

Neuro-DiO

Catalog Number: 22065

Unit Size: 5 mg

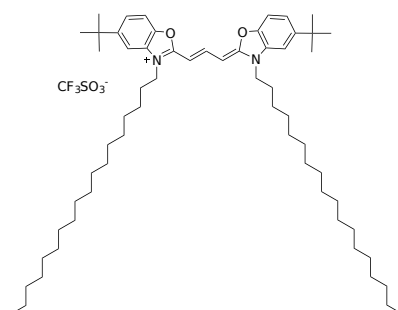
Product Details

Storage Conditions	Freeze (< -15 °C), Minimize light exposure
Expiration Date	24 months upon receiving

Chemical Properties

Appearance	Solid
Molecular Weight	1043.55
Soluble In	DMSO

Chemical Structure



Spectral Properties

Excitation Wavelength	483 nm
Emission Wavelength	501 nm

Applications

Neuro-DiO is a long-chain lipophilic carbocyanine dye optimized for high-resolution neuronal tracing, membrane labeling, and long-term cell tracking in both in vitro and in vivo systems. As a derivative of 3,3'-Diocetadecyloxacarbocyanine perchlorate (DiO), Neuro-DiO exhibits enhanced membrane affinity and improved solubility while preserving the spectral properties of the parent dye, with excitation and emission maxima near 483 nm and 501 nm, respectively. Upon incorporation into lipid bilayers, the dye undergoes rapid lateral diffusion within the plane of the membrane, enabling precise delineation of neuronal morphology, including dendritic arborization and axonal projections. Minimal intercellular transfer is observed under physiological conditions, ensuring cell-specific labeling in complex tissues.

Low cytotoxicity and high photostability support use in longitudinal studies, including live imaging and fixed tissue analysis. Neuro-DiO is effective for both retrograde and anterograde labeling in neural circuits, where persistent membrane integration enables long-term tracking of neuronal pathways. Compatibility with fixation and multiplex fluorescence microscopy further expands its utility in neurobiological research and developmental studies.