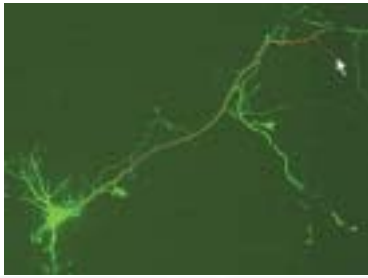
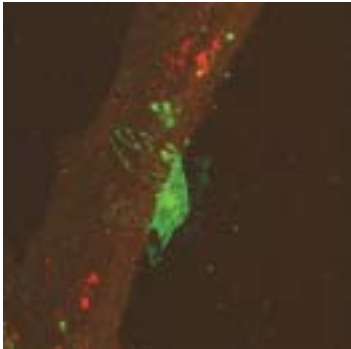


Neural Cell Study



Neuron tracing showing cell body and its axonal and dendritic outgrowths as calculated by an automated delineation technique.
See also Calcium indicators.



3D projection from z-stack of mouse muscle bag fiber red) inside capsule (blue-Hoechst) with two motor nerves (green).

Neurons found in brain and other neural centers, as well as in nerves, and muscular cells are excitable cells that exchange potential depolarization through so-called synaptic junctions. Fluorescent probes are effective indicators through 2 main pathways :

- ◆ Binding to specific receptors from cell membranes (commanding ionic channels or cell signaling). Amongst many toxins that act on neurotransmitter receptors, **Bungarotoxins** and **Tetrodotoxins** are the most popular used.
- ◆ Binding to membranes of exocytosis vesicles that release, and endocytosis vesicles that uptake biomolecules in/from the synaptic space. **Styryl based dyes** are the mostly used.

α-Bungarotoxin / AChE receptor detection

α-Bungarotoxin, a 74–amino acid peptide extracted from *Bungarus multicinctus* venom, binds with high affinity to the α-subunit of the nicotinic AChR (Nicotinic acetylcholine receptors) of neuromuscular junctions. Biotin, FITC, and Tetramethylrhodamine (more popular) labeled α-Bungarotoxins are available for fluorescent detection in microscopy as well as cell assays. Informative data can be obtained related to AChR quantitation and distribution for many applications in neurology. Furthermore, Biotin α-Bungarotoxin can be used for detection with enzyme labels (see (neutralized)avidin-HRP, and avidin-AP), and even for receptors isolation with immobilized avidins.

α-Bungarotoxin

$C_{338}H_{529}N_{97}O_{105}S_{11}$ MW : 7984
Soluble in water

Store at -20°C and protect from light

Useful as a control, as well as for labeling, radioiodination, preparation of new conjugates, and for competitive studies.

Description	Cat.#	Qty
α-Bungarotoxin	FP-38034A	5 mg

abs em. α-Bungarotoxin-FITC

MW : ~ 8400

Soluble in water

Store at -20°C and protect from light

$\lambda_{exc.}/\lambda_{em.}$: 494 nm/518 nm

Original green-fluorescent conjugate.

Description	Cat.#	Qty
α-Bungarotoxin-FITC	FP-52482A	500 µg
	FP-52482B	10 x 50 µg

abs em. α-Bungarotoxin-tetramethylrhodamine

MW : ~ 8 600

Soluble in water

Store at -20°C and protect from light

$\lambda_{exc.}/\lambda_{em.}$: 552 nm/579 nm

Currently the most extensively used conjugate (more photostable).

Description	Cat.#	Qty
α-Bungarotoxin-tetramethylrhodamine	FP-52509A	500 µg
	FP-52509B	10 x 50 µg

abs em. α-Bungarotoxin-SR101

MW : ~ 8 400

Soluble in water

Store at -20°C and protect from light

$\lambda_{exc.}/\lambda_{em.}$: 593 nm/613 nm

Excellent dye to combine with green-fluorescent probes SynapTracer™1-4

Description	Cat.#	Qty
α-Bungarotoxin-SR101	FP-22597A	500 µg
	FP-22597B	10 x 50 µg

Technical tip

Phagocytosis, endocytosis and pinocytosis are plasmatic membrane vesicles that cage out-sided particules (neurotransmitters in the case of neurona cells), receptor-bound ligands or substances, and lead them inside. The process involves signal of transduction and oxidation in vesicles with production of oxygen reactive species. Following probes are useful to study these processes :

- ◆ H₂DCFDA (FP-46731) is used to detect ROS released by phagosomes into cytosol.
- ◆ Synaptracer dyes are used to detect endocytosis intense activity in firing terminal nerves.
- ◆ Fluorescein-protein conjugates, are captured in vesicles, are used to track endosomes acidification.
- ◆ Amine reactive fluoresceins to prepare your own fluorescent conjugates.
- ◆ Hydrophilic fluorescent dyes as sulforhodamine 101, lucifer yellow CH and calcein have also be useful for some endocytosis applications.
- ◆ Fluorescent dextrans are used for phagocytosis and pinocytosis studies.
- ◆ Fluorescent labeled LDL complexes (including acetylated LDL that do not bind to LDL receptors, but are taken up by macrophage and endothelial cells).
- ◆ Fluorescent labeled receptor ligands (transferrin, lactoferrin, EGF, MPS, Fibrinogen, Endostatin, Gelatin, type IV Collagen) that enter into cells through receptor-mediated endocytosis.

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interchim

α -Bungarotoxin-Biotin

MW : ~ 8400

Soluble in water

Store at -20°C and protect from light

Can be localized using enzyme or fluorophore-labeled conjugates of avidin or streptavidin, or even for isolation of receptors with immobilized avidins (on request).

Description	Cat.#	Qty
α -Bungarotoxin-Biotin	FP-85895A	500 μ g

β -Bungarotoxin

MW : ~ 20 000

Soluble in water

Store at -20°C and protect from light

β -Bungarotoxin blocks neurotransmission in neuromuscular junctions. The toxin contains a smaller subunit that blocks voltage-gated K⁺ channels on the pre-synaptic membranes, and a larger subunit that has phospholipase A2 activity.

J. Biochem. 84, 1301 (1978) ; Neuroscience 40, 29 (1991)

Description	Cat.#	Qty
β -Bungarotoxin	FP-74359A	1 mg

Tetrodotoxin / Sodium channel blocker

Tetrodotoxin reversibly blocks the excitable volt-gated sodium channels. It is used widely to study excitable membranes, including nerves, skeletal cells, cardiac cells.

Literature :

Lysko, P.G. et al. Stroke 25, 2476(1994)

Hu, S.L. and Kao, C.Y. Toxicol 23, 723(1985)

Nakamura, M. and Yasumoto, T. Toxicol 23, 271(1985)

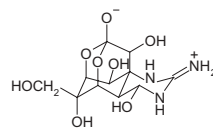
Tetrodotoxin (TTX) Citrate free

C₁₁H₁₇N₃O₈ MW : 319.27

Soluble in water

Store at -20°C and protect from light

Citrate buffer pH 4.8 facilitates its dissolution in water.



Description	Cat.#	Qty
Tetrodotoxin (TTX) Citrate free	FP-31496A	1 mg

Tetrodotoxin with Citrate

Description	Cat.#	Qty
Tetrodotoxin with Citrate (includes 5 mg pH 4,8 citrate buffer)	FP-AM332A	1 mg

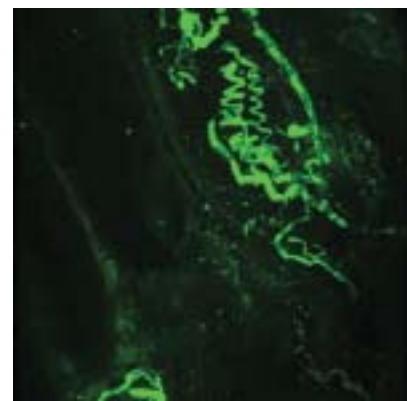
Cholera Toxin/retrograde labeling

Cholera toxin subunit B (choleraenoid), the nontoxic component of cholera toxin, binds to cell surfaces via the pentasaccharide chain of ganglioside GM1. It was widely used for the retrograde labeling of neurons, and also as a marker of lipid rafts (membrane region rich in gangliosides). It is isolated from *Vibrio cholerae*.

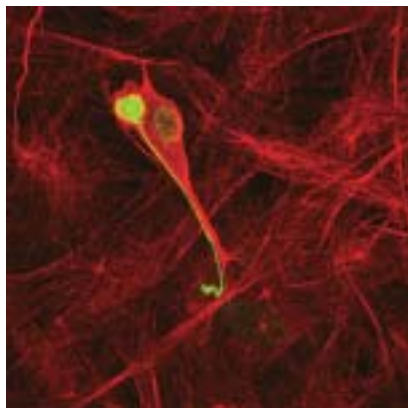
HRP labeled (FP-U9075A) has been popularized, being up to 50 times more sensitive than previously used method. As this tracer has become an important reagent for use in connectivity studies in peripheral and central nervous systems, we provide other labeled conjugates, including Fluorescein, and TRITC, and a specific antibody.

	Cat.#	
CholeraToxin B – HRP	741380	0.1mg when reconstituted Mesulam, et al. (1980) J. Histochem. Cytochem. 28, 1255-1259.
CholeraToxin B – FITC	741390	2 mg protein ; 0.2mg protein
CholeraToxin B – TRITC	741400	0.5mg protein
CholeraToxin B – Phycocerythrin	BM3690	16 μ g protein
CholeraToxin B – Colloidal Gold 7nm	348070	50 μ g protein
Cholera Toxin B Subunit (Low Salt)	530520	0.5mg protein

Goat anti Choleraenoid Antibody for use in either toxin neutralization or binding assays.



3D-Projection from z-stack of mouse motor nerve (green) coiling around muscle spindle (not stained).



SynapTracer™ dyes / potential indicators

SynapTracer™ dyes are a series of non toxic cationic styryl dyes, that are non-fluorescent in water but highly fluorescent upon membrane binding and internalization. The green ST™1-4 ($\lambda_{exc.}/\lambda_{em}$ 510/625 nm in membranes) and red dye ST™3-2 ($\lambda_{exc.}/\lambda_{em}$: 558/734) have become the most used, allowing dual color imaging, to follow synaptic activities at neuromuscular junctions or synapses, as well as in endocytosis vesicles and vacuoles.

Fluorescence spectra are similar for all dyes and show 30-40 nm blue shift from polar environment to membrane one.

Applications :

- ◆ Terminal nerve and neuro-muscular junction
- ◆ Activity-dependent vesicle cycling
- ◆ Identifying cell membrane boundaries
- ◆ Labeling membranes of living cells
- ◆ Morphology or dynamics of endocytosis vesicles and vacuoles

These dyes, especially with increasing tails and number of double bonds, need several washing step to remove background fluorescence, eventually with the help of clearing agents, or quenchers.

abs em. Green SynapTracer™ 1-1

$C_{24}H_{37}Br_2N_3$ MW : 527.40

Soluble in water

Store at -20°C and protect from light

$\lambda_{exc.}/\lambda_{em}$. (MetOH) : 510/625 nm*

Shorter lipophilic tail (1 carbon) and more water soluble, thus expected to show the slowest "on-rate" and fastest "off-rate".

Description	Cat.#	Qty
Green SynapTracer™ 1-1	FP-AM312A	5 mg
	FP-AM312B	5 x 1 mg

abs em. Green SynapTracer™ 1-2

$C_{26}H_{41}Br_2N_3$ MW : 555.45 [2-10]

Soluble in water

Store at -20°C and protect from light

$\lambda_{exc.}/\lambda_{em}$. (MetOH) : 505/620 nm*

More hydrophilic than SynapTracer™1-4 thus faster de-staining rate. May be preferred to SynapTracer™1-4 for quantitative measurements.

Description	Cat.#	Qty
Green SynapTracer™ 1-2	FP-77563A	5 mg
	FP-77563B	5 x 1 mg

abs em. Green SynapTracer™1-2FX

$C_{25}H_{37}Cl_3N_4$ MW : 499.58 [2-10FX]

Soluble in water

Store at -20°C and protect from light

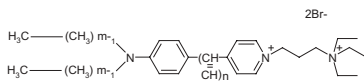
$\lambda_{exc.}/\lambda_{em}$. (MetOH) : 502/625 nm*

Analog of SynapTracer™1-2, but contains an amine group that renders it fixable with glutaraldehyde.

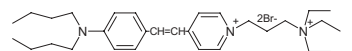
Description	Cat.#	Qty
Green SynapTracer™1-2FX	FP-AM307A	1 mg

Technical tip

SynapTracer™ dyes are typically formed by a highly hydrophilic, cationic charged, head group ; and of a lipophilic tail, separated by a linker that contains 1 double bond (giving green fluorescence), or 3 double bonds (giving red fluorescence). The dye name SynapTracer™n-m indicates the number (n) of double bond and the number (m) of carbons in the lipidic tails. Some are available derivatized with an amino group, that makes the dye fixable in situ with glutaraldehyde. Others have modified chains.



General formula



Example : Green SynapTracer™1-4 (1-43)

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*all SynapTracer™ dyes are non-fluorescent in water

abs em. Green SynapTracer™1-3

$C_{28}H_{45}Br_2N_3$ MW : 583.51

Soluble in water

Store at -20°C and protect from light

$\lambda_{exc.}/\lambda_{em.}$ (MetOH) : 510/625 nm*

Slightly more hydrophilic than SynapTracer™1-4.

Description	Cat.#	Qty
Green SynapTracer™1-3	FP-80270A	5 mg
	FP-80270B	5 x 1 mg

abs em. Green SynapTracer™1-4

$C_{30}H_{49}Br_2N_3$ MW : 611.56 [1-43]

Soluble in water

Store at -20°C and protect from light

$\lambda_{exc.}/\lambda_{em.}$ (MetOH) : 510/625 nm* ; EC : 56 000 M⁻¹ cm⁻¹

$\lambda_{exc.}/\lambda_{em.}$ (Membrane) : 479/598 nm*

The most popular green dye of SynapTracer™ series for synaptic functional studies, and vesicle follow-up. Also used to study vacuolar organelle morphology and dynamics, the endocytic pathway and vacuole fusion in yeast, endosomal marker and vital stain. Used with Fura-2 or Sulfo Rhodamine101, it has allowed to study membrane turn over and discriminate non-synaptic labeling.

Description	Cat.#	Qty
Green SynapTracer™1-4	FP-51254A	1 mg
	FP-51254B	5 x 1 mg

abs em. Green SynapTracer™1-4FX

$C_{29}H_{49}Cl_3N_4$ MW : 560.10 [1-43Fx]

Soluble in water

Store at -20°C and protect from light

$\lambda_{exc.}/\lambda_{em.}$ (MetOH) : 510/625 nm* ; EC : 50 000 M⁻¹ cm⁻¹

$\lambda_{exc.}/\lambda_{em.}$ (Membrane) : 479/598 nm*

Similar fluorescent properties to SynapTracer™1-4, but contains an amine group that renders it fixable with glutaraldehyde in situ. Ideal if subsequent immuno-chemistry is desired.

Has been used for detection of yeast vacuole membrane staining with SynapTracer™3-2 [J. Cell. Biol. 128, 779(1995)].

Description	Cat.#	Qty
Green SynapTracer™1-4FX	FP-T2982A	1 mg

abs em. Green SynapTracer™1-4BFX

Soluble in water [1-44Fx]

Improved version of SynapTracer™1-4FX with better fixability. The dye can also be used as a general probe to monitor endocytosis.

Description	Cat.#	Qty
Green SynapTracer™1-4BFX	FP-AN100A	1 mg

abs em. Green SynapTracer™1-5

$C_{32}H_{53}Br_2N_3$ MW : 639.62

Soluble in water [1-84]

Store at -20°C and protect from light

$\lambda_{exc.}/\lambda_{em.}$ (MetOH) : 510/625 nm*

Less hydrophilic than SynapTracer™1-4, thus faster staining rate but slower de-staining rate.

Description	Cat.#	Qty
Green SynapTracer™1-5	FP-AM322A	5 mg
	FP-AM322B	5 x 1 mg

* all SynapTracer™ dyes are non-fluorescent in water.

Kits including SynapTracer dyes and complementary agent are available on inquire

- ◆ Nerve Terminal Staining Kit I :
SynapTracer™1-4 (5 mg) + ADVASEP7 (250 mg)
- ◆ Nerve Terminal Staining Kit II :
SynapTracer™1-4 (5 mg) + SCAS (100 mg)
- ◆ Nerve Terminal Staining Kit III :
SynapTracer™1-4 (5 mg) + SR101 (100 mg)
- ◆ Nerve Terminal Staining Kit V :
SynapTracer™3-2 (5 mg) + ADVASEP7 (250 mg)
- ◆ Nerve Terminal Staining Kit V :
SynapTracer™3-2 (5 mg) + SR101 (100 mg)

abs em. Red SynapTracer™3-1

$C_{28}H_{41}Br_2N_3$ MW : 579.48 [4-15]

Soluble in water

Store at -20°C and protect from light

$\lambda_{exc.}/\lambda_{em.}$ (MetOH) : 543/weak

More hydrophilic than SynapTracer™1-4, thus faster destaining rate, thus a greater "off-rate".

Description	Cat.#	Qty
Red SynapTracer™3-1	FP-AM323A	5 mg
	FP-AM323B	5 x 1 mg

abs em. Red SynapTracer™3-2

$C_{30}H_{45}Br_2N_3$ MW : 607.53

Soluble in water

Store at -20°C and protect from light

$\lambda_{exc.}/\lambda_{em.}$ (CHCl3) : 558/734 ; (MetOH) : 543/weak

Excitation at 515 nm : reading at 640 nm is also suitable

The most popular red dye of SynapTracer™ series. Suits ideally to use with GFP. When used in conjunction with SynapTracer™1-4, synapses and neuromuscular junctions can be imaged in two colors.

Also used to study vacuolar organelle morphology and dynamics, the endocytic pathway and yeast endocytosis mutants (J.Cell.Biol. 121,1311(1993)).

Description	Cat.#	Qty
Red SynapTracer™3-2	FP-41109A	1 mg
	FP-41109B	5 x 1 mg

abs em. Red SynapTracer™3-2M

$C_{27}H_{39}Br_2N_3$ MW : 565.45

Soluble in water

Store at -20°C and protect from light

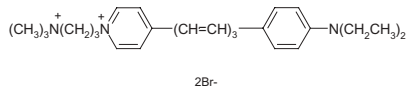
$\lambda_{exc.}/\lambda_{em.}$: 560 nm/734 nm* ; EC : 43 000 M⁻¹cm⁻¹

Excitation at 515 nm : reading at 640 nm is suitable also

Slightly less lipophilic analog of SynapTracer™3-2 with essentially identical spectroscopic properties.

Used for synapses tracing as well as some vacuoles.

Description	Cat.#	Qty
Red SynapTracer™3-2M	FP-R1422A	1 mg



SynapTracer™ dyes clearing agents, and quenchers _____

Following agents are used to reduce background due to sample-bound styryl dyes especially those containing long chain tails and multiple labeling (i.e. Green SynapTracer™1-4 FP-51254).

FluoCD™ technology

Improves solubilization of lipophilic dyes, increases fluorescence intensity and ease cell washing from membrane-bound dyes.

See page E402 .

Ask FluoProbes for innovation

ADVASEP-7

A dextrin based compound used with styryl dyes to make easier cell washing of membrane bound dye.

Description	Cat.#	Qty
ADVASEP-7	FP-AM305A	250 mg

SCAS

4-Sulfonatocalix(8)arene sodium salt

$C_{56}H_{40}Na_8O_{32}S_8$ MW : 1665.35

Store at 4°C and protect from light

Quenches membrane bound styryl dyes, avoiding repeated washes.

Description	Cat.#	Qty
SCAS	FP-AM308A	100 mg

SulfoRhodamine101

$C_{31}H_{30}N_2O_7S_2$ MW : 606.72

Store at 4°C and protect from light

Quenches membrane bound styryl dyes to reduce non synaptic fluorescence ; also used to activate by FRET SynapTracer™1-4.

Also used as a polar tracer. See also reactive SulfoRhodamine101 (FP-47006).

Description	Cat.#	Qty
SulfoRhodamine101	FP-46999A	25 mg

Sulforhodamine 101- α -Bungarotoxin

Combines SR101 quenching properties and localization in synapses through Ach. Receptor binding.

Description	Cat.#	Qty
Sulforhodamine 101- α -Bungarotoxin	FP-22597A	500 μ g
	FP-22597B	10 x 50 μ g

BSB

[(trans,trans)-1-Bromo-2,5-bis-(3-hydroxycarbonyl-4-hydroxy)styryl]benzene]

BSB, derived from the structure of Congo Red, is shown to bind to a wide range of amyloid inclusions in situ. More importantly it is also used to label brain amyloids in live animals. BSB recognizes amyloid lesions, and has distinctive properties which allow the quantitative monitoring of the formation of amyloid fibrils assembled from the Ab peptide, α -synuclein and tau. It is a cell-permeable fluorescent probe that specifically binds to and labels intracellular β -amyloid aggregates both in vitro ($K_i = 400$ nM) and in vivo. It is also used as an antemortem diagnostic tool for animal models of Alzheimer's disease.

Description	Cat.#	Qty
BSB	BS6470	5 mg

BTA-1

[2-(4''-(methylamino)phenyl)benzothiazole]

BTA-1 is an uncharged derivative of thioflavin-T that has high affinity for Ab fibrils and shows very good brain entry and clearance. The K_d of [3H]BTA-1 for binding to AD brain is very similar to the K_d for binding to synthetic Ab fibrils. BTA-1 does not appear to bind significantly to common neuroreceptors or transporter sites. BTA-1 exhibits high affinity for amyloid deposits ($K_i = 11$ nM for Ab(1-40)). It crosses the blood brain barrier and displays up to 50-fold higher affinity than ThT. It selectively stains cerebral plaques and cerebrovascular amyloid deposits in the brains of PS1/APP transgenic mice.

Description	Cat.#	Qty
BTA-1	BS6480	10 mg

BTA-2

[2-(4''-(dimethylamino)phenyl)-6-methyl-benzothiazole]

BTA-2 is an uncharged derivative of thioflavin-T that exhibits high affinity for amyloid deposits ($K_i = 143$ nM for A β (1-40)) and can cross the blood brain barrier. It displays up to 6-fold higher affinity than ThT and stains both plaques and neurofibrillary tangles in post mortem Alzheimer disease brain.

Description	Cat.#	Qty
BTA-2	BS6490	100 mg

Chrysamine G

Chrysamine G (CG) is a carboxylic acid analog of Congo red, a histologic dye which stains amyloid. CG binds to the β -amyloid protein of Alzheimer's disease (AD) in vitro and partitions into the brain of normal mice. The binding of CG is correlated with numbers of senile plaques and neurofibrillary tangles. CG displays both high ($K_d = 200$ nM; $B_{max} = 1.13$ moles per mole of Ab40) and low ($K_d = 38.77$ mM; $B_{max} = 23.10$ moles per mole of Ab40) affinity binding sites for β -amyloid (Ab) fibrils. It can cross the blood-brain barrier and serve as a useful probe for detecting senile plaques (Ab aggregate). In addition, CG can be used to stain cerebrovascular amyloid in tissue sections.

Description	Cat.#	Qty
Chrysamine G	BS6500	10 mg

Congo Red

MW : 696.67 ; 610/N/A, Soluble in water

Early diagnosis and classification of amyloid deposition and differentiation from other glomerular fibrillar deposits rely on routine Congo red (CR) histochemistry. CR binding, monitored by characteristic yellow-green birefringence under crossed polarization has been used as a diagnostic test for the presence of amyloid in tissue sections for several decades. This assay is also widely used for the characterization of in vitro amyloid fibrils. CR is sandwiched between two protein molecules causing protein oligomerization. Congo red fluorescence (CRF) is an alternative method based on examination of the CR-stained section by ultraviolet (UV) light. CRF is simple to perform and more pronounced, therefore easier to evaluate than CR in bright light. Congo red, when combined with immunohistochemistry, is still visible under UV whereas CR is masked in bright light. Although not widely used, the CRF method for detecting amyloid is simple to use with a high specificity and sensitivity, and may be applied successfully to frozen sections.

Description	Cat.#	Qty
Congo Red "UltraPure Grade"	N12511	1 g
Congo Red "Solution"	AQ3370	100 tests

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Half Chrysamine G

The neurotoxicity of Ab is widely believed to play a seminal role in neurodegeneration in Alzheimer's disease. Half chrysamine G (hCG) has a lower affinity for Ab compared with CG one. Both CG and hCG are equally efficient in reducing Ab-induced neuronal death at a 0.1-1 mM concentration, indicating that the mechanism of action for CG is not due to its chelating activity, but to its anti-oxidant activity.

Description	Cat.#	Qty
Half Chrysamine G	BS6520	10 mg

Thioflavin T "UltraPure Grade"

The benzothiazole dye thioflavin T (ThT) is a classic amyloid stain for senile plaques containing bA4 peptide in Alzheimer's disease brain. ThT also binds rapidly and specifically to the anti-parallel b-sheet fibrils formed from synthetic b-amyloid (1-40), but does not bind to monomer or oligomeric intermediates. The fibrillar b-sheet-bound dye species undergoes a characteristic 120 nm red shift of its excitation spectrum that may be selectively excited at 450 nm, resulting in a fluorescence signal at 482 nm. ThT is a useful probe for the aggregated fibrillar state of b-amyloid (1-40) fibrils as the amyloid-specific fluorescence reports only fibrillar species. The binding of ThT does not interfere with the aggregation of this peptide into amyloid fibrils. The putative conformational changes detected by the ThT fluorescence suggest that small pharmacologic ligands can perturb and possibly dissociate Ab amyloid fibrils.

Description	Cat.#	Qty
Thioflavin T "UltraPure Grade"	BS6530	1g

Other dyes and reagents related for Neurology

abs em. Luciferin Yellow CH, lithium salt

MW : 457.25

Max.solubility in water : ~8%

Store at -20°C and protect from light

$\lambda_{exc.}/\lambda_{em.}$ (H₂O) : 428/536 nm ; EC : 12 000 M⁻¹cm⁻¹

A popular polar tracer for neuronal morphology (living neurons, fixed brain slices). Cell impermeant (loading by microinjection or pinocytosis or other suitable mean). Fixable in cells through the reaction of carbonyl during aldehyde fixation. Also used for electron microscopy to photoconvert DAB in an electron-dense compound.

Note : When lithium ions interfere with cell physiology, the potassium salt is recommended.

Description	Cat.#	Qty
Luciferin Yellow CH, lithium salt	FP-15437A	35 mg

Hydroxystilbamidine methanesulfonate

C₁₈H₂₄N₄O₇S₂ MW : 472.53

Soluble in water, DMSO

Store at 4°C

$\lambda_{exc.}/\lambda_{em.}$ (membrane bound) : 350-395/530-600 nm

$\lambda_{exc.}/\lambda_{em.}$ (pH 4.5) : 323/408 nm ; EC : 33 000 M⁻¹cm⁻¹

Has been used extensively as a retrograde tracer for neurons and also a histochemical stain.

Has a wide emission bandwidth in water, with a second peak at ~600 nm. Spectra differ greatly when bound to membranes at a physiological pH of 7.4.

Has also different spectral properties when bound to DNA or RNA.

Reference :

On the use of fast blue, fluoro-gold and diamidino yellow for retrograde tracing after peripheral nerve injury : uptake, fading, dye interactions, and toxicity." Puigdemillol-Sanchez A et al. Neurosci Methods 115, 115-27 (2002) PN49301.

Description	Cat.#	Qty
Hydroxystilbamidine methanesulfonate	FP-40766A	10 mg

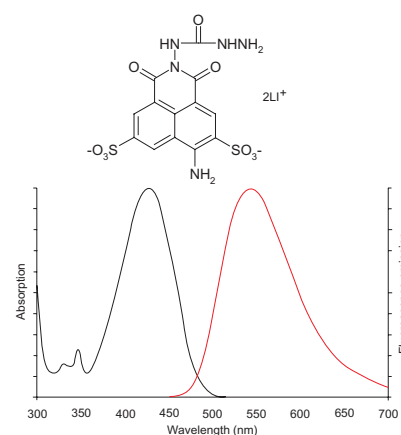
Monofluoresceinated Mannitol (MFM)

C₂₇H₂₄O₁₂ ; MW : 540.46

MFM is a new product that has shown use in labeling of the interstitial (intercellular) spaces between neurons in vitro. Since D-mannitol is preferentially excluded by neuronal cell membranes, this derivative of mannitol has been used to measure the fluid area between neurons.

Description	Cat.#	Qty
Monofluoresceinated Mannitol (MFM)	BP8921	10 mg

See also Amyloid peptides, tracers, and kits.



Absorption and emission spectra in water (FP-15437).

Related Products :

- ◆ Lipophilic tracers (DiOC, Dil, DIR..).
- ◆ Zinc indicators for neuro-toxic studies.
- ◆ Fluorescent Dextrans.
- ◆ Antibodies for neuroscience.
- ◆ Ion channel Probes and carriers (including SITS and H₂DIDS for inhibition of anion transport).
- ◆ Neurotransmitter receptors and probes.

Cell Biology - Study/Probes

Neural Cell Study

Description	Cat.#	Qty
ACPT-I	Q87650	10 mg
ACPT-II	Q87660	10 mg
Arachidonoyl 2-Fluoroethylamide	Q88150	5 mg
Arachidonoyl Dopamine	S03750	5 mg
Arachidonoyl Ethanolamide	719370	5 mg
Arachidonoyl Ethanolamide-d8	758670	100 µg
Arachidonoyl Serotonin	Q87490	5 mg
Arachidonyl Trifluoromethyl Ketone	Q86960	1 mg
1-Arachidonoyl Glycerol	G97700	1 mg
2-Arachidonoyl Glycerol	G97710	1 mg
2-Arachidonoyl Glycerol-d8	G97720	25 µg
1-Palmitoyl-2-oleoyl-3-lineoyl-rac-Glycerol	AM0790	5 mg
Arvanil	F96181	5 mg
BimatoprostTM	S00340	1 mg
BW 723C86	Q87320	5 mg
Capsaicin	GK1990	5 mg
CAY10399	S00140	1 mg
CAY10400	AG5180	100 µg
CB1 Receptor Blocking Peptide	Q88970	200 µg
CB2 Receptor Blocking Peptide	Q88980	200 µg
Dihomo- γ -Linolenoyl Ethanolamide	987610	5 mg
Docosatetraenoyl Ethanolamide	987620	5 mg
13-Docosenamide	Q88390	100 mg
Heptadecanoyl Ethanolamide	S03810	5 mg
20-HETE	Q88140	25 µg
HU-210 (DEA Schedule I Regulated Compound)	AM0940	1 mg
Hyperforin	R15481	25 µg
IMMA	732432	5 mg
Latanoprost ethyl amide	S00360	1 mg
Latanoprost Lactol	S03540	5 mg
Leukotriene B4 Ethanolamide	Q85980	25 µg
Linoleoyl Ethanolamide	Q88250	5 mg
α -Linolenoyl Ethanolamide	Q88300	5 mg
Mead Acid Ethanolamide	G97690	1 mg
R-1 Methanandamide	Q88170	5 mg
R-2 Methanandamide	Q88190	5 mg
S-1 Methanandamide	Q88180	5 mg
S-2 Methanandamide	Q88200	5 mg
(\pm)-2-Methylarachidonoyl-2'-fluoroethylamide	Q88160	5 mg
Methyl α -Linolenyl Fluorophosphonate	Q87470	1 mg
Methyl γ -Linolenyl Fluorophosphonate	Q87480	1 mg
Methyl Arachidonyl Fluorophosphonate	574731	1 mg
9-Octadecenamide	Q88380	5 mg
N-Oleoylglycine	Q88310	10 mg
Oleyl Trifluoromethyl Ketone	Q87160	1 mg
Olvanil	928880	5 mg
Oleoyl Ethanolamide	B81440	5 mg
Palmitoyl Ethanolamide	082471	5 mg
R-Palmitoyl-(1-methyl) Ethanolamide	S03820	5 mg
R-Palmitoyl-(2-methyl) Ethanolamide	Q88370	5 mg
Stearoyl Ethanolamide	G97680	5 mg
Palmityl Trifluoromethyl Ketone	Q87170	1 mg
Prostaglandin D1-d4	S00480	25 µg
Prostaglandin D2 Ethanolamide	Q84980	1 mg
Prostaglandin D2-1-glyceryl ester	GK1430	1 mg
Prostaglandin E1 Ethanolamide	Q85050	1 mg
Prostaglandin E2 Ethanolamide	Q85210	1 mg
Prostaglandin F2. α . Alcohol	Q85460	1 mg
Prostaglandin F2. α . ethanolamide-d4	S00490	25 µg
Prostaglandin F2. α . ethyl amide	S00210	1 mg
11. β -Prostaglandin F2. α . Ethanolamide	S00290	1 mg
15-deoxy- Δ .12,14-Prostaglandin J2	861300	1 mg
15-deoxy- Δ .12,14-Prostaglandin J2-d4	Q89030	25 µg
17-phenyl trinor Prostaglandin F2. α . amide	S00350	1 mg
17-phenyl trinor Prostaglandin F2. α . diethyl amide	S00370	1 mg
Tacrine (hydrochloride)	241240	500 mg