Product Information

NerveGreen™ C4 (FM1-43)

Catalog Number: N4014

Product Size: 5 mg

Application: Nerve terminal staining

Parameters

Appearance: Red solid soluble in water

Ex/Em (in MeOH): 510/625nm

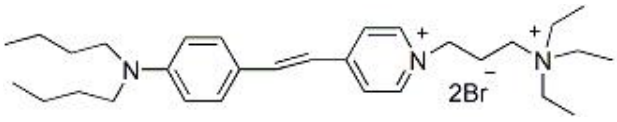
Ex/Em (in membranes): ~480/600 nm

CAS No.: 149838-22-2

Molecular Formula: $C_{30}H_{49}Br_2N_3$

Molecular Weight: 612

Molecular Structure:



Storage

Store at 4℃ and protect from light. When stored as directed, product is stable for at least 12 months.

Description

Nerve terminal probes are a series of cationic styryl fluorescent dyes used to track synaptic activity at neuromuscular junctions or synapses. These dyes usually have a lipophilic tail (two carbon chains) and a highly hydrophilic head with cations. NerveGreen series probes are dyes with a single double bond.

NerveGreen™ C4 is a fixable, activity-dependent fluorescent nerve terminal probe and is a useful tool for synapse studies where subsequent fluorescent immunochemistry is desired. This water-soluble dye, which is nontoxic to cells and virtually nonfluorescent in aqueous medium, is believed to insert into the outer leaflet of the cell membrane where it becomes intensely fluorescent. In a neuron that is actively releasing neurotransmitters, the dye becomes internalized within the recycled synaptic vesicles and the nerve terminals become brightly stained. The nonspecific staining of cell-surface membranes can simply be washed off prior to viewing.

Protocol

The following is a nerve terminal staining protocol for neuronal cells cultured on coverslips.

Nerve terminal dyes can also be used to label endocytic vesicles of non-neuronal cell types. The plasma membrane can be selectively labeled at 4°C, and the labeled endocytosis can occur within 10min at room temperature or 37°C. Tyrode solution or other buffers can be used. The sodium ion channel blocker tetrodotoxin (TTX) can be optionally added to block the action potential and prevent the release of synaptic vesicles after staining. This protocol was optimized according to different experiments.

1. Dilute nerve ending dyes to a final concentration of 4 μM in 50 mM Tyrode solution. Place the coverslip containing the cells in this solution at room temperature for 1 min to completely submerge the cells.
2. Transfer coverslips to Tyrode + 0.5 μM tetrodotoxin (TTX) solution and incubate for 1 min at room temperature.
3. Wash the coverslips repeated at room temperature with Tyrode + 0.5 μM TTX solution.
4. Observe with a fluorescence microscope.

US EVERBRIGHT INC.
Tel:0512-88965152
Web:www.useverbright.com/