AS-72049	AS-72050
HiLyte™ Fluor 750	754/778	AS-72043	AS-72044
<b>FLUORESCENT PROTEINS</b>			
APC	650/660	AS-72111 (1x1mg)	n.a.
B-PE	545/575	AS-72112 (1x1mg)	n.a.
R-PE	565/575	AS-72113 (1x1mg)	n.a.
<b>BIOTIN</b>			
Biotin	n.a.	AS-72057 (3x10mg)	AS-72058
Europium chelate	325/620 nm	n.a.	AS-72246 (1x200 µg)
<b>TR-FRET</b>			
Europium chelate & HiLyte™ Fluor 647	Eu: 325/620 nm HL 647: 649/674 nm	n.a.	AS-72247 (HL: 1x200 µg, Eu: 1x 200 µg)

Mca  
AMC  
  
AFC  
EDANS  
  
5-FAM  
FITC  
Rh110  
HiLyte™ Fluor 488

HiLyte™ Fluor 532  
HiLyte™ Fluor 555  
CyLyte Fluor 3

TAMRA

Rox

CyLyte Fluor 5  
HiLyte™ Fluor 647

CyLyte Fluor 7  
HiLyte™ Fluor 750

## ➔ FLUORESCENT PROTEINS AND REAGENTS

Our extensive repository of fluorescent proteins and reagents used in conjugation applications include:

- Biotinylating reagents (targeting several functional groups),
- Biotin-binding affinity-purified streptavidins,
- Fluorescent tags and their conjugates including phycobiliproteins and recombinant protein A applicable for a variety of conjugation-specific cellular and immune functional studies. ■

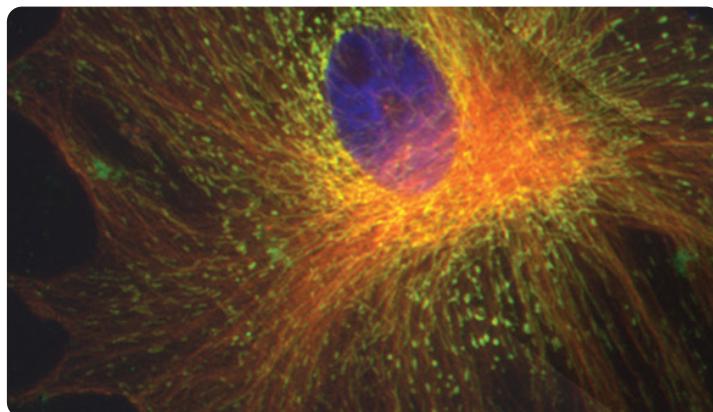


Fig.3\_alpha-tubulins of bovine pulmonary artery endothelial cells probed with biotin-conjugated mouse anti-alpha-tubulin, visualized with HiLyte Fluor™ 647 conjugated streptavidin. Mitochondria were detected with mouse anti-Oxphos V complex, visualized with HiLyte Fluor™ 488-conjugated goat anti-mouse, nuclei stained with DAPI.

## Biotins

The streptavidin-biotin interaction, at a dissociation constant of (Kd) on the order of  $\sim 10^{-14}$  mol/L is one of the strongest non-covalent interactions known in nature, typically occurring between

a protein and a ligand. The complex is resistant to pH, organic solvents and other denaturing agents making this interaction very stable and hence attributes to its importance in a number

of biological applications including Western blotting, IHC, ELISA and FACS.



### ORDERING INFORMATION

	APPLICATIONS	PRODUCT	Abs/Em (nm)	CAT #
The basics	Biomolecules labeling and further detection with streptavidin/avidin	Biotin (d-Biotin)	n.a.	AS-21100 AS-21101
	More polar than biotin; used for cell tracing	Biocytin	n.a.	AS-60638
	The long chain (LC) helps reduce the sterical hindrance when binding to avidins	Biotin-LC	n.a.	AS-21112
		Biotin-X NTA	n.a.	AS-60655
The reactive forms	For carbohydrates and nucleic acids: reacts with exposed aldehyde groups formed in damaged DNA	ARP	n.a.	AS-60645
	Carboxy and carbonyl groups-reactive; substrate for transglutaminase	Biotin cadaverine	n.a.	AS-60648
	Thiol-reactive	N-(Biotinoyl)-N'-(iodoacetyl) ethylenediamine	n.a.	AS-60644
Fluorescent biotins	Green fluorescence	Biotin fluorescein	494/518	AS-60656
	Better binding and stronger fluorescence than Biotin fluorescein	Biotin-4-fluorescein	494/523	AS-60654
	Orange fluorescence	Biocytin TMR	554/581	AS-60658
Biotin quantitation kits		Biotin Quantitation Kit	n.a.	AS-72096
		SensoLyte® Biotin Quantitation Kit	n.a.	AS-72163



# Streptavidin and Conjugates

# Phycobiliproteins and Conjugates

Phycobiliproteins are natural fluorescent proteins present in cyanobacteria and some algae. B-PE and the closely related R-PE are the most intensively fluorescent ones. They are significantly brighter and more photostable than conventional organic dyes.

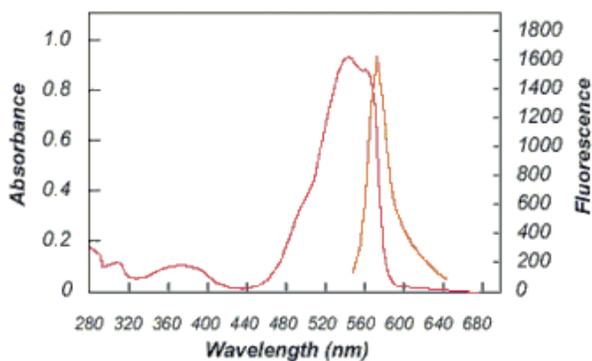


Fig. 4\_Spectra of B-Phycocyanin analysis or primary antibodies in IHC.

# Recombinant Protein A Conjugates

Protein A binds to the Fc domain of IgG's from most mammals. When conjugated to biotin or fluorescent dyes, it can be used as a universal detection reagent for primary antibodies.



## ORDERING INFORMATION

PRODUCT	Abs/Em (nm)	CAT #
<b>Immuno-fluorescence assays</b>		
Streptavidin	n.a.	AS-60659
Streptavidin, recombinant	n.a.	AS-72177-5 AS-72177-100 AS-72177-500 AS-72177-1000
Streptavidin, HRP conjugated	n.a.	AS-60668
Streptavidin, 5 - TAMRA conjugated	541/568	AS-60670
Streptavidin, FITC conjugated	495/520	AS-60659-FITC
Streptavidin, HiLyte™ Fluor 488 conjugated	495/524	AS-60665
Streptavidin, HiLyte™ Fluor 555 conjugated	555/565	AS-60666
Streptavidin, HiLyte™ Fluor 647 conjugated	650/668	AS-60667
Streptavidin, HiLyte™ Fluor 750 conjugated	754/778	AS-60659-H750
Streptavidin, B - phycoerythrin conjugated	545/575	AS-60662
Streptavidin, crosslinked allophycocyanin conjugated	652/662	AS-60663
Streptavidin, R - phycoerythrin conjugated	565/575	AS-60669
Streptavidin, Europium Labeled	325/620	AS-72252
<b>Kit</b>		
HiLyte™ Fluor Labeled Streptavidin Sampler Kit Content: HiLyte™ Fluor 488, 555 and 647 conjugated streptavidin	-	AS-72003-20



## ORDERING INFORMATION

### APPLICATIONS

Excellent fluorescent tags for versatile labeling owing to bright signals, large Stokes shift and low quenching properties. Applicable in flow cytometry and immunoassays.

PRODUCT	Abs/Em (nm)	CAT #
B - PE (B - Phycoerythrin)	545/575	AS-82001
C - PC (C - Phycocyanin)	616/647	AS-82003
CL - APC (Cross Linked - Allophycocyanin)	651/662	AS-82002
R - PE (R - Phycoerythrin)	565/575	AS-82004
SMCC Activated CL-APC (Cross Linked-Allophycocyanin)	651/662	AS-72108
SMCC Activated B-PE (B-Phycoerythrin)	545/575	AS-72109
SMCC Activated R-PE (R-Phycoerythrin)	565/575	AS-72110

### APPLICATIONS

Fluorescent Protein A can be used for Western Blotting, immunohistochemistry and immunofluorescence.



## ORDERING INFORMATION

PRODUCT	Abs/Em (nm)	CAT #
Protein A-Biotin Conjugate	n.a.	AS-72234
Protein A-HiLyte™ Fluor 488 Conjugate	499/523	AS-72235
Protein A-HiLyte™ Fluor 555 Conjugate	553/568	AS-72236
Protein A-HiLyte™ Fluor 647 Conjugate	649/674	AS-72237
Protein A-HiLyte™ Fluor 750 Conjugate	754/778	AS-72239

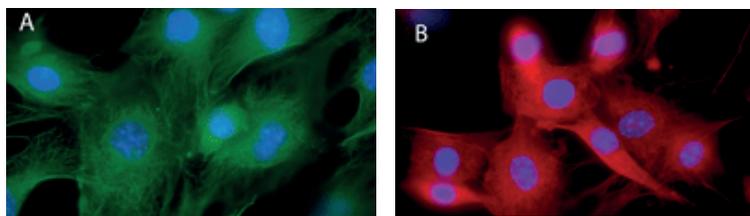


Fig.4\_3T3 cells stained with Rabbit anti-Tubulin IgG followed by Protein A-HiLyte™ Fluor 488 (A) and Protein A-HiLyte™ Fluor 647 (B).

## PHYSIOLOGICAL AND NEUROLOGICAL INDICATORS

The use of molecular fluorescence for sensing physiological and neurological signals offers several advantages. Among these are high sensitivity (down to the single molecule), on-off switchability, and submillisecond temporal resolution. We offer a quality selection of physiological and neurological indicators (such as Fura-2, Indo-1, and Rhod-2). Our UltraPure Grade AM

esters of fluorescent indicators are typically at least 95% pure by HPLC analysis, although purity often exceeds 98%. Furthermore, we offer custom package service for the AM esters of many of our  $\text{Ca}^{2+}$  indicators within minimal charge for your convenience and for reduced risk of deterioration during storage. ■

## Enzyme substrates

### APPLICATIONS

Enzyme substrates	Protease-catalysed hydrolysis slowly yields brightly green fluorescent dye-labeled peptides. More slowly digested by MMP-1 than water-soluble collagen, but it is more specific for the enzyme
	Used for quick fluorometric measurement of collagenase activity; useful for detecting MMP-1 activity
	Useful for screening Gelatinase A (MMP-2) and Gelatinase A inhibitors, as well as for other gelatinases and collagenases that specifically degrade (Type IV) Collagen. Additionally, lightly fluorescein-labeled collagen may be useful for continuous assays monitored by fluorescence polarisation
	Fluorometric measurement of elastase activity. This insoluble elastin derivative is more specific for elastase than AS-85113
	Soluble bovine neck ligament elastin
	Efficiently digested by gelatinases and collagenases
	Chromogenic N-acetylgalactosaminidase substrate
	Cell-permeable substrate of oxidases (including peroxidase)
	Generic substrate of oxidases (including peroxidase) in mitochondria
	Sensitive and stable fluorogenic substrate for HRP but also an ultrasensitive probe for $\text{H}_2\text{O}_2$ . In the presence of HRP and $\text{H}_2\text{O}_2$ , ADHP generates highly fluorescent resorufin
	Luminescent substrate for firefly luciferase
	One of the most sensitive fluorogenic substrates available for detecting $\beta$ -galactosidase
	Unlike FDG that requires a two-step hydrolysis to generate maximum fluorescence, resorufin $\beta$ -D-galactopyranoside requires only a single-step hydrolysis reaction. This substrate is especially useful for sensitive enzyme measurements in ELISAs.
	Resorufin ethyl ether is a fluorogenic cytochrome P-450 substrate that generates red fluorescent product upon enzyme cleavage
	Resorufin methyl ether is a fluorogenic cytochrome P-450 substrate that generates red fluorescent product upon enzyme cleavage
Resorufin pentyl ether is a fluorogenic cytochrome P-450 substrate that generates red fluorescent product upon enzyme cleavage	



ORDERING INFORMATION		
PRODUCT	Abs/Em (nm)	CAT #
Collagen (Type I), FITC conjugated *Water Insoluble*	492/515	AS-85102
Collagen (Type I), FITC conjugated *Water Soluble*	492/515	AS-85111
Collagen (Type IV), FAM conjugated	492/515	AS-85112
Elastin, FITC-Conjugated *Water Insoluble*	492/515	AS-85103
Elastin, FITC Conjugated	492/515	AS-85113
Gelatin, FITC Conjugated	492/515	AS-85145
4-Nitrophenyl-N-acetyl-b-D-galactosaminide	399/NA	AS-85618
H2-DCFDA	495/529	AS-85706
Dihydrorhodamine 123	507/529	AS-85711
ADHP	573/590	AS-85500
D-Luciferin, free acid *UltraPure Grade*	328/532	AS-82250
D-Luciferin, potassium salt *UltraPure Grade*	328/532	AS-82252
FDG [Fluorescein di-b-D-galactopyranoside]	492/520	AS-85600
Resorufin b-D-Galactopyranoside	573/585	AS-85617
Ethoxyresorufin	571/585	AS-85715
Methoxyresorufin	571/585	AS-85707
Pentoxyresorufin	571/585	AS-85728

# Fluorescent indicators

## APPLICATIONS



## ORDERING INFORMATION

		PRODUCT	Abs/Em (nm)	CAT #
Intracellular pH indicator	Reactive pH indicator for slightly acidic pH range	5(6) - CFDA, SE	492/517	AS-89000
	Cell-permeable fluorescent pH indicator; Better conjugant than FITC, resists hydrolysis, superior stability.	5(6) - FAM	494/519	AS-81002
	pH dependent fluorescence; maximum intensity in basic pH.	Fluorescein *Fluorescence Reference Standard*	490/514	AS-80001
Ca <sup>2+</sup> indicators	Visible light excitable Ca <sup>2+</sup> indicators	Calcein blue, AM (Cell permeant viability indicator)	322/437	AS-89205
		Calcein, AM	494/517	AS-89201
		Calcein, AM *UltraPure Grade*	494/517	AS-89202
		Calcein, AM *UltraPure Grade*, 5 mM solution in anhydrous DMSO	494/517	AS-89203
		Calcein; AM *UltraPure Grade* *Small Package*	494/517	AS-89204
		Rhod - 2, AM *UltraPure Grade*	549/575	AS-84035
	UV-Excitable	Fura - 2, AM	363/512	AS-84015
		Fura - 2; AM *UltraPure Grade* *Small Package*	363/512	AS-84017
		Indo - 1, AM	346/475	AS-84006
	Non-luminescent	EGTA, AM	n.d.	AS-84100
		EGTA, tetrasodium salt, 10 mM aqueous solution *UltraPure Grade*	n.d.	AS-84097
		Pluronic <sup>®</sup> F - 127 *Cell Culture Tested *	n.d.	AS-84040
	Solubilising agent for AM esters of ion indicators	Pluronic <sup>®</sup> F - 127, 10% solution in water	n.d.	AS-84042
		Pluronic <sup>®</sup> F - 127, 20% solution in DMSO	n.d.	AS-84041
Cl <sup>-</sup> indicators	Greater sensitivity to chloride ion detection with higher fluorescence quantum yield	MQAE	350/460	AS-84925
Membrane Potential Detectors [Fast Response]	Highly water soluble microinjectible	Di - 2 - ANEPEQ (JPW 1114)	517/721	AS-84713
	Displays optical response good for transient potential changes in excitable cells.	Di - 4 - ANEPPS	496/705	AS-84723
	Applicable in neuronal imaging	RH414	532/716	AS-84728
Membrane Potential Detectors [Slow Response]	Temperature sensitive 488 nm-excitable membrane potential probe.	DiBAC4(3)	493/516	AS-84700
	Lipophilic membrane dye	Dil	549/565	AS-84711
	Less temperature-sensitive than DiBAC4(3)	DiSBAC2(3)	535/560	AS-84702
	Cationic lipid bilayer translocating dye	DiSC3(5)	651/675	AS-84923
	Mitochondrial marker dye	JC - 1	514/529	AS-88060
	Environment sensitive dye for studying membrane and protein structures.	Laurdan	364/497	AS-88201
	Membrane polarization dependent	Oxonol VI	599/634	AS-84704
	Lipophilic membrane dye	Prodan	363/497	AS-88212
	Mitochondrial membrane potential sensors effective than Rhodamine.	TMRE	549/574	AS-88061
	TMRM	549/573	AS-88065	

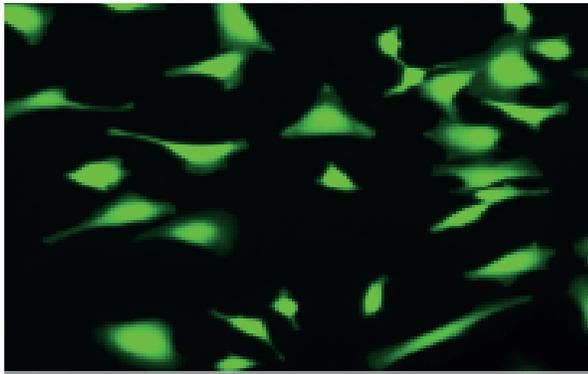


Fig.6\_HeLA cells stained with AnaSpec's Calcein AM dye.

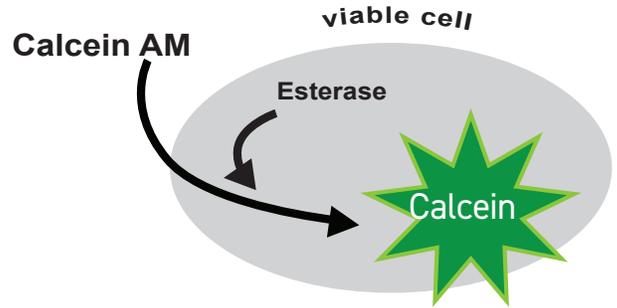


Fig.7\_ Calcein AM (non-fluorescent) upon entry into cell is acted upon by Esterases to be converted into fluorescent Calcein.

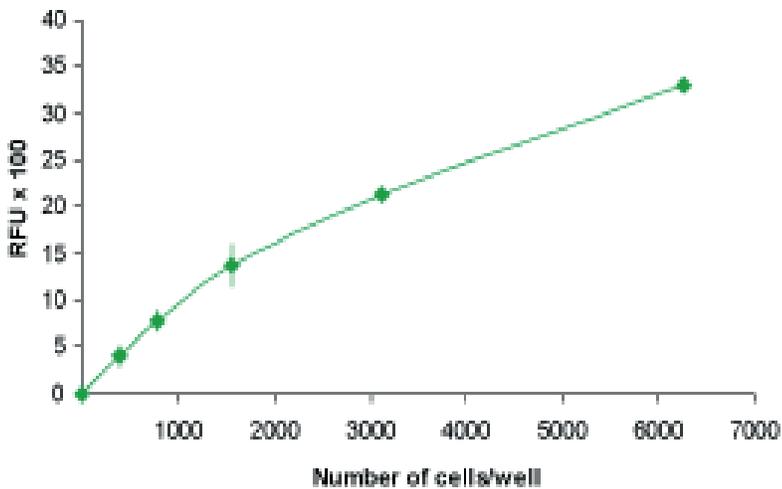


Fig.8\_ 3T3 cells exposed to AnaSpec's Calcein AM dye and resulting fluorescence readings.

## Neurological indicators

### APPLICATIONS

Neurological indicators	Binds to a wide range of amyloid inclusions <i>in situ</i>
	For early diagnosis and classification of amyloid deposition and differentiation from other glomerular fibrillar deposits
	Functional imaging of neurons: used for monitoring membrane potential, synaptic activity and ion channel activity of neurons
	Amyloid stain which binds rapidly and specifically to amyloid sheet fibrils but not to monomer or oligomeric intermediates



### ORDERING INFORMATION

PRODUCT	Abs/Em (nm)	CAT #
BSB	340/520	AS-88300
Congo Red *UltraPure Grade*	497/NA	AS-83016
RH414	532/716	AS-84728
Thioflavin T *UltraPure Grade*	412/482	AS-88306

## ⇒ DNA BINDING DYES

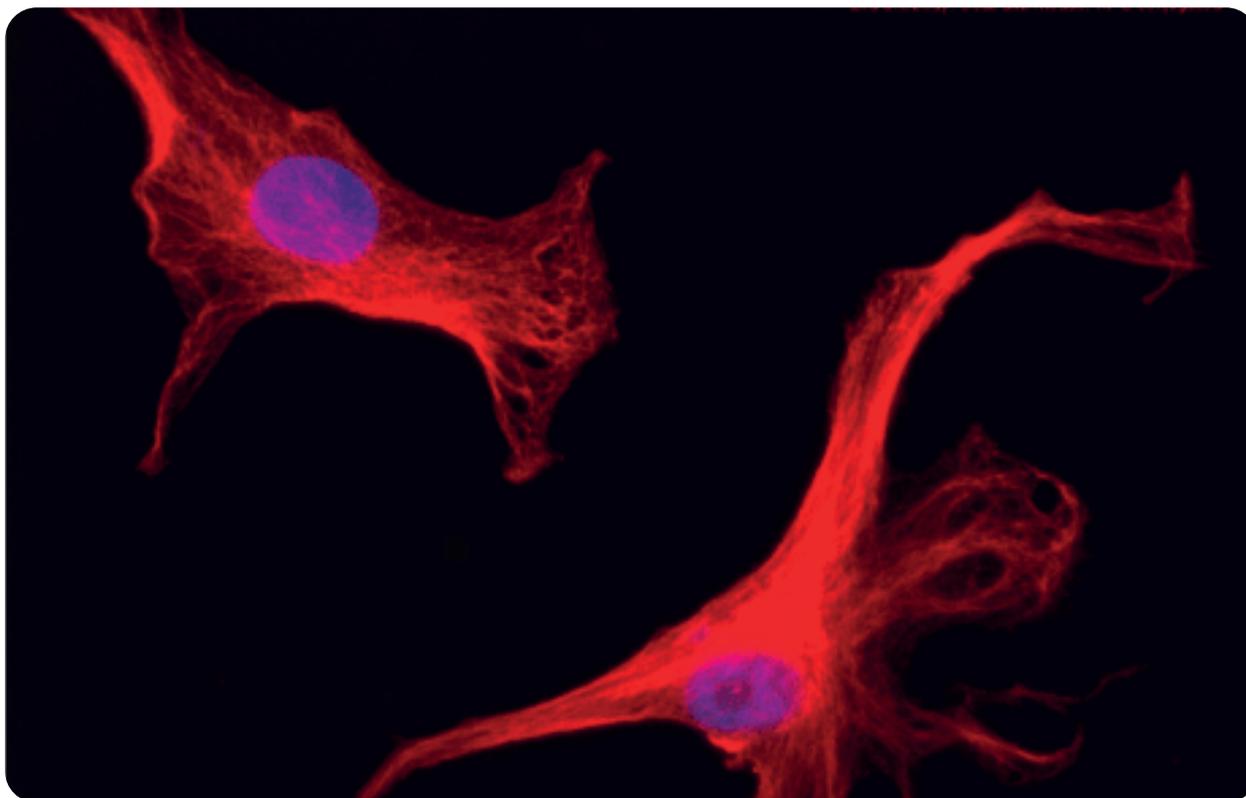
DNA/RNA concentration is often measured by UV absorbance at 260 nm. This method, however, is not as accurate and sensitive as DNA quantitation by using fluorescent dyes. We offer a variety of nucleic acid stains for detecting nucleic

acids. These stains can be used for DNA quantitation in solutions or in cells. We also offer reagents for labeling nucleotides and nucleic acids. ■

## Fluorescent Nucleic Acid Dyes

### APPLICATIONS

		 <b>ORDERING INFORMATION</b>		
		PRODUCT	Abs/Em	CAT. #
Cell Impermeant Nucleic Acid Stains	GC region specific; Applicable for multi-color fluorescence microscopy, confocal laser-scanning microscopy and flow cytometry.	7 - AAD	546/647	AS-83201
	A fluorescent photoaffinity label that couples covalently to nucleic acids upon irradiation.	Ethidium monoazide bromide	462/625	AS-83214
	Nucelor or chromosomal counterstain.	Propidium iodide	535/617	AS-83212
	Propidium iodide, 1.0 mg/mL solution in water	AS-83215		
Cell Permeant Nucleic Acid Stains	Binds to DNA/RNA (red fluorescence) upon oxidation	Dihydroethidium 5 mM solution in DMSO	518/605	AS-85704 AS-85718
	Biomarker for cell cycle and proliferation.	BrdU	n.d.	AS-83224
	AT-selective minor groove binder exhibiting enhanced fluorescence in the presence of DNA	DAPI	358/461	AS-83210 AS-83211
	DNA minor groove binding dye	Hoechst 33258, 20 mM solution in water	350/461	AS-83219
	Hoechst 33342, 20 mM solution in water	AS-83218		
Others	Biotinylating agent; reacts with exposed aldehyde groups in damaged DNA	ARP	n.d.	AS-60645
	Building blocks to prepare amino-containing nucleotides	Aminoallyl dUTP, 4 mM in TE buffer *UltraPure Grade*	n.d.	AS-83203



**Fig.9** Alpha-tubulin in bovine pulmonary artery endothelial cells were detected with mouse anti alpha-tubulin primary antibody, visualized with Allophycocyanin (APC)-conjugated goat anti mouse IgG. Nuclei were stained with DAPI (Cat# AS-83210).

# iD SensoLyte<sup>®</sup> assay kits

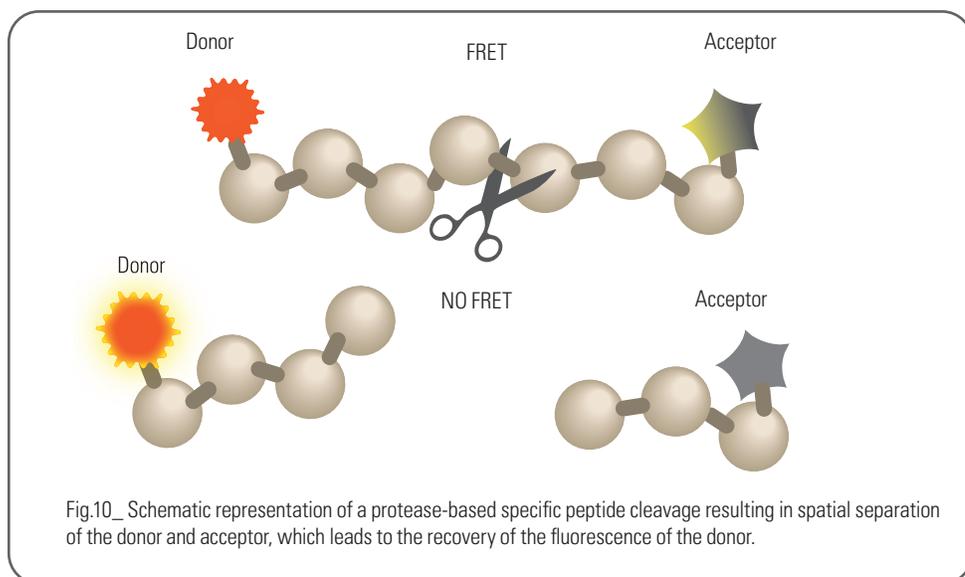
## Custom Fluorescent Assays

### DESIGN AND DEVELOPMENT

By leveraging our expertise in protein labeling, FRET & Fluorogenic peptide substrate synthesis, and assay development, we can minimize your development time, while delivering the highest quality assay(s), or labeled substrate(s).



**WE KNOW THAT CONFIDENTIALITY IS IMPORTANT TO YOU, AND WILL TREAT YOUR PROJECT AND DATA WITH THE UTMOST CARE AND RESPECT.**



### GOOD TO KNOW

FRET or Fluorescence or Förster resonance energy transfer is a distance-dependent transfer of excited state energy from an initially excited donor to an acceptor, with the donor molecule typically emitting at shorter wavelengths that overlap with the absorption of an acceptor. FRET occurs when a donor (fluorophore) and an acceptor (another fluorophore or quencher) are within a specified distance, usually within 10-100 Å. Within this distance, when a donor transfers its resonance energy to a quencher, a decrease in the donor fluorescence is seen.

In TR-FRET (Time-Resolved Fluorescence Resonance Energy Transfer) the donor molecule is a Lanthanide metal, such as Europium (Eu), with a long-lived fluorescence. The long-lived fluorescence is characterized by a large Stoke's shift providing a high signal-to-noise ratio due to minimal crosstalk between excitation and emission wavelengths.

Fluorogenic Assays make use of substrates that are labeled with a fluorophore but no quencher. The C-terminal end-specific dyes that are used in this type of assay are quenched by the peptide itself. Upon peptide cleavage by a specific protease, the fluorescence increases.

### APPLICATIONS

- HTS detection of protease activity, protease activators and inhibitors
- Protease based drug target screening and discovery
- Protein-peptide interaction

### BENEFITS

- Homogeneous assay format ideal for HTS
- Full spectrum of dyes and quenchers covering all detection channels

### SERVICE

- Design and preparation of FRET, TR-FRET and fluorogenic substrates & assays
- Preparation of labeled quenched peptide or protein substrates
- Validation of assay with inhibitor(s) or biologicals
- Detailed step by step assay protocol.

### ALSO AVAILABLE

- Protein Labeling with Fluorescent dyes, and quenchers
- Protein-peptide conjugation (KLH, BSA, OVA)

# Catalog Assays

Our portfolio of iD Sensolyte® Assay kits contains many sensitive FRET based assays designed for activity detection of specific proteases and other enzymes. ELISAs are also available to detect specific biological targets.

## BENEFITS

- Optimized for highly sensitive detection of enzyme activities
- Compatible with high throughput screening (HTS) for use in drug discovery
- One-step homogeneous assays
- Convenient mix-and-read formats (for select proteases)
- iD Sensolyte® specialised services available



### iD OPTIMIZATION

We can customize and scale up any iD Sensolyte® assay kit to suit your specific application. Bulk FRET or Fluorogenic Substrate amounts are conveniently offered separately from our assay kits, if you prefer to develop your own HTS assays.

### SCREENING SERVICES

Have you found an iD Sensolyte® assay kit that works great, but have no time for testing? We can save you time and money by screening your small molecules or biologicals for you.

## iD SENSOLYTE® ASSAY KITS BY RESEARCH TOPIC



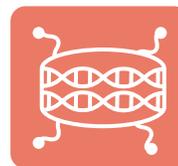
Alzheimer's



Cell adhesion



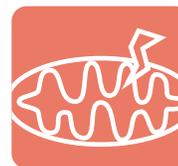
Multiple Sclerosis



Epigenetics



Parkinson



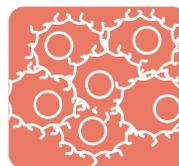
Oxidative stress



Bone



Cardiovascular



Cancer & Apoptosis



Viral & Bacterial



## Alzheimer's Disease

The important roles of  $\beta$ -Amyloid, Tau and related enzyme activities such as secretases, cathepsins and Neprilysin, in Alzheimer's disease (AD) continue to be of targeted interest among AD researchers worldwide. Our highly sensitive fluorimetric assay kits including industry's first- Green Pin1 assay kit and related kits (secretase etc.) add to our vast and unique collection of Amyloid peptides to advance AD research. ■



## Multiple Sclerosis

AnaSpec supports MS/EAE research. In addition to its suite of peptides, the company provides assay kits and antibodies that facilitate the advancement of this research. Proteolipid protein (PLP) and Myelin Oligodendrocyte Glycoprotein (MOG) are suspected antigens in the pathogenesis of MS. Our ELISA assays for quantifying autoimmune IgG's directed to MOG or PLP are the first in the industry. As are antibodies against MOG, PLP and MBP. ■



### OUR PRODUCT SELECTION\*

ASSAY KITS		Abs/Em	LOWEST DETECTION LIMIT	CAT #
Acetylcholinesterase	SensoLyte <sup>®</sup> 520 Acetylcholinesterase Activity Assay Kit Fluorimetric	490/520nm	8 pg/ml	AS-72242
Secretases & Aggreganase	SensoLyte <sup>®</sup> 520 $\alpha$ -secretase Assay kit *Fluorimetric*	490/520 nm	0.31 ng/well	AS-72085
	SensoLyte <sup>®</sup> $\beta$ -secretase 2 Activity Assay *Fluorimetric*	490/520 nm	10ng/well	AS-72225
	SensoLyte <sup>®</sup> 520 $\beta$ - Secretase 1 Assay Kit *Fluorimetric*	490/520 nm	0.03mU/ml	AS-71144
ADAM 10	SensoLyte <sup>®</sup> 520 ADAM10 Activity Assay Kit *Fluorimetric*	490/520nm	0.25ng/ml	AS-72226
$\beta$ -Amyloid	SensoLyte <sup>®</sup> Anti-Human $\beta$ -Amyloid (1-40) Quantitative ELISA	Abs = 450 nm	2 pg/ml	AS-55551
	SensoLyte <sup>®</sup> Anti-Human $\beta$ -Amyloid (1-42) Quantitative ELISA	Abs = 450 nm	2 pg/ml	AS-55552
	SensoLyte <sup>®</sup> Thioflavin T $\beta$ - Amyloid (1-42) Aggregation Kit	440/484nm	n.d.	AS-72214
	SensoLyte <sup>®</sup> Thioflavin T $\beta$ - Amyloid (1-40) Aggregation Kit	440/484nm	n.d.	AS-72213
Meprin	SensoLyte <sup>®</sup> 520 Meprin $\beta$ Activity Assay Kit *Fluorimetric*	490/520 nm	0.048 ng/mL	AS-72254
Neprilysin	SensoLyte <sup>®</sup> 520 Neprilysin Activity Assay Kit *Fluorimetric*	490/520	0.78 mg/mL	AS-72223
Pin 1	SensoLyte <sup>®</sup> Green PIN1 Activity Assay Kit *Fluorimetric*	490/520	n.d.	AS-72240

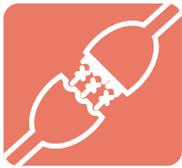
\*For a full list of products and product citations, please refer to the product pages online.  
For related recombinant Tau proteins, refer to page 6.



### OUR PRODUCT SELECTION\*

ASSAY KITS		Abs/Em	DYNAMIC RANGE	LOWEST DETECTION LIMIT	CAT #
Anti-PLP (Proteolipid protein) IgG	SensoLyte <sup>®</sup> Anti-PLP (139-151) IgG Quantitative ELISA Kit (mouse) *Colorimetric*	450 nm	8-500 ng/ ml	100 pg	AS-55524
	SensoLyte <sup>®</sup> Anti-PLP (178 - 191) IgG Quantitative ELISA Kit (Mouse) *Colorimetric*	450 nm	8-500 ng/ ml	100 pg	AS-55523
Anti-MOG (Myelin Oligodendrocyte Glycoprotein) IgG	SensoLyte <sup>®</sup> Anti-Rat MOG (1-125) Assay *Colorimetric*	450 nm	8-500 ng/ ml	1 ng/ml	AS-55157
	SensoLyte <sup>®</sup> Anti-Human MOG (1-125) Assay *Colorimetric*	450 nm	8-500 ng/ ml	1 ng/ml	AS-55153-H
	SensoLyte <sup>®</sup> Anti - MOG (35 - 55) IgG Quantitative ELISA Kit (mouse/rat) *Colorimetric*	450 nm	8-500 ng/ ml	100 pg	AS-54465

\*For a full list of products and product citations, please refer to the product pages online.  
For related recombinant MOG proteins, refer to page 6.



## Parkinson's Disease

Parkinson's disease (PD) is a progressive disorder affecting movements characterized by the involvement of certain enzyme activities and peptides/proteins. Parkinson's disease related molecules are attractive targets for new therapeutic development. ■



### OUR PRODUCT SELECTION\*

	ASSAY KITS	Abs/Em	LOWEST DETECTION LIMIT	CAT #
Synuclein	SensoLyte® Anti - $\alpha$ - Synuclein (Human) ELISA Kit *Colorimetric*	n.d.	5 pg/ml	AS-55550-H
	SensoLyte® Anti - $\alpha$ - Synuclein (Rat) ELISA Kit *Colorimetric*	n.d.	5 pg/mL	AS-55550-R
Transglutaminase	SensoLyte® Transglutaminase Activity Assay Kit, *Colorimetric*	n.d.	n.d.	AS-72244
	SensoLyte® Transglutaminase Activity Assay Kit, *Fluorimetric*	545/590nm	120ng/ml	AS-72245

\*For a full list of products and product citations, please refer to the product pages online.  
For related recombinant synuclein & DJ-1 proteins, refer to page 6.



## Bone-related Disease / Pathways

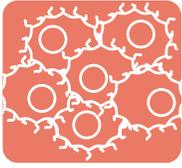
The relevance of alkaline phosphatases in relation to bone diseases such as Paget's disease continues to attract impactful research in the field. AnaSpec offers a variety of assay kits including highly purified chromogenic and fluorogenic substrates for the detection of alkaline phosphatase activities in solutions, in cell extracts, and in live cells; as well as in multiple formats... ■



### OUR PRODUCT SELECTION\*

	ASSAY KITS	Abs/Em	LOWEST DETECTION LIMIT	CAT #
Cathepsin K	SensoLyte® Rh110 Cathepsin K Assay Kit *Fluorimetric*	490/520 nm	0.1 ng/well	AS-72152
	SensoLyte® 520 Cathepsin K Assay Kit *Fluorimetric*	490/520 nm	1 ng/well	AS-72171
Aggrecanase 1	SensoLyte® 520 Aggrecanase-1 Assay Kit *Fluorimetric*	490/520 nm	0.1 ng	AS-72114
Phosphatases	SensoLyte® pNPP Alkaline Phosphatase Assay Kit *Colorimetric*	Abs = 405 nm	0.02 ng/well	AS-72146
	SensoLyte® pNPP Protein Phosphatase Assay Kit *Colorimetric*	Abs = 405 nm	10 ng of PTP 1B	AS-71105

\*For a full list of products and product citations, please refer to the product pages online.



## Cancer and Apoptosis

Detecting cell proliferation/viability and programmed cell death constitutes critical aspects of cancer and apoptosis research. Caspases involved in apoptosis act by executing cellular disassembly via proteolytic cleavage of substrates.

We are proud to offer convenient assay kits not only for detecting cell viability and proliferation but also a series of one-step homogeneous caspase assay kits and substrates ideal for HTS. ■



## Cell Adhesion and ECM

Enzymes responsible for the breakdown of connective tissue are important in bone remodelling, tissue repair, cell signaling including migration (adhesion/ dispersion), differentiation, angiogenesis, apoptosis etc. Our vast array of MMP assay kits are designed to detect generic and specific MMP's activity including pro and active forms for your research needs. ■



### OUR PRODUCT SELECTION\*

	ASSAY KITS	Abs/Em	LOWEST DETECTION LIMIT	CAT #
Calpain	SensoLyte <sup>®</sup> 520 Calpain Activity Assay Kit *Fluorimetric*	490/520nm	n.d.	AS-72149
Matriptase	SensoLyte <sup>®</sup> Rh110 Matriptase Activity Assay Kit *Fluorimetric*	496/520nm	0.15ng/ml	AS-72241
Caspases	SensoLyte <sup>®</sup> Caspase AFC Profiling Kit *Fluorimetric*	380/500nm	n.a.	AS-71120
	SensoLyte <sup>®</sup> Homogeneous AMC Caspase-3/7 Assay Kit *Fluorimetric*	354/442	n.d.	AS-71118
Cathepsins	SensoLyte <sup>®</sup> 520 Cathepsin D Assay Kit *Fluorimetric*	490/520	n.d.	AS-72170
	SensoLyte <sup>®</sup> 520 Cathepsin E Assay Kit *Fluorimetric*	490/520	2 ng/mL	AS-72222
Cell Viability and Proliferation	DHL <sup>™</sup> Cell Viability and Proliferation Assay Kit *Fluorimetric*	560/590	48 cells	AS-71300
Meprin	SensoLyte <sup>®</sup> 520 Meprin $\alpha$ activity Assay Kit *Fluorimetric*	490/520 nm	0,1 ng/mL	AS-72253

\*For a full list of products and product citations, please refer to the product pages online.

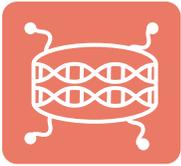


### OUR PRODUCT SELECTION\*

	ASSAY KITS	Abs/Em	LOWEST DETECTION LIMIT	CAT #
MMPs	SensoLyte <sup>®</sup> 520 Generic MMP *Fluorimetric*	490/520 nm	1 ng	AS-71158
	SensoLyte <sup>®</sup> Generic MMP *Colorimetric*	Abs = 412 nm (with thiol reactive Ellmon's reagent)	n.d.	AS-72095
	SensoLyte <sup>®</sup> 520 MMP Profiling Kit *Fluorimetric*	490/520 nm	n.a.	AS-71136
	SensoLyte <sup>®</sup> PLUS 520 MMP-1 *Fluorimetric*	490/520 nm	30 pg	AS-72012
	SensoLyte <sup>®</sup> 520 MMP-8 Assay Kit *Fluorimetric*	490/520 nm	n.d.	AS-71154

\*For a full list of products and product citations, please refer to the product pages online.

For related recombinant proteins and proenzyme MMPs, refer to page 6.



## Epigenetics

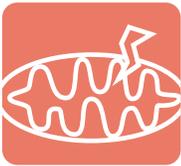
To study gene expression modulation for example, the deacetylation of lysine residues on histone proteins, in relevance to transcriptional regulation in various models of cell cycling, apoptosis and differentiation, we offer a series of epigenetics enzymes assay kits, also in HTS formats. ■



### OUR PRODUCT SELECTION\*

	ASSAY KITS	Abs/Em	LOWEST DETECTION LIMIT	CAT #
Sirtuins	SensoLyte® 520 FRET SIRT1 Assay Kit *Fluorimetric*	490/520	n.d.	AS-72155
	SensoLyte® Green SIRT2 Assay Kit *Fluorimetric*	490/520	n.d.	AS-72188
HDAC	SensoLyte® 520 HDAC Activity Assay Kit *Fluorimetric*	490/520	0.78 µg/mL	AS-72084
HAT (p300)	SensoLyte® HAT (p300) Assay Kit *Fluorimetric*	289/513	n.d.	AS-72172

\*For a full list of products and product citations, please refer to the product pages online.  
For related recombinant Sirtuin proteins, refer to page 6.



## Oxidative Stress

Reactive Oxygen Species (ROS) have an important role in several biological events and are studied extensively via oxidative stress-related pathways and molecules.

In this context, we have developed highly sensitive assays for optimized detection of molecules such as hydrogen peroxide and glutathione, which have roles in ROS production/modulation. ■



### OUR PRODUCT SELECTION\*

	ASSAY KITS	Abs/Em	LOWEST DETECTION LIMIT	CAT #
Thiol compounds	SensoLyte® 520 Thiol Quantitation Assay *Fluorimetric*	490/520 nm	0.04 µM with a linear range up to 160 µM	AS-72138
	SensoLyte® ABD-F Thiol Quantitation Assay *Fluorimetric*	389/513 nm	0.25 µM	AS-72137
Reduced Glutathione (GSH)	SensoLyte® 520 Total GSH Assay *Fluorimetric*	490/520 nm	0.2 µM with a linear range up to 100 µM	AS-72154
	SensoLyte® Total GSH Assay *Colorimetric*	Abs = 415 nm	1.5 µM with a linear range up to 100 µM	AS-72153
Hydrogen Peroxide	SensoLyte® ADHP Hydrogen Peroxide Assay Kit *Fluorimetric*	530-560/590 nm	1 µM (0.1 nmol) with a linear range up to 20 µM (2 nmol)	AS-71112
	SensoLyte® ADHP Peroxidase Assay Kit *Fluorimetric*	530-560/590 nm	n.d.	AS-71111

\*For a full list of products and product citations, please refer to the product pages online.



## Cardiovascular

Vascular diseases comprise disorders of the heart and blood vessels including hypertension and atherosclerosis. Detecting activities of Renin, Thrombin, Plasmin etc., are vital to understand their roles in vascular disease states. Our optimized/novel assay kits designed to detect enzyme activities can serve to advance your vascular disease research in convenient formats. ■



### OUR PRODUCT SELECTION\*

	ASSAY KITS	Abs/Em	LOWEST DETECTION LIMIT	CAT #
Thrombin	SensoLyte <sup>®</sup> 520 Thrombin Assay Kit *Fluorimetric*	490/520 nm	0.6 ng/well	AS-72129
Plasmin	SensoLyte <sup>®</sup> Rh110 Plasmin Assay Kit *Fluorimetric*	496/520 nm	0.02 ng/well	AS-72125
Cathepsins	SensoLyte <sup>®</sup> 520 Cathepsin S *Fluorimetric*	490/520 nm	0.1 ng/well	AS-72099
Renin	SensoLyte <sup>®</sup> 520 Rat Renin *Fluorimetric*	490/520 nm	0.09 ng/well	AS-72140
	SensoLyte <sup>®</sup> 520 Renin *Fluorimetric*	490/520 nm	0.12 ng/well	AS-72040
Factor Xa	SensoLyte <sup>®</sup> 520 Factor Xa *Fluorimetric*	490/520 nm	~8 ng/well	AS-72208
ADAMTS-13	SensoLyte <sup>®</sup> 520 ADAMTS-13 Activity Assay Kit *Fluorimetric*	490/520	n.d.	AS-72232
Angiotensin-converting enzyme 2	SensoLyte <sup>®</sup> 390 ACE2 Activity Assay Kit *Fluorimetric*	330/390	n.d.	AS-72086
Urokinase (uPA)	SensoLyte <sup>®</sup> AFC Urokinase (uPA) Activity Assay Kit *Fluorimetric*	380/500	n.d.	AS-72159
Tissue-type plasminogen activator (tPA)	SensoLyte <sup>®</sup> AMC tPA Activity Assay Kit *Fluorimetric*	354/442	n.d.	AS-72160

\*For a full list of products and product citations, please refer to the product pages online.

For related recombinant Renin proteins, refer to page 6.



## Viral and Bacterial Proteases

To cater to microbial disease research keeping in mind the growing importance of High-Throughput Screening (HTS) for drug discovery, we proudly offer a series of fluorimetric Viral/Bacterial protease activity assay kits, which are optimized for HTS; as well as for regular non-HTS uses. ■



### OUR PRODUCT SELECTION\*

	ASSAY KITS	Abs/Em	LOWEST DETECTION LIMIT	CAT #
HIV	SensoLyte <sup>®</sup> 520 HIV Assay Kit *Fluorimetric*	490 /520 nm	n.d.	AS-71147
HCV	SensoLyte <sup>®</sup> 520 HCV Assay Kit *Fluorimetric*	490 /520 nm	0.1 pmole	AS-71145
HIV/HBV	SensoLyte <sup>®</sup> Rh110 Furin Activity Assay Kit *Fluorimetric*	490 /520 nm	0.02 pg/μL	AS-72256
WNV	SensoLyte <sup>®</sup> 570 WNV Assay Kit *Fluorimetric*	540 / 575 nm	n.d.	AS-72080
Sortase	SensoLyte <sup>®</sup> 520 Sortase A Activity Assay Kit *Fluorimetric*	490/520nm	20 ng/ml	AS-72228
TEV	SensoLyte <sup>®</sup> 520 TEV Protease Assay Kit *Fluorimetric*	490/520	n.d.	AS-72227

\*For a full list of products and product citations, please refer to the product pages online.

For related recombinant HCV, HIV, West Nile Viral & Bacterial Sortase proteases, refer to page 6.

# ANNEXES

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# Proteins

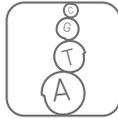
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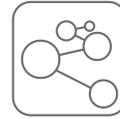
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