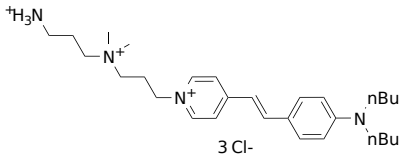
MM 1-43FX *Fixable Analog of FM 1-43 Membrane Stain*

Catalog Number: 21484
Unit Size: 5x100 ug

Product Details

Storage Conditions	Freeze (< -15 °C), Minimize light exposure
Expiration Date	12 months upon receiving

Chemical Properties

Appearance	Solid red
Molecular Weight	560.09
Soluble In	Water
Chemical Structure	

Spectral Properties

Excitation Wavelength	473 nm
Emission Wavelength	579 nm

Applications

MM 1-43FX is a fixable green-fluorescent styryl dye specifically designed for investigating plasma membrane dynamics and vesicle trafficking. It is chemically derived from MM 1-43 (*N-(3-triethylammoniumpropyl)-4-(4-(dibutylamino)styryl)pyridinium dibromide*), a molecule structurally identical to FM 1-43. MM 1-43FX incorporates aliphatic amine functional groups that enable covalent crosslinking with aldehyde-based fixatives, such as formaldehyde and glutaraldehyde, ensuring stable membrane labeling for post-fixation analysis. In aqueous solution, MM 1-43FX exhibits minimal fluorescence; however, upon incorporation into the outer leaflet of the plasma membrane, it undergoes a significant increase in fluorescence intensity. This fluorescence enhancement enables the precise visualization of dynamic cellular processes, including endocytosis, exocytosis, and synaptic vesicle recycling, with high spatial and temporal resolution. In neuronal systems, MM 1-43FX is internalized during synaptic vesicle recycling, enabling precise visualization of active presynaptic terminals. The fixable property of the dye facilitates long-term preservation of cellular structures, supporting downstream imaging and quantitative analysis via fluorescence microscopy and other analytical techniques.

The MM dye series offers a range of variants tailored for diverse experimental needs, including MM 4-64, a red-fluorescent analog; MM 4-64FX, a fixable red-fluorescent analog; and MM 2-10, a hydrophilic derivative designed to enhance destaining efficiency for some quantitative applications.